HERE'S HOW YOU DO IT



E-BOARD INSTALLATION MANUAL

VANDERSANDEN GROUP



INTRODUCTION

E-Board is a handy do-it-yourself kit from brick manufacturer Vandersanden Group. You use it to insulate your facade while at the same time giving it a whole new look.

With this package, composed of a high-performance insulation panel that is clad on the building site with facing brick slips, both private home improvers and contractors can get right to work. The brick slips, the insulation panels, the adhesive, the plugs and other furnished accessories are supplied as loose parts in a complete package delivered to your building site.

This manual guides you through the preparation, installation and finishing of your E-board project.

We hope you´ll enjoy working with this product!





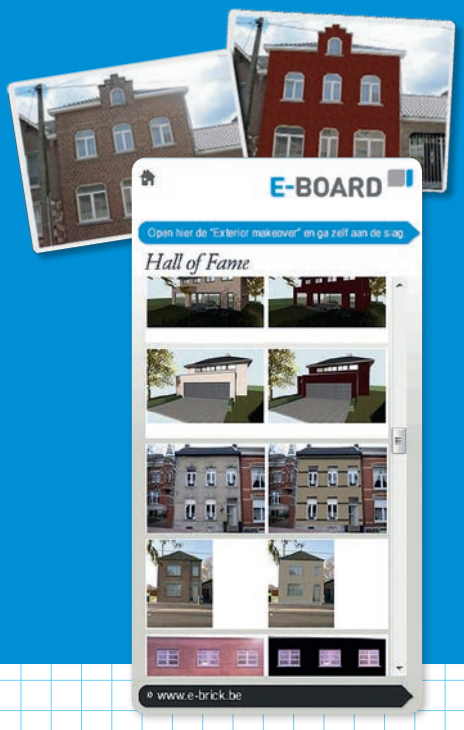
Calculation tool

In order to ensure that the order you place is exactly what you need, we refer you to our online calculation tool at http://tool.eboard.be.

With it you can enter the specific dimensions of the facades of your house one by one, after which a PDF is generated with the right quantities to order and an indicative total price.

With this overview and the attached personal offer, you can then order your package from a building materials dealer of your choice.

Exterior Makeover



An additional aid for better assessing the colour effect of an E-board application is the online Exterior Makeover tool, which can be found at http://exteriormakeover.ebrick.be/.

The Exterior Makeover is a simulation tool that gives you an idea of how your home will look after it's been renovated with E-Board.

By following a few simple instructions, you can create a new look for your house all on your own.
In the "Hall of Fame" you'll find a number of examples of houses that have already received a makeover with E-brick* or E-board.

** E-brick is a ready-to-use variant of E-board. E-brick panels consist of a layer of expanded, high-performance PUR insulation foam, finished with the brick slips of your choice. Unlike E-board, however, E-brick can only be installed by a professional who has received training from Vandersanden on the necessary techniques.*

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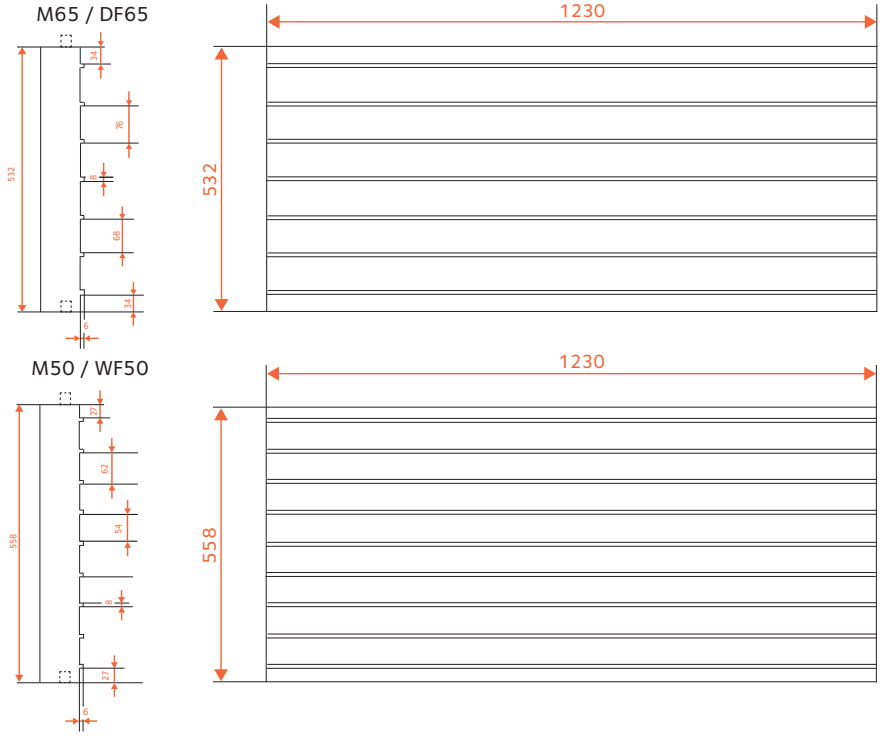
1. COMPOSITION OF THE PACKAGE



1. ECO-EPS insulation panels with rough-milled lineation ensure a correct alignment and improved adhesion of the brick slips. There are panels available for each of our four brick formats. See point 2. The panels are both available for a standard masonry look with joints of around 12 mm, and for a joint-free effect with joints of around 4 mm. *(see examples on page 6)*
2. Handmade brick slips and corner slips of 20 mm give your new facades the appearance of a traditional masonry wall. The brick slips are available in the following dimensions (L x W x H):
   a. M50: 190 x 20 x 50
   b. M65: 190 x 20 x 65
   c. WF: 210 x 20 x 50
   d. DF: 210 x 20 x 65
3. Adhesive on the basis of cement mortar with adhesive components guarantees a permanent adhesion between brick slips and insulation and between insulation and wall.
4. Fastening plugs (like nail plugs or screw plugs) are also provided, depending on the chosen substrate to which the system will be fastened.
5. Slightly-expanding PUR foam ensures the bonding and waterproofing of the insulation panels at the corners, and closes any chinks or cracks between the insulation and other obstacles.
6. The glue gun for injecting the PUR foam is provided free of charge from a quantity of 50 m².
7. A cleaning can ensures that your glue gun always remains clean after completion of the activities.
8. An expandable foam strip or compriband assures waterproofing and air-tightness between the insulation and the window profile.

Dimensions of panels for joints of around 12 mm



Dimensions of panels for joint-free look



2. EXECUTION CONDITIONS

If the following weather conditions are present, the system may not be applied:

- The air temperature and/or the temperature of the substrate is lower than +5 °C or higher than +30 °C during the installation and during the first 48h after installation
- Rainy weather
- Dry wind
- Full sun

3. PREPARATION

3.1. Before starting the insulation activities

All impeding elements (e.g. grills, rainwater drains, wiring, barge boards, windowsills) must be installed and protected according to plan.

3.2. Conditions for the substrate

Dry surface

Any moisture that gets trapped between the insulation and the wall will primarily migrate inwards, which could cause moisture problems indoors.

Clean and cohesive

The surface to be clad must be free of moss, dust, paint residues, loose parts, swelling materials, harmful efflorescences and other adhesion-reducing materials.

Flatness

Surface irregularities that are more than 2 cm high or deep must be eliminated by a special smoothing that has to be performed before starting the works. This levelling out can be done with cement mortar, by filling in major differences with thin insulation panels, etc.

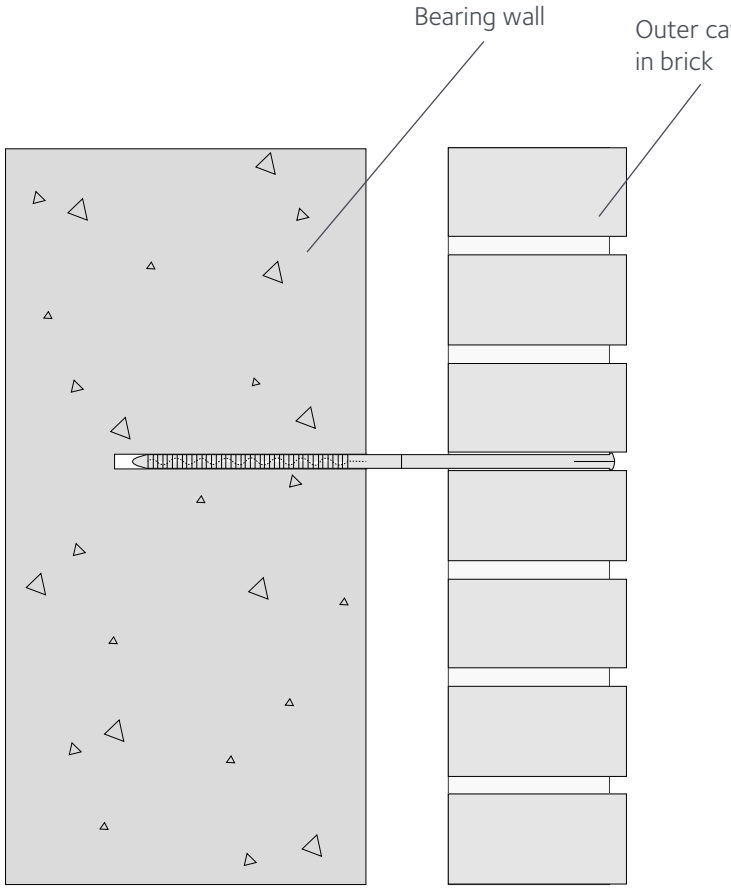


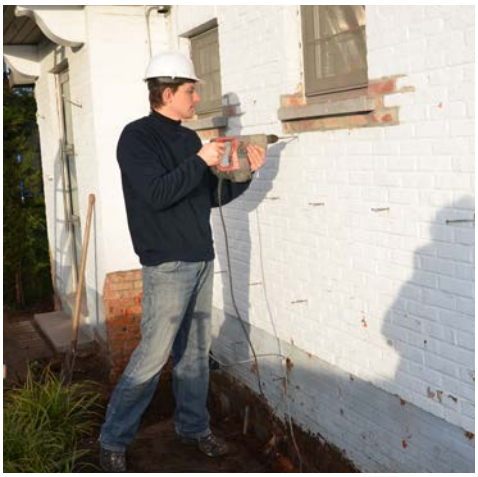
Stability / renovation anchors

If, during the renovation, you have doubts about the load-bearing capacity / stability of your original facade, you can drill extra renovation anchors that will firmly re-anchor the old facade masonry with the inner cavity wall (see photo).

These renovation anchors are usually a stainless steel screw with double thread and plug so that the screw is tightly fastened in both parts of the wall.

(These anchors are not included as standard equipment, but you can get them from us.)





If one or more of these criteria is not satisfied, or in case of any doubt, you should consult a technical advisor or contractor who can help you further.

3.3. Window and door applications

In order to minimise thermal bridges, it is best for the insulation at the windows to run around the corner and right up to the window profile. In renovations this is generally impossible without grinding down the existing reveals[1] and brick-on-edge copings[2].

ATTENTION!

You must always verify that you have not damaged the window profiles and that the stability of the structure of the existing outer cavity wall is not impaired.

L-profiles or concreted-in lintels above the windows still have to have enough load (allowance) if you were to grind out the reveals[1] to the left and right of the windows. Contact a technical advisor if you are not certain whether the stability can still be guaranteed.





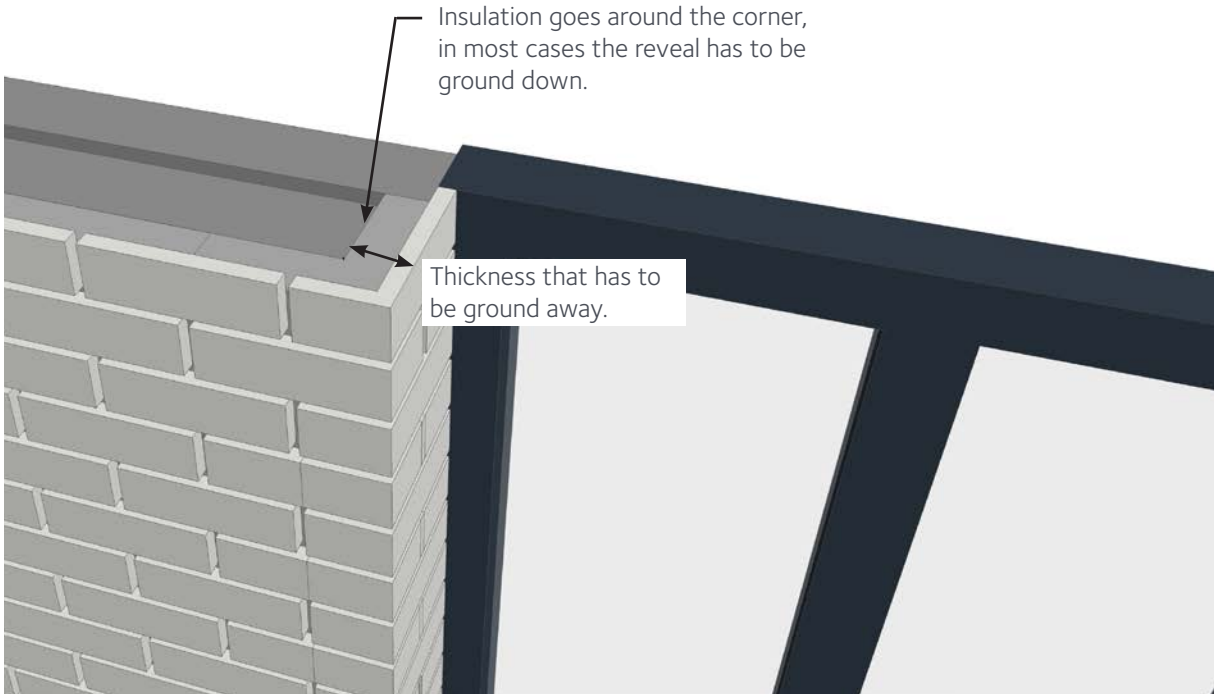
Tip

Always take all appropriate safety measures when you are performing risky works. Helmet, safety shoes, goggles, earplugs, safe scaffolding, etc. are a must.

(1) Reveal: Side of a facade that runs directly up to the window or door profile. Frequently this is the header of the bricks at the window, but this can also be a full brick stretcher or more.

(2) Brick-on-edge coping: A layer of vertically-laid bricks above a window or door with their headers or stretchers oriented upwards.

To know how much has to be ground away, you must add the thickness of the E-board insulation and brick slips and remove this total thickness from your current reveal[1]. For the best-looking result, make sure that on both sides of the window (and preferably for all windows of the house) you take the same margin on the window profiles.

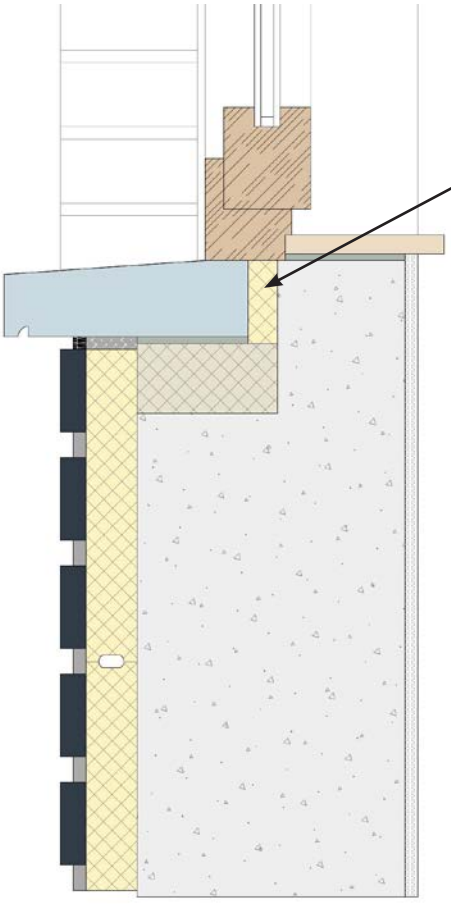




3.4. Windowsills

Because of the extra insulation thickness, the existing windowsills are generally going to be too short. You can solve this by placing an aluminium extension profile beneath the sill (see "profiles" later in this document), or replacing the existing sills with larger ones.





ATTENTION!

When replacing sills, we recommend removing one extra layer of bricks and replacing it with cellular glass (black strip on the photo) or some other compression-resistant insulating material such as XPS, so that this new sill does not form a thermal bridge with the old outer cavity wall.

After all, this old outer cavity wall will henceforth belong to the warm part of the house and therefore should no longer come into contact with cold wall parts.

You should also place an extra two-centimetre insulation between the new external windowsill and the existing indoor sill, so that a thermal bridge is prevented there as well.

3.5. Determining brick size

A handmade brick is characterised by its varied texture and dimensions. Depending on the brick choice, the dimensions of a brick can depart from the standard ones, so you must always take the average brick size of your delivered order, for both the length and the height.
You determine the brick size by laying 10 bricks in a row, and then dividing this total length by 10.

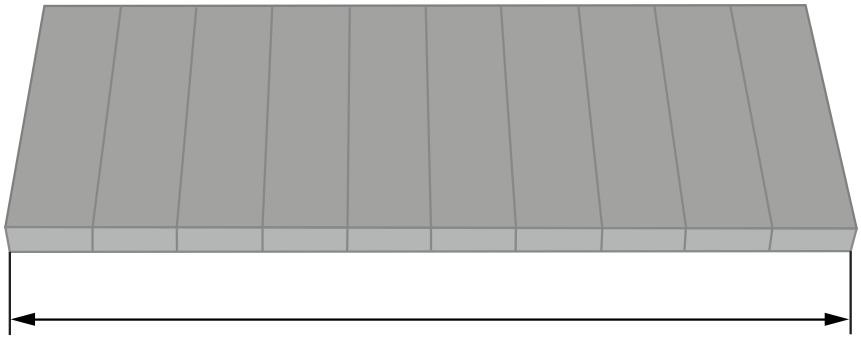
If, as further described in this document, you will be glueing the brick slips, then you use this average brick size and add a chosen joint width.
You then divide the length of the facade by this size and thus determine the number of bricks that must be laid in a row. The following example will clarify this:

Determination of the average brick length and brick height

Length
10 bricks one after another give a total measure of 2070 mm,
which produces an average length of 2070 mm / 10 bricks = 207 mm.



Height
10 bricks on top of one another give a total measure of 510 mm,
which produces an average height of 510 mm / 10 bricks = 51 mm.



Distribution of brick slips in a facade surface

In order to divide a facade of e.g. 3.5 m in length with facing brick slips of format WF, we do the following:
Length of wall / (average brick length + choice of joint width) = number of bricks + joint.
3500 mm / (207 mm + 12 mm) = 15,98 bricks.

We thus take 16 bricks, with 15 joints between them. In order to know the new joint width with these 16 bricks, we do the following:

Total sum of all joints: 3500 mm – (16 bricks x 207 mm/brick) = 188 mm
Individual joint width: 188 mm / 15 joints = 12.5 mm/joint

Height of horizontal joints

In the above example, we assumed that we were using the WF brick format. The E-board insulation panels for this format have a layer size (see technical drawings) of 62 mm. Our average brick height in this example is 51 mm. Our horizontal joints are thus 62 mm – 51 mm = 11 mm high.

4. ALIGNMENT OF THE E-BOARD PANELS

With this system, it is extremely important to get off to a proper start in order to obtain a good final result. In this chapter we will pay detailed attention to the alignment of the insulation panels, and the first thing to do is determine at what height your brick layers have to end up.

4.1. Determination of the starting height without brick-on-edge coping

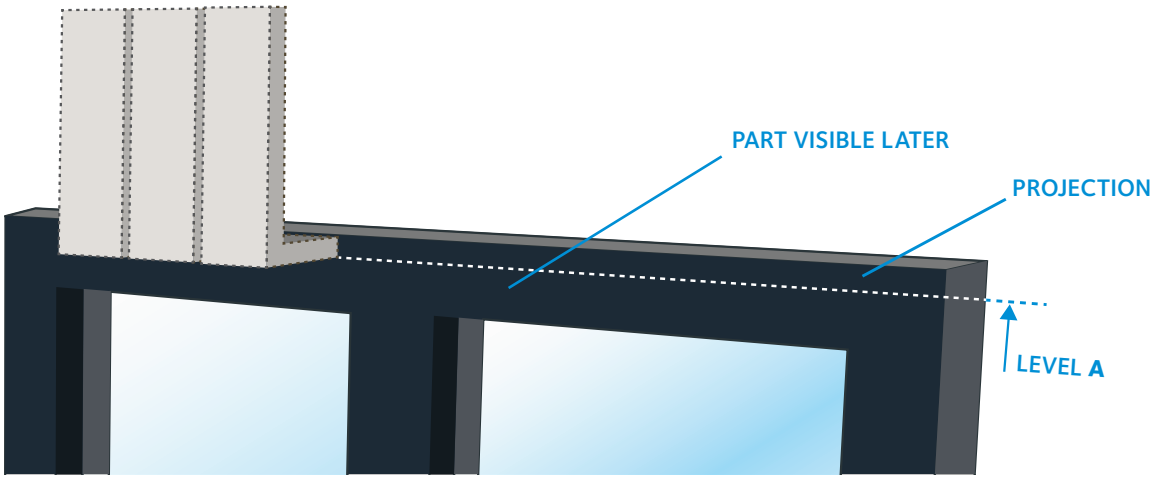
If you do not lay brick-on-edge coping above your windows and e.g. work with a finishing profile at the top of your window, then you determine the height of this profile and thus also the bottom of the next slip layer on this profile. This is the fixed point that you use in order to determine the starting height of your panels, as described in section 4.3 on p. 16.

4.2. Determination of the starting height with brick-on-edge coping

If you are going to lay brick-on-edge copings above your windows, then you must make sure that the slip layer above the brick-on-edge coping is aligned with the rest of the masonry next to the brick-on-edge coping(2) so that you don´t get any staggering in the slip layers. For this you go to work as follows:

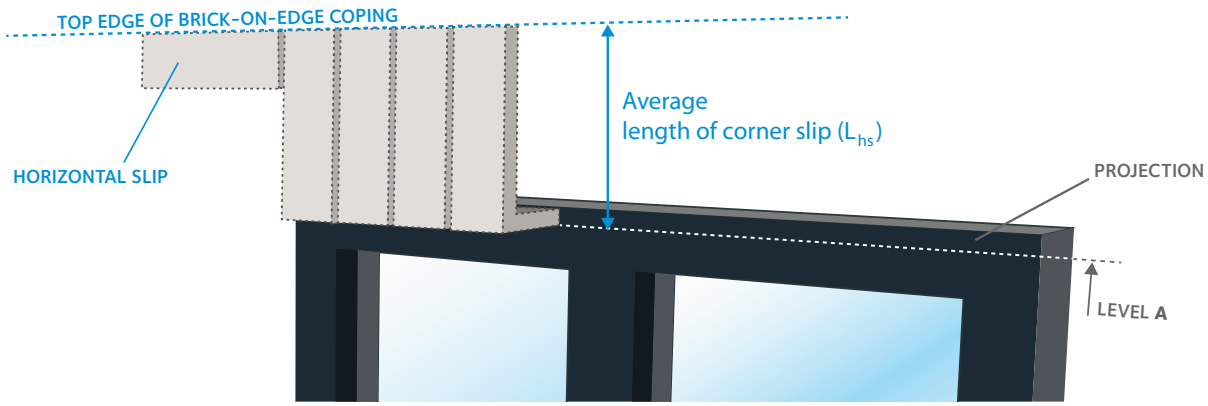
Step 1: Define the bottom of the brick-on-edge coping on your window profile (Level A)

For this, choose a certain projection on the window profile that you maintain on all windows for the best-looking result. In other words, define the width of the window profile that will still be visible later.



Step 2: Look for the top edge of the brick-on-edge coping

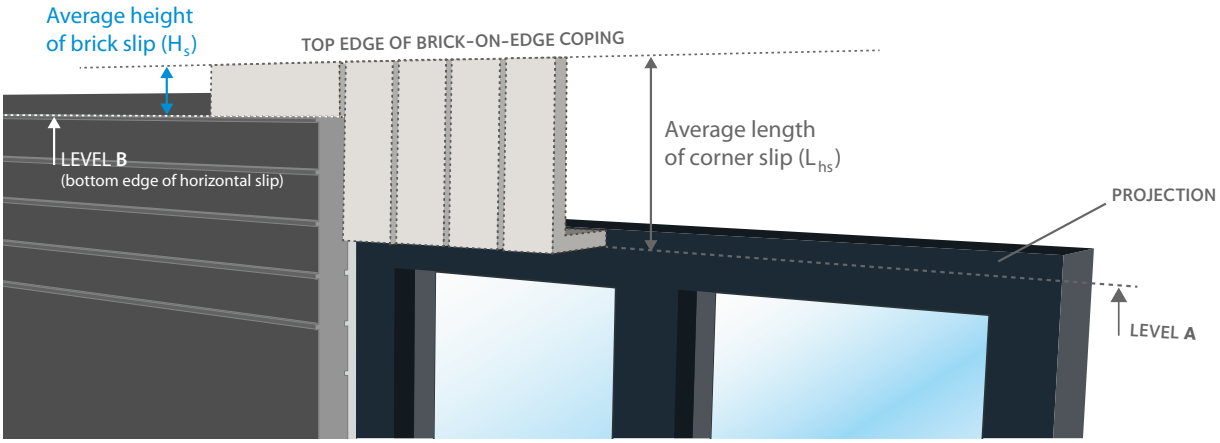
You obtain the top edge of the brick-on-edge coping by measuring the average length of the corner slips (L_{hs}) back to the top. This then becomes the alignment for the horizontal slips next to the brick-on-edge coping.



Step 3: Determine the bottom edge of the horizontal slip (Level B)

Determine the bottom of the first horizontal layer next to the brick-on-edge coping. For this use the average height of the brick slips (H_s).

$$\text{Level B} = \text{Level A} + L_{hs} - H_s$$



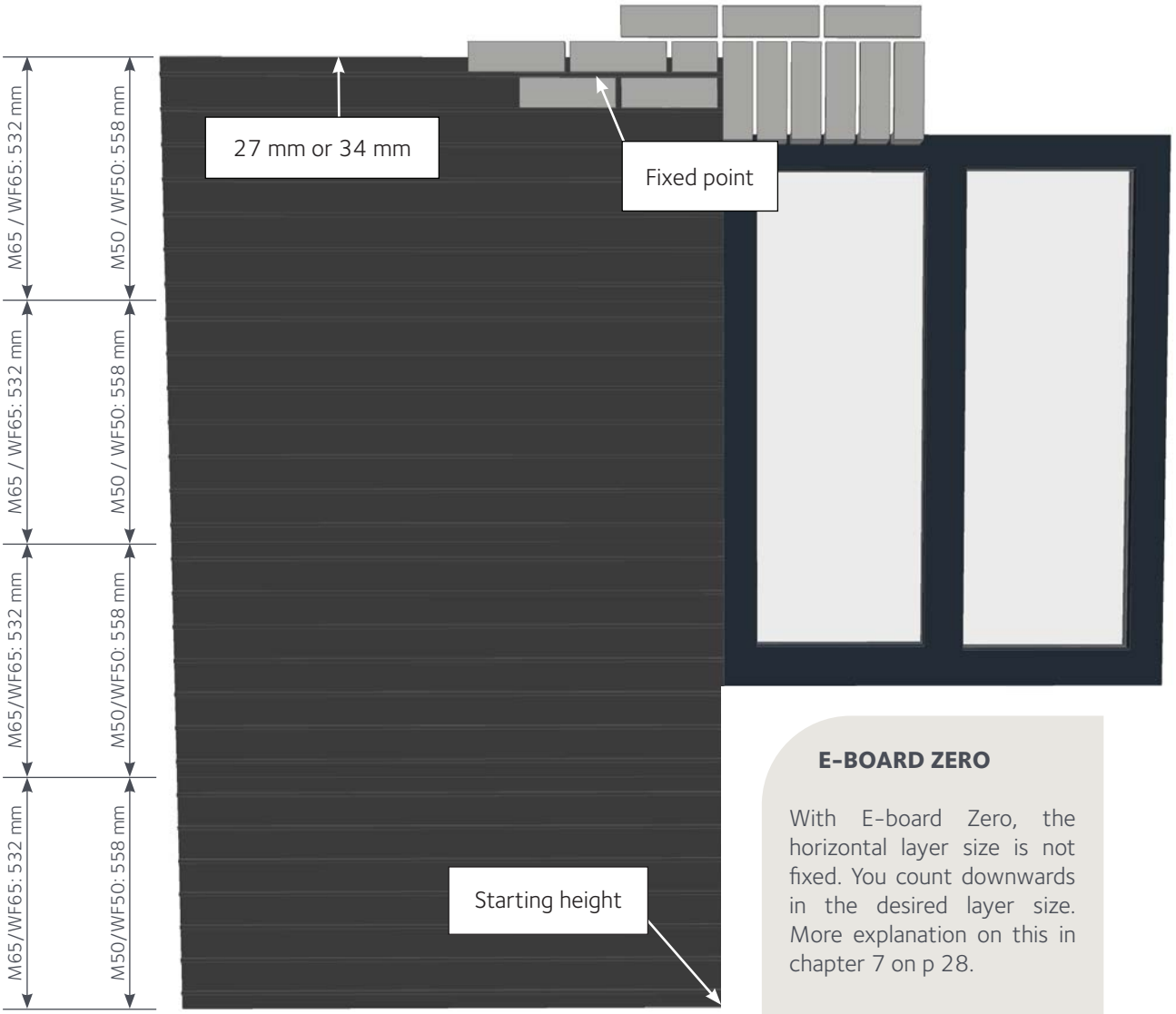
4.3. Determination of the starting height of the panels

Count downwards in slip layers

Now you can count downwards - in measures of 62 mm (brick slip format M50 or WF) or 76 mm (brick slip format M65 or DF) - the number of layers in order to find a starting point for your panels. With this dimensioning you define where each ridge lies and you can thus also determine the height of your insulation for the reveals.

Count downwards in complete panels

If you wish to count downwards in complete panels, do the following:
You take the last obtained height (the fixed point) and add 27 mm (M50 or WF) or 34 mm (M65 or DF) upwards in order to find the upper edge of a complete panel. As of this height you can count per panel 558 mm (M50/WF) or 532 mm (M65/DF) downwards in order to thus determine your starting height of the panels.



E-BOARD ZERO

With E-board Zero, the horizontal layer size is not fixed. You count downwards in the desired layer size. More explanation on this in chapter 7 on p 28.

4.4. Alignment of the starting row of the panels

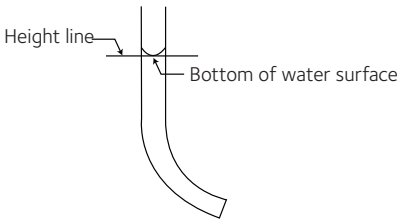
With a laser device or a water hose[4] you mark out for the entire facade or house a perfect horizontal line at the height that you have just obtained.

With a stain chord[5] you can draw a chalk line on the facade and you can begin installing your panels.





(4) Water hose: This old but effective working method produces an exact horizontal dimensioning when used correctly. This device is available from building material suppliers and consists of a transparent narrow water hose that is 95% filled with water. You hold 1 end of the hose at the place where the height is already defined, and the other end of the hose at the place where you want to attain the same height. By placing the end of the hose at the already defined point higher or lower, you can bring the top of the water to the same height as the already-defined point. The height of the water at the other end of the hose is then exactly the same height as the defined point, so that you can indicate your new height line there.
Pay careful attention to the following:



- *There can be no air bubbles in the water hose.*
- *If you hold the hose too high on one end, the water might run out on the other side.*
- *You should always take the bottom of the (concave) water surface in the hose. This is the most accurate measure.*
- *The hose must be protected during freezing weather so that the water in it does not freeze.*
- *With successive measurements you always take the same point of reference in order to mark out the height, so as to avoid carrying any mistakes on to a following measurement.*

(5) Stain chord: Chalk chord with which you can draw a coloured, thin and straight chalk line on your facade.

5. INSTALLATION OF THE E-BOARD PANELS

5.1. Starting profile

If you remain above ground level with your first layer of insulation panels, we recommend first installing a starting profile so as to protect the panels along the bottom. This starting profile also serves as a water discharge through its drip mould on the bottom.



ATTENTION!

You must pay attention that no holes are drilled in the wall beneath ground level, so as to avoid possible moisture infiltration. This bottommost part is bonded in place against the wall with PUR foam, so that a waterproofing between the insulation panels and the facade is also created. We also recommend when using starting profiles to adhesively bond the panels with PUR foam or silicones onto the profiles.

Tip

In order to obtain an optimal insulation shell, however, it is better to install the insulation boards at least 20 cm deeper than the level of the ground floor. In this way you avoid possible thermal bridges from below. A starting profile is no longer necessary with this application.

5.2. Adhesive bonding of the panels

The insulation panels are bonded to the substrate by means of the adhesive mortar. This mortar ensures that the panels can resist any tendency to warp under extreme temperatures. Minor irregularities in the bearing wall are also eliminated.

You prepare the cement mortar by adding pure tap water in a clean mortar tub (6l of mixing water per sack of 25 kg) to the dry cement powder and mixing them with an electric mixer at a low RPM. Don't add too much water at first: if the mass is not plastic enough you can still add water afterwards. Then allow the mortar to stiffen for 5 to 10 minutes and mix the mortar again a second time. The mortar is stiff enough when you can glue a brick slip against the insulation and the slip doesn´t fall off.



ATTENTION!

The outside temperature must always be above 5 °C during the first 48 hours after bonding. When the added water in the glue freezes, it will expand and pushes the brick slips off the insulation.

ATTENTION!

Add the right quantity of mixing water. Due to the additives in the adhesive mortar that assure the waterproofing, the mortar will initially seem to be too dry during the mixing. However, as you continue to mix, this substance will suddenly transform and become plastically processable. Adding too much water means that the mortar will no longer be watertight, so adding the exact quantity is essential.

The application of the adhesive mortar to the panels is done using either the comb bed method, the mortar points method or the mortar strips method.

Comb bed method

With the comb bed method (see fig. 1), the adhesive mortar is applied over the entire insulation panel. This method is used with substrates having irregularities **of less than 10 mm/2 m.**

Mortar points method

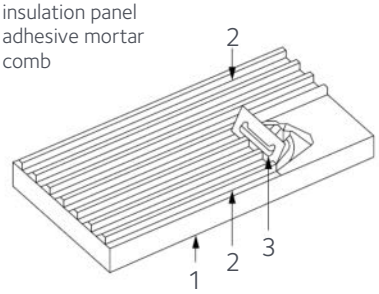
When using the mortar points method (see fig. 2), the adhesive mortar is applied in a closed strip along the edges of the insulation panel as well as in a number of adhesive "points" distributed over the panel surface. Therefore the adhesive mortar is applied at some distance from the edge of the panels. This method is preferred in the case of substrates with irregularities greater than 10 mm/2 m, but always with a maximum of 20 mm. The application of the adhesive mortar to the edges is of great importance in order to prevent deformation.

Mortar strips method

The mortar strips method (see fig. 3) is an alternative to the mortar points method. With it the adhesive mortar is applied in a closed band along the edges of the insulation panel, as well as a strip in the middle.

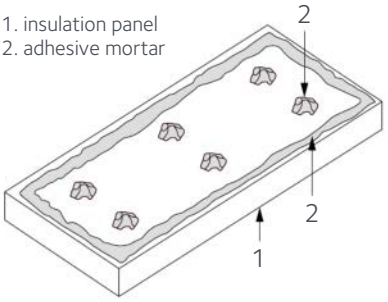
1. COMB BED METHOD

1. insulation panel
2. adhesive mortar
3. comb

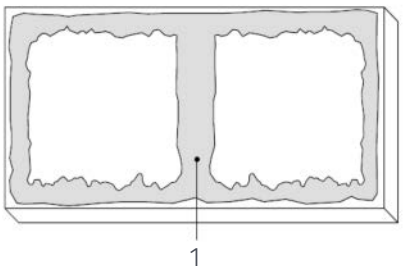


2. MORTAR POINT METHOD

1. insulation panel
2. adhesive mortar



3. MORTAR STRIPS METHOD



1. adhesive mortar

ATTENTION!

- In order to guarantee a good connection, no adhesive mortar may be allowed to get into the joints between the panels.
- The quantity of adhesive that is provided is calculated for the application of adhesive with a 6 mm adhesive comb, for both the adhesive bonding of the insulation panels on the wall and the slips on the panel. If the adhesive is used to fill in irregularities in the bearing wall, you'll need extra adhesive in addition to that which is supplied. This extra adhesive is not included in the E-Board package price. **This means that approximately one third of the supplied glue is intended for the back of the insulation plate, one third for the front of the insulation plate, and one third for the brick slips.**
- Independent of the method that is used, you must make sure that a minimum of 60% of the panel surface is adhesively bonded and the outside edges of the surface on the back are always fully bonded. The installer must check this during the execution.
- No mortar adhesive is used with a wooden back structure. In this case PUR foam is provided to guarantee good adhesion of the insulation to the wood. You apply the PUR according to the mortar strips method, allow it to cure for around 10 seconds and then press the panel against the wall.

5.3. Installation of the panels

Install the insulation panels in a staggered pattern[6] against the wall and beat the panel with a soft hammer firmly into the other panels.



ATTENTION!

Always make sure that the ridges of the different panels are neatly in line with one another, and that the panels are always set perfectly horizontally. Regular verification with a water level, both horizontally and vertically, is a must!



Check very regularly the flatness of your installed panels in the facade surface with a water level, in order in this way to eliminate any irregularities in the old bearing wall and obtain a completely flat wall. The mortar adhesive on the back of the panels offsets these irregularities. If your panel comes somewhat too far out from the wall due to excessive mortar adhesive, you can by means of rotating movements slightly force out the mortar between the panel and the wall, so that the mortar layer gets thinner and the panel ends up closer to the wall.

Tip

In order to protect the panel while hitting it, you can use another piece of (waste) insulation on which to strike, as can be seen in the photo.

Tip

When the adhesive has hardened, before placing the slips you can verify whether no excessively large hollow spaces are present between the insulation panels and the wall.

You do this by knocking gently on the panels and listening for hollow sounds. If the hollow spaces appear to be fairly large, you can use your PUR gun to prick through the insulation at this point and inject a small quantity of PUR. This PUR will swell up and fill the cavity, and also increase the panel´s adhesive bonding to the wall.



(6) Staggered: Placement of the insulation panels in such a way that the vertical joints of the panels never end up directly on top of one another between the different horizontal layers.

5.4. Plugs

Curing of the adhesive

After the panels have been adhesively bonded against the bearing wall and the adhesive has hardened for around 48 h, you install the fastening plugs as extra anchoring. Because the adhesive is already cured, you don´t have to worry that the vertical flatness (which you obtained by means of the smoothing out with the adhesive) will be affected by hammering or screwing in the plugs.

Installation of the plugs

The intermediate distance between the fastening plugs and the edge of the panel must be around 100 mm (measured perpendicular to the edge). The fastening plugs must be anchored at least 35 mm into the load-bearing substrate (see table), and you must drill an additional 10 mm deeper in order to compensate for the spreading of the plug and any drill dust.

Drill with a masonry drill [10] (in stony materials) or a drill hammer [11] (in concrete) with drill diameter 8 mm through the panel and into the facade and anchor the panel by means of the (delivered) hammerset fixings (all substrates except cellular concrete) or screw fixings (substrate cellular concrete).



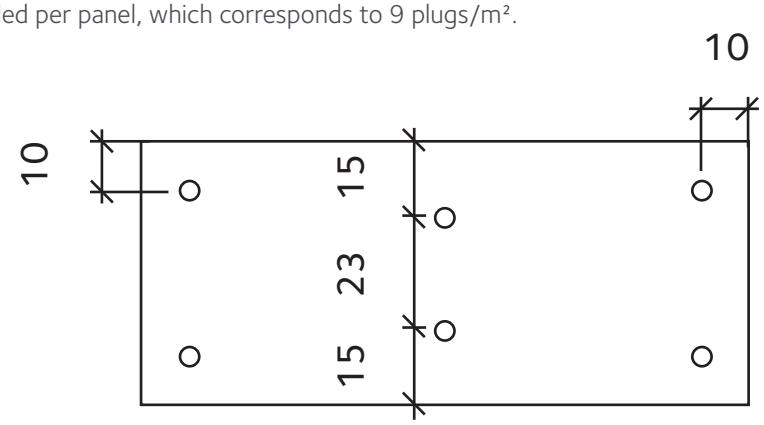
ATTENTION!

Intermediate layers such as plastering work, flattening layers, etc. are not regarded as load-bearing and therefore have to be added in when calculating the total anchoring depth.



10)) Masonry drill: A standard drill with mechanical masonry drill function for lighter jobs.
11) Drill hammer: A drill with a powerful electropneumatic-driven striking mechanism, specially-designed to bore into heavy materials.

6 plugs are installed per panel, which corresponds to 9 plugs/m².



Example of plug fastening

Required anchoring depth of plugs (count an extra 10 mm of drilling depth)		
Substrate	Type of plugs	Anchoring depth
All types of substrates except for cellular concrete *(Insulation ≤ 40 mm)*	Hammerset plug NTK-U	Minimum of 40 mm
All types of substrates except for cellular concrete *(Insulation > 40 mm)*	Hammerset plug CN8	Minimum of 35 mm
Cellular concrete	Screw plug 8U	Minimum of 70 mm

TIP
If the insulation washer of the plug falls right on a ridge, you break the ridge away at this point so that it can be hammered in to the level of the insulation panel.

TIP
If you lay brick-on-edge copings above the windows, you have to either turn the insulation above these windows 90°, or manually remove the ridges over the height of the brick-on-edge coping.



5.5. Corner finishing at the windows

There are several possibilities for finishing the corners at the windows, which can differ specifically from building site to building site.

Install reveal insulation first

With this method we start first with the cladding of the reveals before installing the rest of the insulation. However, this is only indicated when screw plugs (in the case of ytong) are provided, so that afterwards you can still further tighten this insulation.

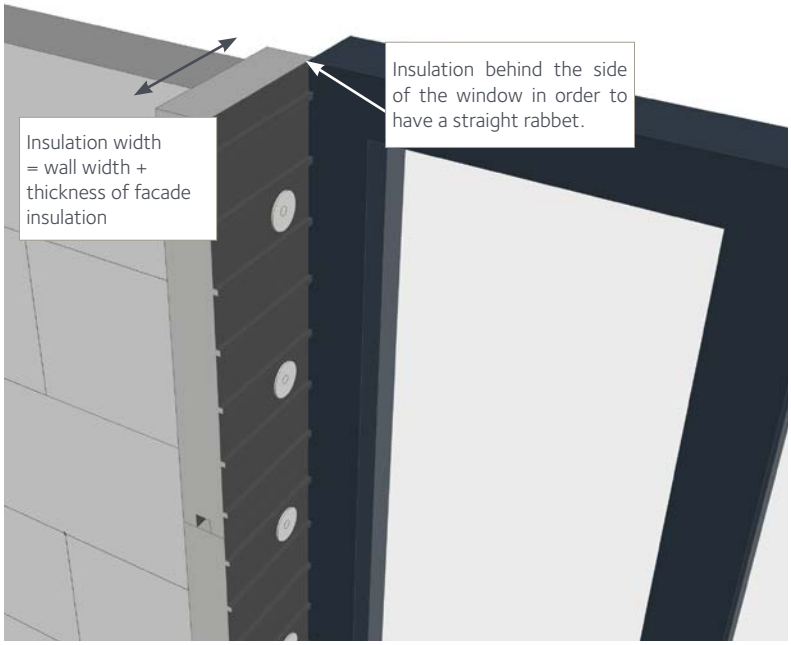
You start by sawing pieces of insulation in the width of the original reveal plus the insulation thickness that is added to it.

Then you inject a couple of strips of PUR foam on the back of this panel and allow it to swell up for ten seconds. Then you glue this panel against the reveal and fasten the (also provided) screw plugs through the insulation into the bearing wall. Because the possibly ground-down brick reveal is generally not entirely straight, you do not yet completely tighten the screw plugs. These serve provisionally only as support to hold the insulation in its place.

In order to remain precisely vertical with this insulation against the reveals, you can use the side of the window profile as a rabbet. This is free because the reveal has been ground away. The slips will then afterwards extend two centimetres (the thickness of the brick slip) over the window profile and thus cover a small part of the profile.

After installation of the insulation and plugs, you inject some extra PUR foam between the insulation and the wall along the side, so that all cavities are completely filled in. After curing of the PUR (between 1 to 2 h, depending on the temperature), you tighten the screw plugs and you've created a strong corner.

After you have processed all the reveals in this way, you can start installing the insulation panels in the facade surfaces. The facade panels fit flush against this reveal insulation. You can fill up the joint between these two panels with PUR foam, so that this joint is adhesively bonded and watertight.

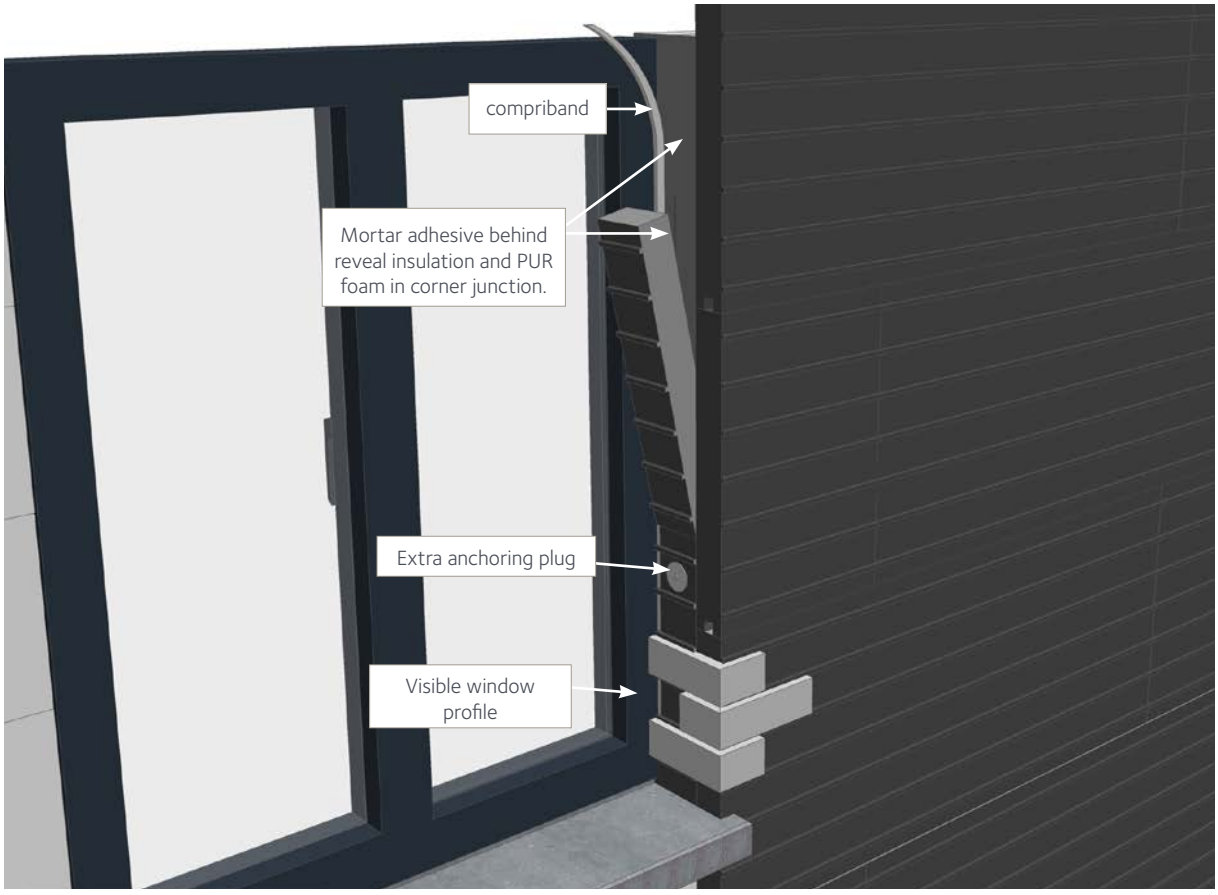


Install reveal insulation afterwards

A second possibility is to first install the facade panels and allow them to extend over the original (ground-down) reveal, in order then to wedge the insulation of the reveals in between the window and the facade insulation.

The difficulty with this method is that the facade insulation panels for all windows always have to extend equally beyond the ground-down reveal, so that after installation of the brick slips the same window profile width always remains visible. An aid for this is to always verify during the installation of the facade panels with a corner slip whether the visible window profile width is correct.
First you glue a strip of compriband on the window profile against which the reveal insulation is pressed. Be sure that you do not place the compriband too soon, because it begins to swell up as soon as it is placed.

You place the insulation strip of the reveal with sufficient mortar adhesive on the back, so that this insulation adheres well against the wall and you can still adjust the depth and vertical flatness.
Between the side of the reveal insulation and the facade insulation you inject PUR foam to obtain a perfect bonding and waterproofing between the two panels.
After curing of the mortar adhesive, you can still install extra plugs for reinforcement, but in most cases this is no longer necessary.



TIP

Where two insulation panels meet one another at a corner, you can first inject a strip with the provided slightly-expanding PUR foam on the head of the already-installed panel.
After about 10 seconds (after the first swelling of the PUR), press the second panel into the foam against the corner.
In this way these panels are adhesively bonded to one another and the waterproofing is guaranteed.



5.6. Fastening of various elements and drilling of the insulation

Elements such as lighting, sun screens, advertising panels, electricity cables, etc., can be fastened directly on the wall to the supporting substrate, through the insulation, with a stainless steel mounting bracket.

When drilling through the external facade insulation, the infiltration of moisture between the insulation and the drill hole must be prevented by installing a swelling tape and joint mastic.

Typical perforations are:

- Ventilation openings
- Flue gas outlet: this is double-walled so that the temperature on the outside against the insulation doesn't get too high.
- Outdoor water taps.

The materials that come into contact with the insulation system must be corrosion-resistant (aluminium, stainless steel, plastic, etc.).

6. ALIGNMENT AND INSTALLATION OF THE BRICK SLIPS

6.1. Alignment of the brick slips

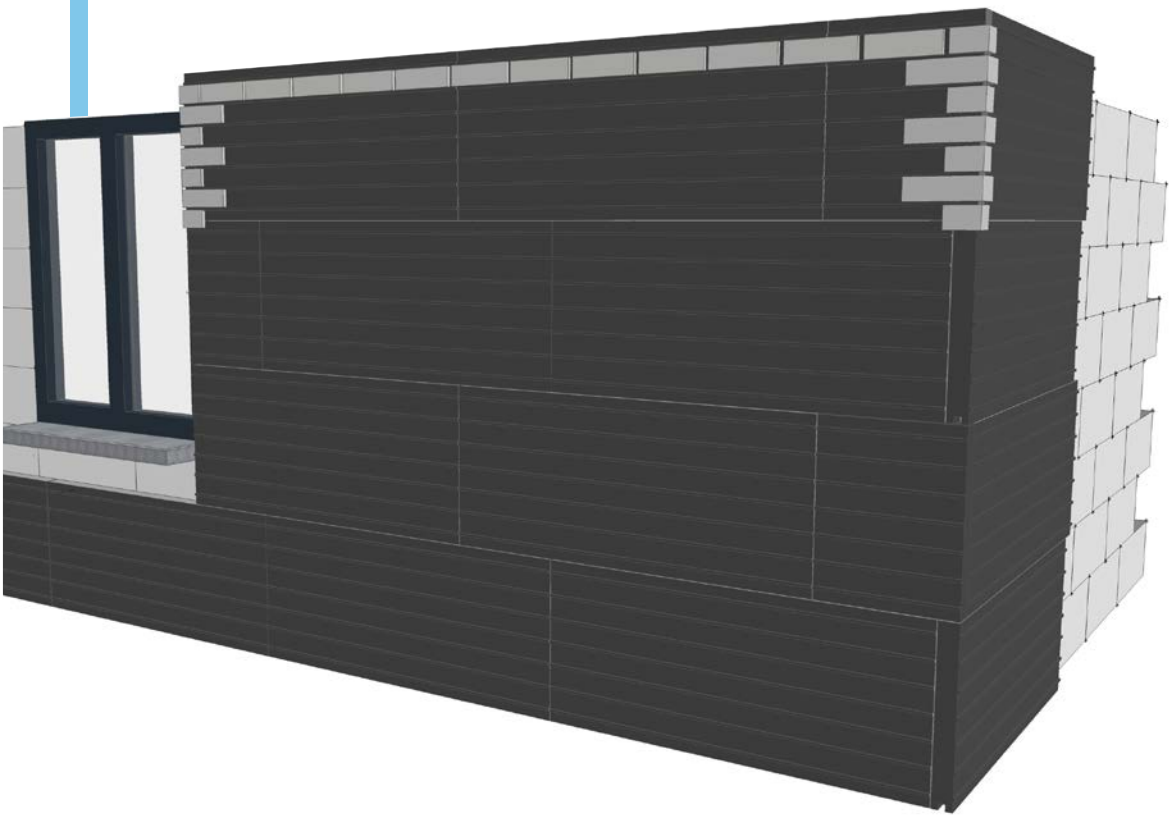
Begin by measuring at a facade corner and divide the facade surface to the next facade opening into the number of brick slips according to the average brick slip size [3]. With this average length of the brick slip plus the joint width you glue a first layer of brick slips at the top of the facade. Then every two brick slips you draw a vertical chalk line downwards in order to keep the vertical alignment of the head joints [7] nicely identical.

ATTENTION!

In the case of an irregular bond, you can divide the facade into a number of complete, half or three-quarter slips so that you end up perfectly at the window. In order to still maintain the proper vertical lineation, you can draw auxiliary lines that correspond to complete, half or three-quarter bricks. Then later you can use these auxiliary lines as desired if it comes out in one layer.

TIP

We recommend bonding the brick slips onto the insulation panels from top to bottom, in order to avoid any soiling of the lower-lying brick slips.



(3) You define the average length, width or height of the brick slips by laying ten pieces one after the other and then dividing this total length by ten.

(7) Head joints: vertical joint between two bricks.

6.2. Installation of the brick slips

In order to glue the brick slips, you first fill in adhesive between the lineation ridges with the smooth side of a comb trowel. Afterwards you comb back in with a 6 mm toothed comb.

Then you smear adhesive over the back side of the brick slip with the toothed comb and you glue it against the ridge of the insulation board. The application of adhesive to the two surfaces, both the brick slip and the insulation panel, is essential for the bonding strength of the adhesive mortar. By pressing on the slip and moving it a bit to the left and right, you prevent air from remaining behind the brick slips. Were it to remain, this air could later cause possible frost damage.

Only that quantity of adhesive must be applied which can be processed within the open time of the adhesive, so as to avoid film formation on the surface of the adhesive.



ATTENTION!

The outside temperature must always be above 5 °C during the first 48 hours after bonding. When the added water in the glue freezes, it will expand and pushes the brick slips off the insulation.

6.3. Expansion joints

Expansion joints [9] must be used in accordance with the general rules for facade masonry. For renovations you follow the already-existing expansion joints.

6.4. Compriband

An expandable foam joint like compriband must be provided between the insulation and the window frames, in order to ensure thermal insulation and watertightness.

6.5. Jointing

Joint the panels after the mortar adhesive behind the brick slips has hardened sufficiently. We recommend waiting at least one week before starting the jointing.

When you have installed a new structure, your substrate must be at least 3 months old before starting the jointing, in order to avoid shrinkage and creep of the building materials which would cause crack formation in the joints.



ATTENTION!

Make sure that the entire surface of the panel has been covered with the mortar adhesive, since this adhesive contributes to the waterproofing of the system.



TIP

In order to reduce the risk of efflorescence, the temperature during the jointing must always remain above 5 °C, and the freshest joint work must be covered in case of long or intense rainfall. When using a ready-to-use joint mortar, it is essential to read and follow the instructions on the packaging.

(9) Expansion joints: A vertical continuous dilatation joint in the facade that is filled with an elastic putty and which absorbs movements within the facade.

7. INSTALLATION OF E-BOARD ZERO

E-Board Zero panels are provided only with a ribbed surface in order to improve the adhesion of the brick slips. Because there are no ridges on these panels for the purpose of aligning the brick slips, these panels do not have to be specially aligned. Of course, the panels do have to be installed level and connect closely to one another.

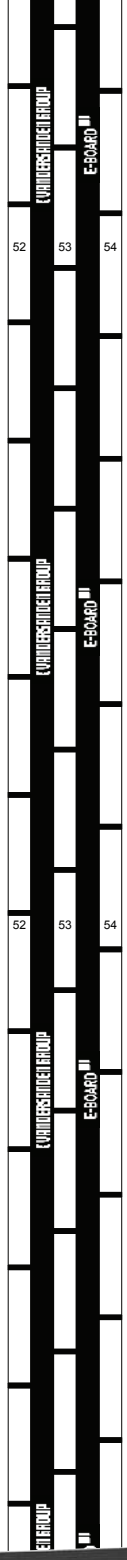
The alignment of the brick slips is obtained here by working with a masonry cord. This is provided, together with clamping blocks and a measuring rod.

How do you do it?

After the average height of the bricks has been determined - as indicated under section 3.5 - you choose the desired joint thickness so as to determine the layer size (average height + joint thickness). Just as in 4.1, you choose the point where the bottom of the brick slips have to coincide. Then you count in a multiple of the chosen layer size downwards or upwards in order to determine the starting point of your brick slips.

The measuring rod →

This measuring rod contains 3 layer sizes for brick slips of format M50 and WF50, and on the other side 3 layer sizes for the brick slips of format M65 and DF65. You choose the desired layer size depending on the average brick size and the chosen joint thickness.



With this starting point you place the provided measuring rod at the bottom or at the top equal to the correct size distribution according to your chosen layer size. Temporarily hang this measuring rod in place by means of a nail and write with felt-tip pen the size distribution on the insulation panels.

Then you plot the starting point at the end of the facade once again with the aid of a water hose. If the facade is too long, you can place intermediate points every 2 to 3 metres.

At these intermediate points you once again place the measuring rod and also plot the layer size.

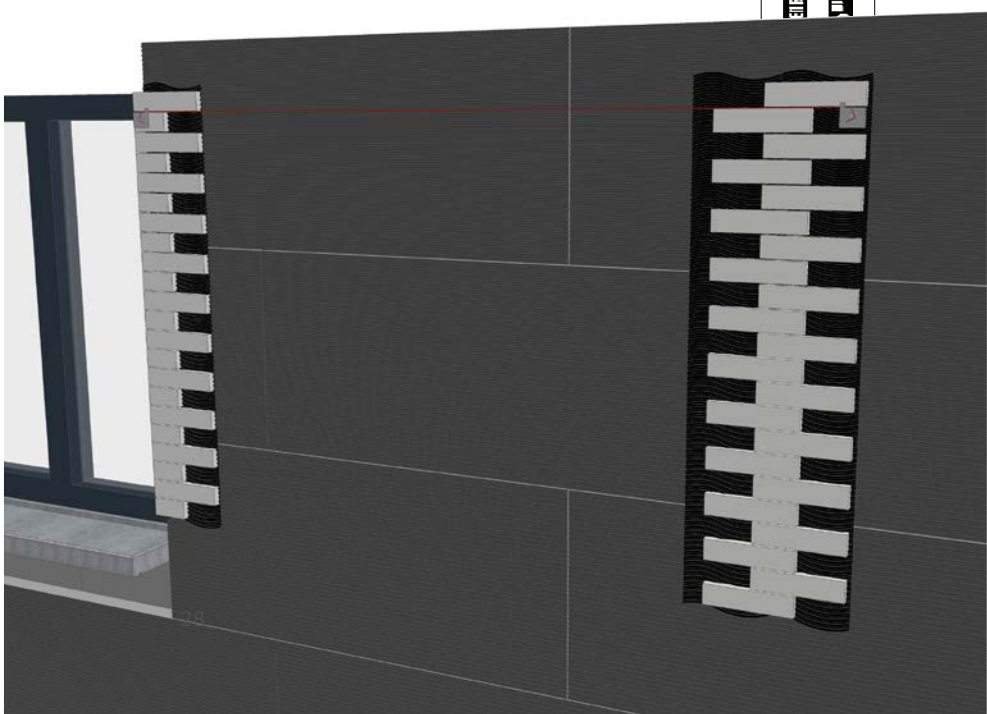
Then per starting point in each case you install a vertical row of brick slips. Take care that you don't comb away the layer size indications on the E-Board panels with the adhesive.

TIP

We advise to use an average joint thickness (horizontal and vertical) of 3 mm to capture easier some tolerance in measurements of the brick slips. A smaller joint thickness is possible, but this requires more effort to align the vertical joints nicely.

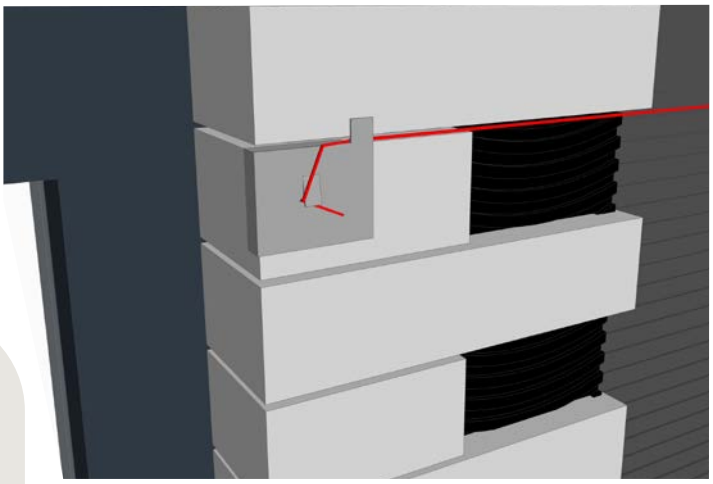
ATTENTION!

The horizontal distance between the vertical rows of brick slips must correspond with the already-determined stretcher size (average brick length + head joint), as described in section 3.5.



Between the two vertical strips you can now hang the clamping blocks with tension cord on the corners of the brick slips. In this way you get a perfect straight line that you must follow in order to frame the brick slips between the strips. Be careful: the tension on the cord must not cause the brick slips to shift where the little block is attached.

The clamping block:
This clamping block hooks in behind the corner of the brick slip. The cord is firmly wedged behind the protruding lip in the little block and runs along the upper edge of the brick slip to the other brick slip. The blocks remain in their places due to the tension on the cord.



ATTENTION!

Both the horizontal and the vertical alignment of the brick slips must be done very precisely with E-Board ZERO, since there is much less tolerance on the thin joints to still correct any errors.

TIP

We advise to use an average joint thickness (horizontal and vertical) of 3mm to capture easier some tolerance in measurements of the brick slips. A smaller joint thickness is possible, but this requires more effort to align the vertical joints nicely.

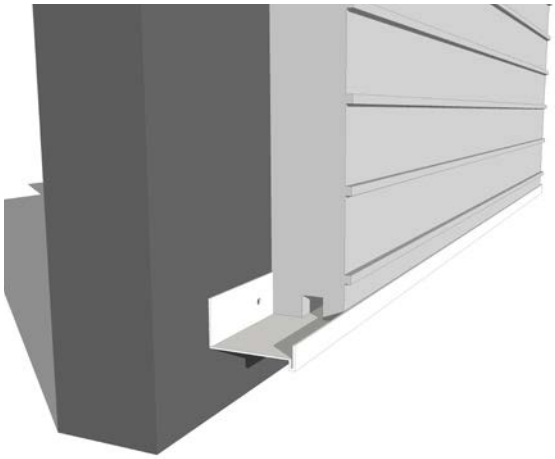


ATTENTION!

Using a flat comb, always quickly remove the adhesive that you applied to the panels, but which you cannot clad with brick slips in time. E.g. between the slips of the vertical strips in the above drawing.

8. PROFILES

Different types of profiles are available for all kinds of applications. These profiles can be supplied in the colours anthracite (7016), dark brown (8019) and white (9010), and also as blank profile.

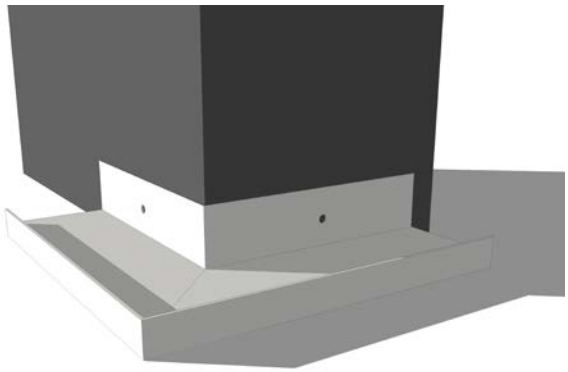


Type A

The starting profile is recommended for reinforcing the E-board panels at the bottom when the insulation ends aboveground.

ATTENTION!

The starting profile is not a finishing profile and it is perforated. This profile is also only available in the colour silver.

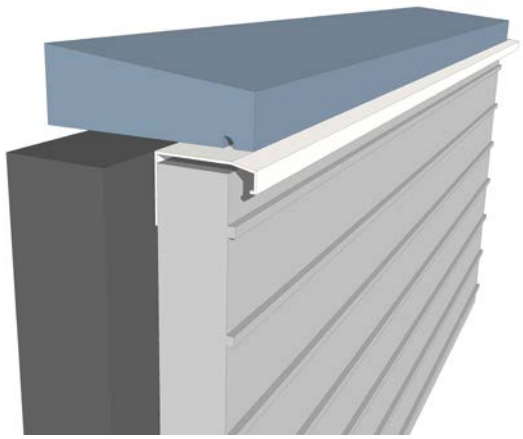


Type B

The corner starting profile offers a possible corner solution for the above starting profile.

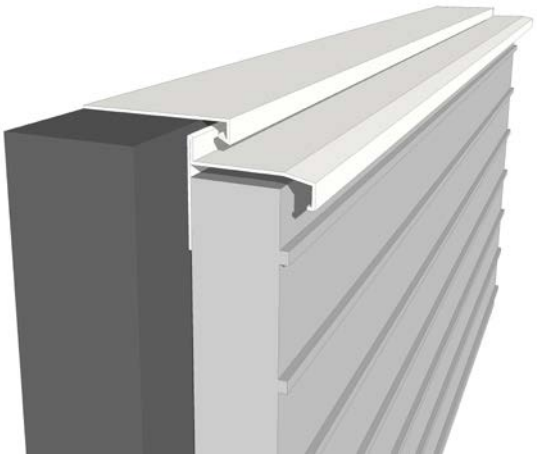
ATTENTION!

The starting profile is not a finishing profile and it is perforated. This profile is also only available in the colour silver.



Type C

This profile can, for example, be used under a sill when it appears to be too short. Other applications are also possible with it.



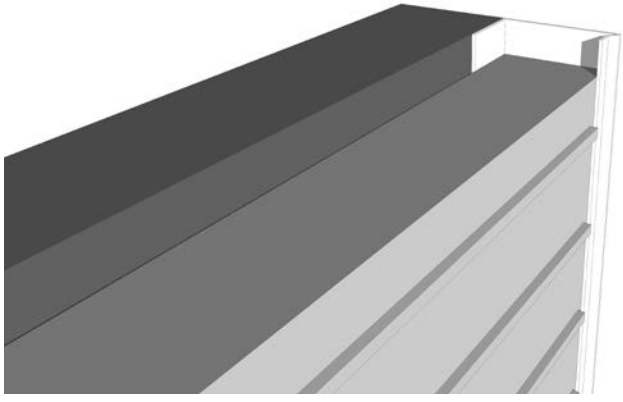
Type D

This profile has an upright lip and can be used to stick behind the original roof edge profile and thus to extend the roof edge profile. This upright lip ensures the waterproofing between the two profiles and thus prevents water infiltration behind the insulation.



Type E

This profile with a flat horizontal lip can be used as a finishing profile on top of an insulation panel.



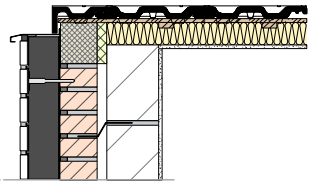
Type F

This profile comes level with the brick slips and thus forms a finished side of the E-board panels.

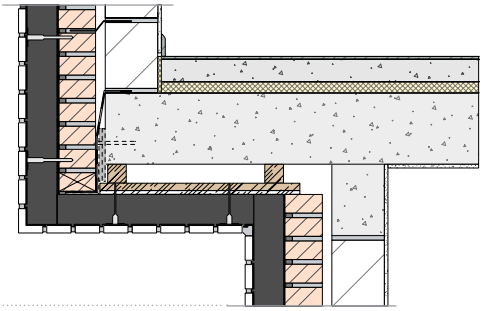
9. DETAILED DRAWINGS

In this chapter you will find a cross-section of a renovated façade with several details. Of course, not every building is built according to the same principles. If you are dealing with a specific problem, which you cannot find in the drawings below, you can always contact Vandersanden Group.

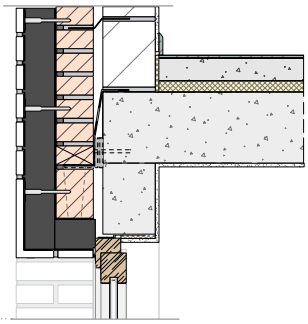
Roof connection
see page 41 & 42



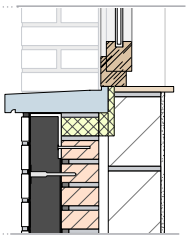
Overhang
see page 40



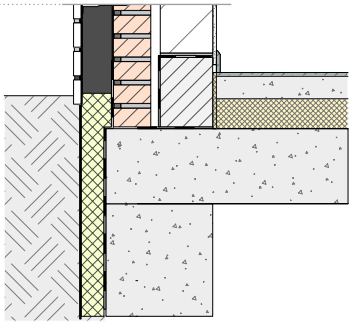
Top of the window
see page 38 & 39



Window-sill
see page 36 & 37

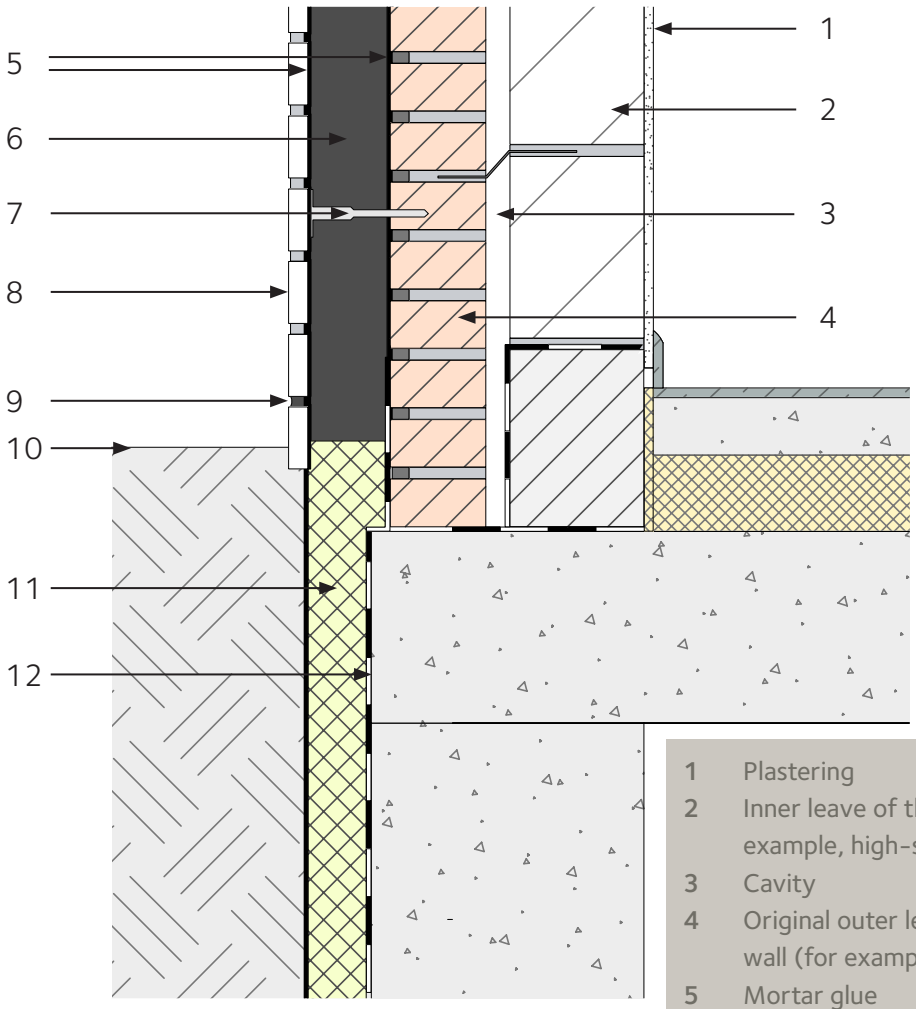


Foundation
see page 34 & 35



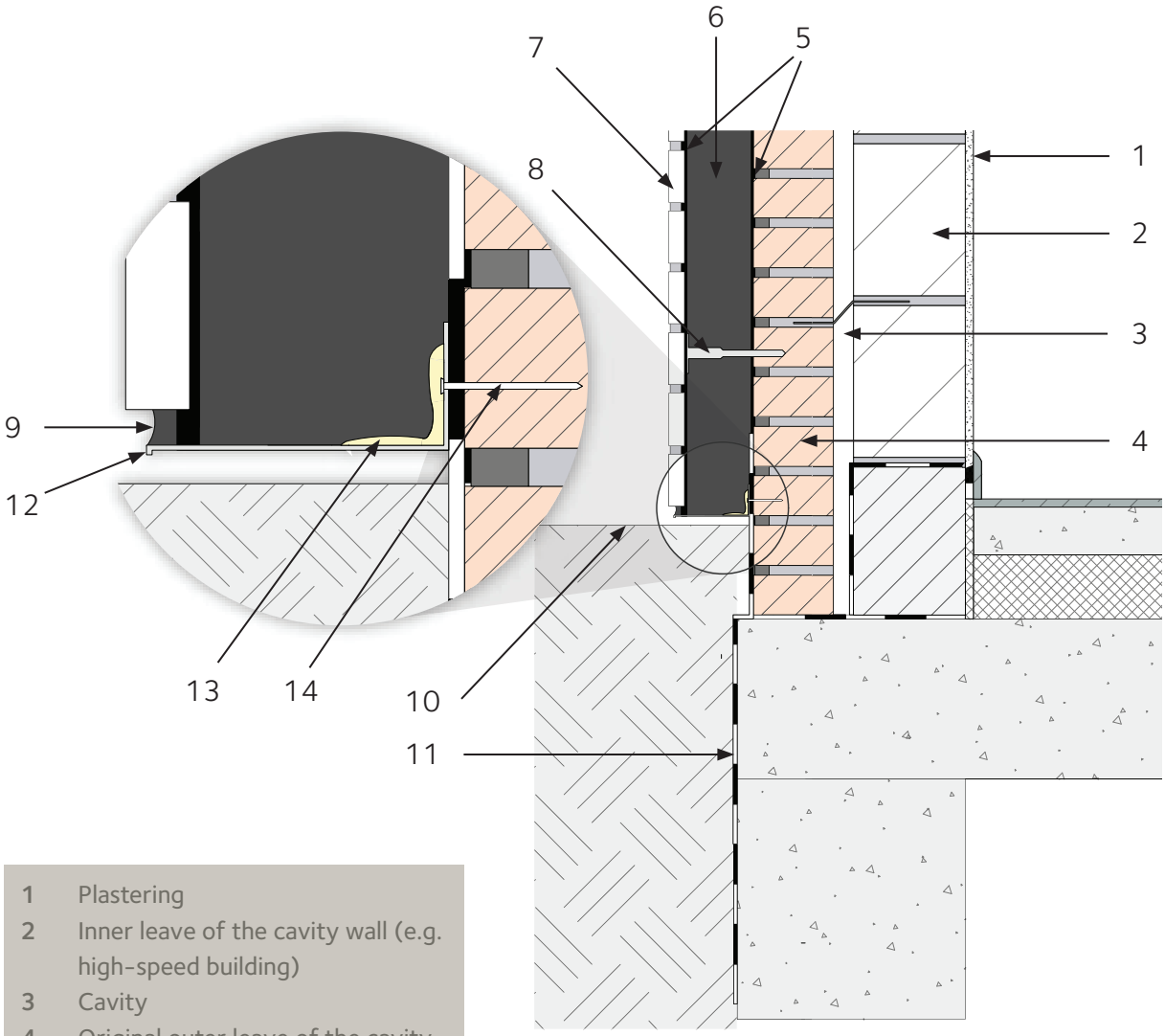
9.1. Foundation

Beginning without a guide post with insulation in the ground.



1	Plastering
2	Inner leave of the cavity wall (for example, high-speed building)
3	Cavity
4	Original outer leave of the cavity wall (for example, masonry)
5	Mortar glue
6	E-Board insulation
7	Insulation plug
8	Brick slips
9	Silicone joint
10	Surface level
11	Underground insulation
12	Moisture barrier

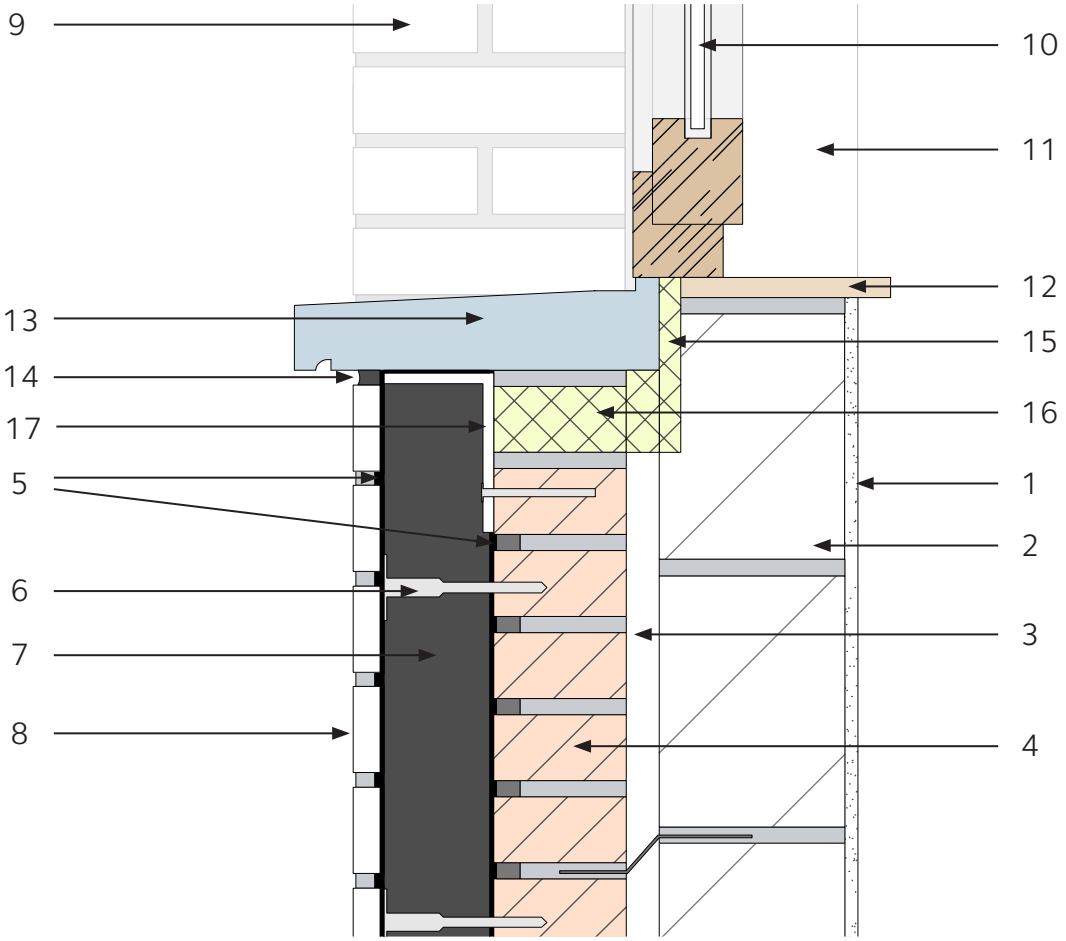
Beginning with a guide post



1	Plastering
2	Inner leave of the cavity wall (e.g. high-speed building)
3	Cavity
4	Original outer leave of the cavity wall (e.g. masonry)
5	Mortar glue
6	E-Board insulation
7	Brick slips
8	Insulation plug
9	Silicone joint
10	Surface level
11	Moisture barrier
12	Guide post
13	PUR foam or a silicone kit
14	Fastening screw of the guide post

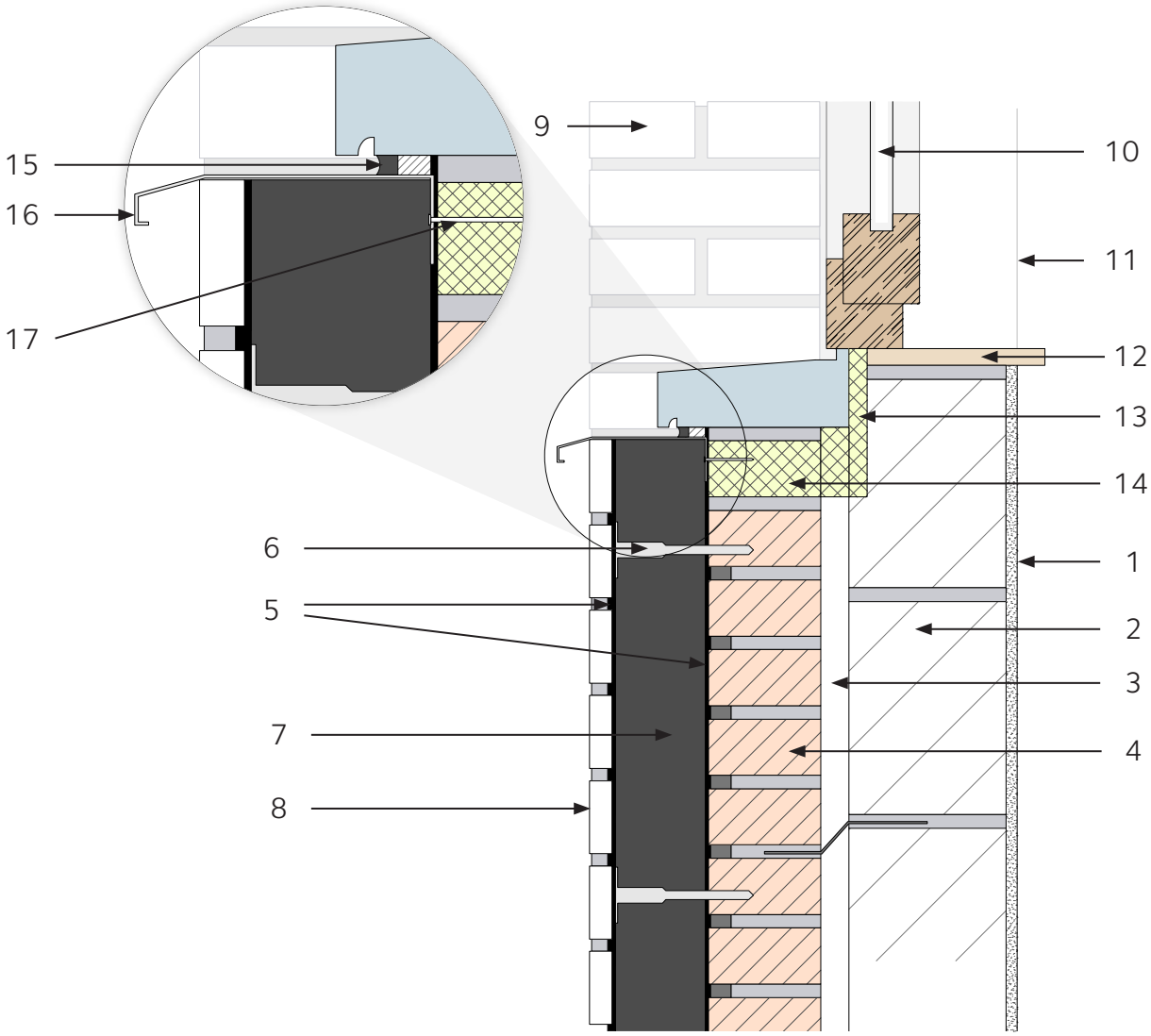
9.2. Window-sill

New extended window-sill



1	Plastering
2	Inner leave of the cavity wall (e.g. high-speed building)
3	Cavity
4	Original outer leave of the cavity wall (e.g. masonry)
5	Mortar glue
6	Insulation plug
7	E-board insulation
8	Brick slips
9	Corner slips and cut slips for the reveal
10	Window frame
11	Plastered reveal inside
12	Window ledge
13	Renewed extended window-sill
14	Expanding foam tape with elastic joint
15	Insulation
16	Compression-resistant insulation
17	Supporting guide post of window-sill in cases of larger insulation thickness

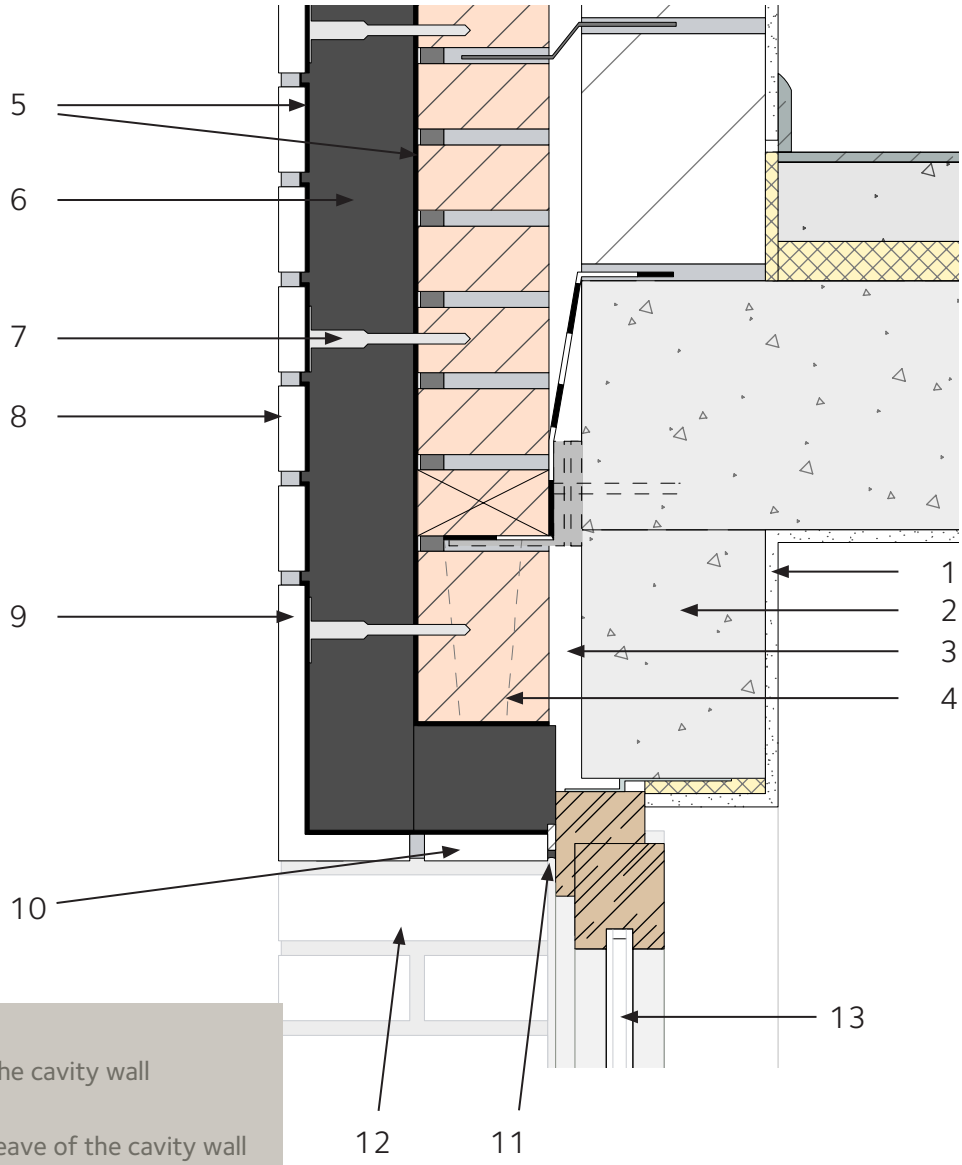
Maintaining current window-sill and extending with guide post C



1	Plastering	9	Corner slips and cut slips for the reveal
2	Inner leave of the cavity wall	10	Window frame
3	Cavity	11	Plastered reveal inside
4	Original outer leave of the cavity wall (e.g. masonry)	12	Window ledge
		13	Insulation
5	Mortar glue	14	Compression-resistant insulation
6	Insulation plug	15	Expanding foam tape with elastic joint
7	E-board insulation	16	Extending the original window-sill with guide post C
8	Brick slips	17	Fastening screw of the guide post

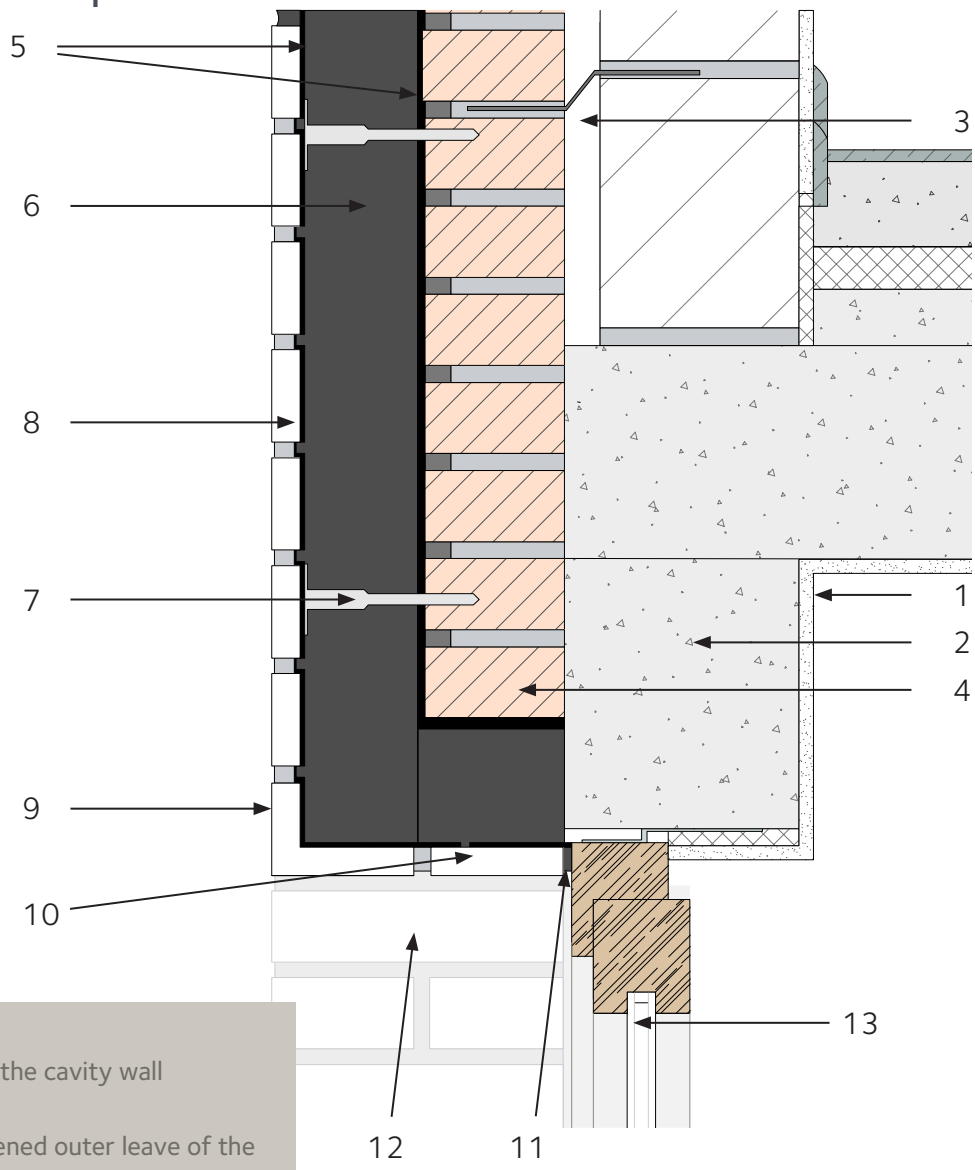
9.3. Finishing top of the window

vertical soldier course



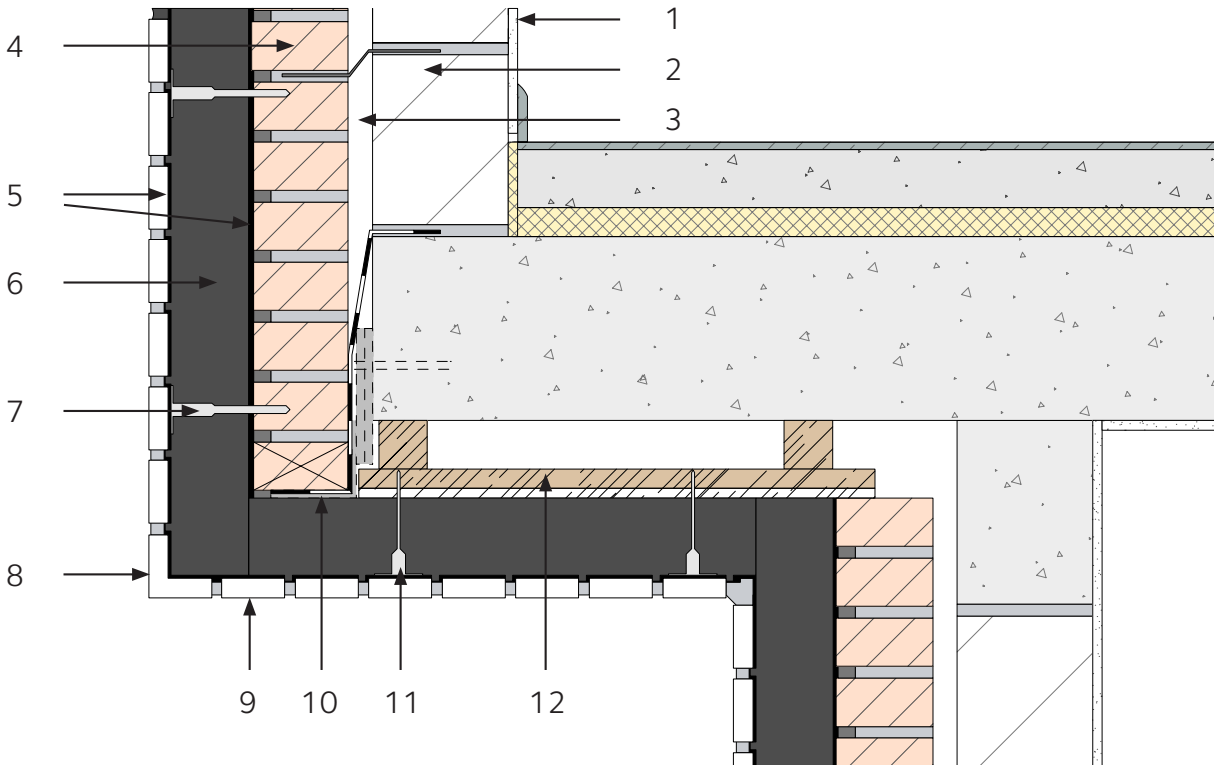
1	Plastering
2	Inner leave of the cavity wall
3	Cavity
4	Original outer leave of the cavity wall (e.g. masonry)
5	Mortar glue
6	E-Board insulation
7	Insulation plug
8	Brick slips
9	Vertical corner slip for soldier course
10	Cut corner slip or head slip
11	Expanding foam tape with elastic joint
12	Corner slips and cut slips for the reveal
13	Window frame

Horizontal corner slips



1 Plastering
2 Inner leave of the cavity wall
3 Cavity
4 Original shortened outer leave of the cavity wall (e.g. masonry)
5 Mortar glue
6 E-Board insulation
7 Insulation plug
8 Brick slips
9 Horizontal corner sole slip (front 5 cm high, bottom 10 cm wide)
10 Sole slip 10 cm wide
11 Expanding foam tape with elastic joint
12 Corner slips and cut slips for the reveal
13 Window frame

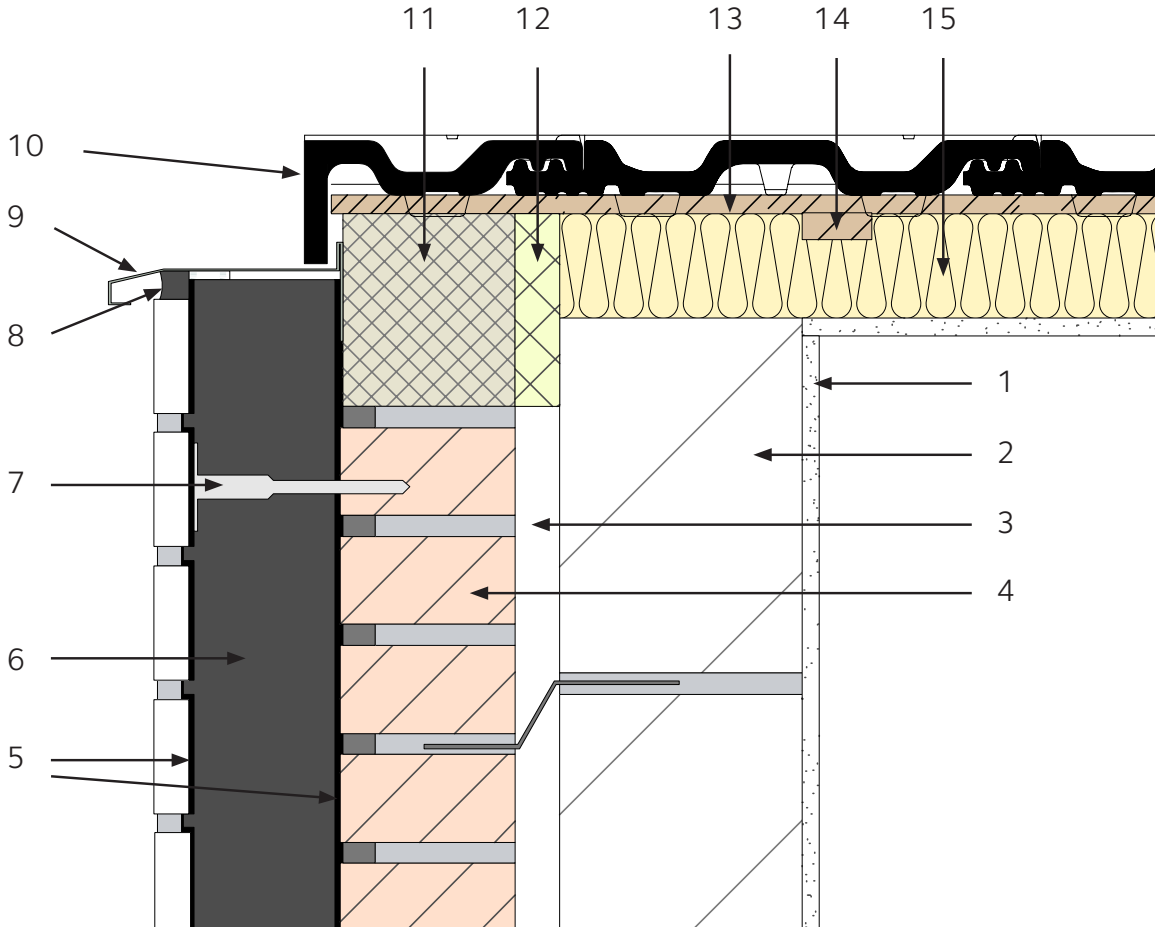
9.4. Overhang



1	Plastering
2	Inner leave of the cavity wall
3	Cavity
4	Original outer leave of the cavity wall
5	Mortar glue
6	E-Board insulation
7	Insulation plug
8	Shortened horizontal corner sole slip
9	Standard brick slip
10	Original support section
11	Dowel
12	Original wooden ceiling

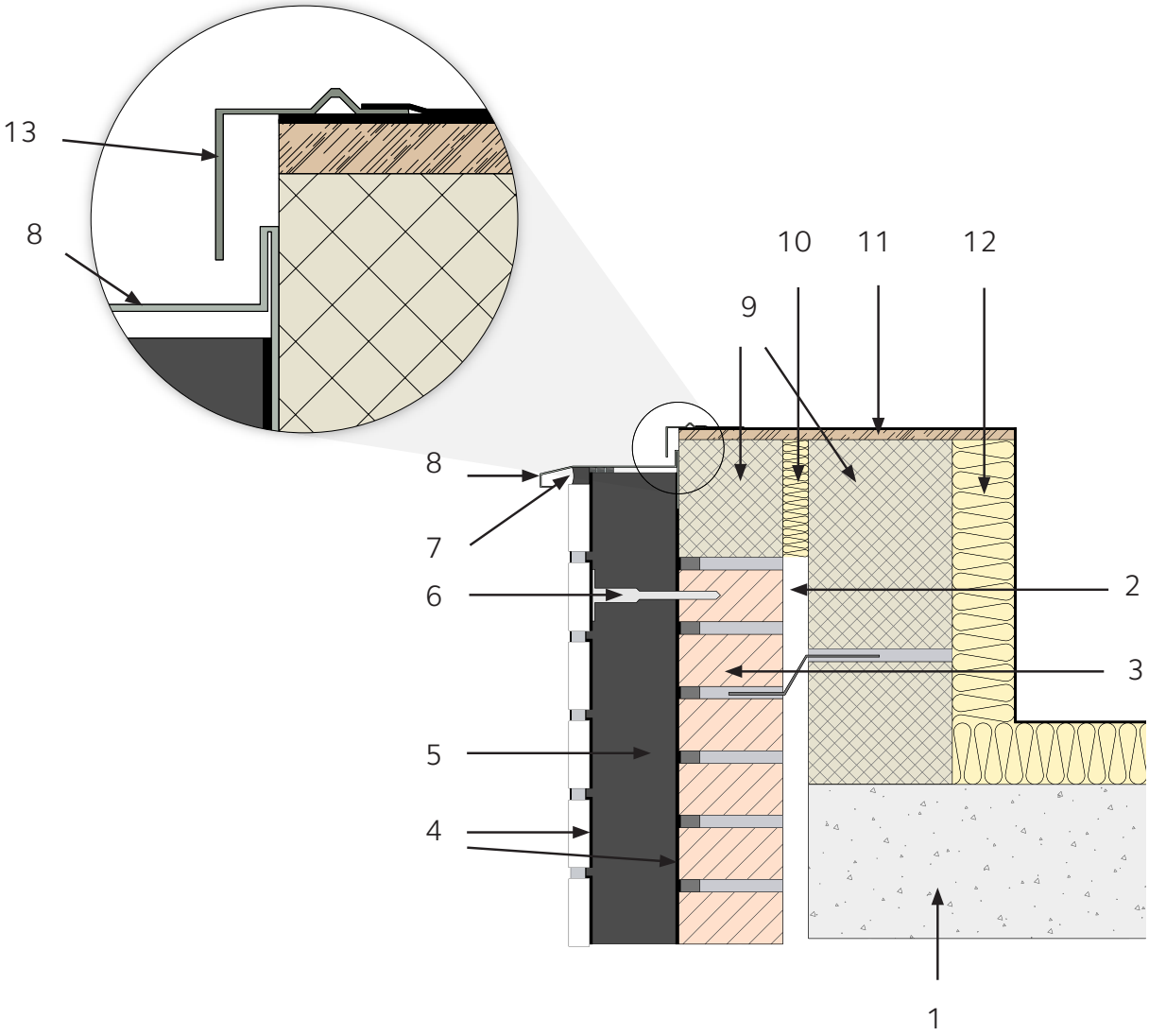
9.5. Roof connection

Edge tile point façade



1	Plastering	9	Guide post D
2	Inner leave of the cavity wall	10	Edge tile
3	Cavity	11	Compression-resistant insulation
4	Original outer leave of the cavity wall	12	Insulation cavity filling
5	Mortar glue	13	Tile lath
6	E-Board insulation	14	Batten
7	Insulation plug	15	Twill + roof insulation
8	Expanding foam tape with elastic joint		

Flat roof



1	Flat roof construction
2	Cavity
3	Original outer leave of the cavity wall
4	Mortar glue
5	E-board insulation
6	Insulation plug
7	Expanding foam tape with elastic joint
8	Guide post D
9	Compression-resistant insulation
10	Insulation cavity filling
11	Water-resistant wooden plate
12	Roof insulation
13	Original roof edge section

10. TECHNICAL SHEETS FOR MATERIALS

INSULATION PANELS

E-BOARD-EPS 200/ PS30 (SE) — **Polystyrene panel with integrated joint indication**

Product description:

E-BOARD-EPS consists of millions of grey beads, each of which constitutes a closed cell structure. Only 2 to 6% of the volume consists of polystyrene, the rest is air that is trapped in the cells. This trapped air is an excellent insulator.
E-BOARD-EPS is easy and safe to process, contains no FC´s, CFC´s or HCFC´s and is mould and moisture-insensitive. In addition, this E-BOARD-EPS is strong, form-retaining and pressure-resistant.

Application:

E-BOARD-EPS is intended as a thermal external facade insulation for new or renovated facades, to which brick slips are bonded afterwards. After installation of the E-BOARD-EPS panels these brick slips are easily glued in between the integrated joint indications on both sides. The extra added ridges between the joints significantly increase the bonding strength of the adhesive.

Product advantages:

- Through the optimised panel structure no extra reinforcement mortar or reinforcement mesh is necessary for the adhesion of the brick slips (slips made of ceramic material).
- Improved insulation value through the addition of graphite / aluminium powder / carbon. Insulates substantially better than white EPS, as a result of which the thickness can be reduced by 10 to 15% for the same thermal quality.
- Environmentally-friendly.
- During installation no sun blindness thanks to grey colour.
- Tongue and groove connection.
- EPS has the ability to breathe thanks to its vapour-permeable structure.
- EPS is non-absorbent, with vertical installation no water can penetrate into it. In combination with a full-surface glueing of the panels for the brick slips the whole is completely watertight.

General properties:

- λ_D-value: 0.032 W/mK (under EN12667)
- Fire-retardant: SE Quality
  - Euroclass E, under the new European regulation (NBN EN13501-1).
  - Belgium: class A1 under NBN S21 – 203
  - Netherlands: class II under NEN 6065
  - Germany: class B1 under DIN 4102
- Water absorption ≤ 3% (EN12087)
- Water vapour diffusion μ 40-100

Dimensions:

- Thickness from 30 mm to 300 mm
- For DF/M65: 1230 x 532 mm
  (7 brick layers, layer size 76 mm)
- For WF/M50: 1230 x 558 mm
  (9 brick layers, layer size 62 mm)

Certification:

- CE certificied
- ATG product certificate applied for

MECHANICAL FASTENING WITH INTEGRATED INSULATION WASHER

Insulation hammerset plug CN8

Hammerset plugs for standard masonry

Product description:

Thanks to their new and innovative design, these insulation hammerset plugs for use with standard substrates are ideal for a solid and fast mounting of the E-BOARD panels



Application:

Suitable for the following substrates:

- Concrete
- Solid masonry
- Perforated masonry
- Solid calcium silicate brick
- Perforated calcium silicate brick
- High-speed building

Product advantages:

- Thermally-interrupted hammerset plug with nylon impact head and electro-zinc plated pin. Thermal bridge = class 0.0005 W/K
- Pre-mounted screw saves time and work.
- Compressible zone for controlled wedging of the E-BOARD panels.

Technical data:

- Insulation washer diameter: 8 mm
- Disk diameter: 60 mm
- Packaging: per 100 pieces
- Lengths: 110 to 300 mm
- Anchoring depth: minimum 35 mm (+10 mm extra drilling depth)

Certification:

- CE certified
- ETA product certified
- DIBt product certified

Characteristic pull-out values for ETA product certification:

CN8	Concrete	solid masonry	perforated masonry	solid calcium silicate brick	perforated calcium silicate brick	high-speed building	solid lightweight concrete
(kN)	0.9	0.9	0.6	0.9	0.5	0.6	0.4

MECHANICAL FASTENING WITH INTEGRATED INSULATION WASHER

Insulation NTK-U hammer-in fixing

Hammerset plugs for insulation < 60 mm

Product description:

- Defined position of the pressure distribution plate because of the telescope effect: with the last hammer blow the pressure distribution plate uncouples and shifts over the bush to the right depth in the insulation. In so doing the spread zone of the anchor remains firmly anchored.
- Safe and problem-free mounting thanks to the built-in mounting control and the telescope effect.
- Minimal risk of breaking nails
- Approved for concrete, solid and hollow brick
- Reduced thermal bridge effect
- For fast mounting the nail is pre-mounted



Application:

Suitable for the following substrates (Class A, B, C):

- Concrete
- Solid brick
- Hollow brick
- Solid calcium silicate brick
- Perforated calcium silicate brick

Technical data:

- Diameter of the anchor 8 mm
- Diameter of the pressure distribution plate 60 mm
- Depth of the hole to be pre-drilled h1 > 50 mm
- Anchoring depth > 40 mm
- Use categories under the ETA A, B, C

Certification:

- CE certified
- ETA product certified ETA-07/0026

Characteristic pull-out values for ETA product certification:

8U	Concrete C12/15 Hollow brick	concrete C16/20 concrete C50/60	Solid calcium silicate brick DIN 106	Perforated calcium silicate brick DIN 106	Brick DIN 105
(kN)	0.6	0.9	0.9	0.9	0.9

MECHANICAL FASTENING WITH INTEGRATED INSULATION WASHER

Insulation Plug with screw 8U

Screw plugs for lightweight and cellular concrete

Product description:

This insulation plug with pre-mounted screw consists of a high-quality plastic plug with galvanised screw and is suitable for a solid and fast mounting of the E-BOARD panels against light and cellular concrete.



Application:

Suitable for the following substrates (Class A, B, C, D & E):

- Concrete
- Solid masonry
- Solid calcium silicate brick
- Perforated calcium silicate brick
- Solid building block of lightweight concrete
- Hollow building block of lightweight concrete
- Cellular concrete

Product advantages:

- Fast and secure mounting in all common substrates.
- A single anchoring depth for all substrates.
- Virtually entirely closed-off expansion zone prevents entry of bore meal.

Technical data:

- Torx30
- Bore diameter: 8 mm
- Insulation washer diameter: 60 mm
- Packaging: per 100 pieces
- Lengths: 125 to 385 mm
- Anchoring depth: minimum of 70 mm (+10 mm extra drilling depth)
- For E-BOARD thicknesses from 60 to 300 mm

Certification:

- CE certified
- ETA product certified
- DIBt product certified

Characteristic pull-out values for ETA product certification:

CN8	Concrete Solid masonry	Solid calcium silicate brick	Perforated masonry	Perforated calcium silicate brick	Solid building block of lightweight concrete	Hollow building block of lightweight concrete	Cellular concrete ≥ PB4; PP4; P4.4
(kN)	1.5	1.5	1.2	1.5	0.6	0.4	0.4

MECHANICAL FASTENING WITH INTEGRATED INSULATION WASHER

Insulation Plug with metal screw B

Screw plugs for metal substrates

Product description:

Screwable insulation fastening of plastic with self-boring Delta-seal electro-zinc plated screw and stop that interrupts the thermal bridge



Application:

Suitable for the following substrates:

- Steel sheet and, with limits, in wooden structures.

Product advantages:

- Pre-mounted screw for fast mounting.
- High corrosion-resistant Delta-seal coating of the screw ensures a long service life.
- The red stop minimises the thermal bridge.
- The screw is quickly and easily mounted with standard PH2 bits.
- Flexible insulation washer easily absorbs thermal tensions and thus prevents damage.

Technical data:

- Insulation washer diameter: 60 mm
- Packaging: per 100 pieces
- Anchor lengths: 70 to 180 mm
- Anchoring depth: minimum of 20 mm
- For E-BOARD thicknesses from 35 to 160 mm

Certification:

- CE certified
- ETA product certified
- DIBt product certified

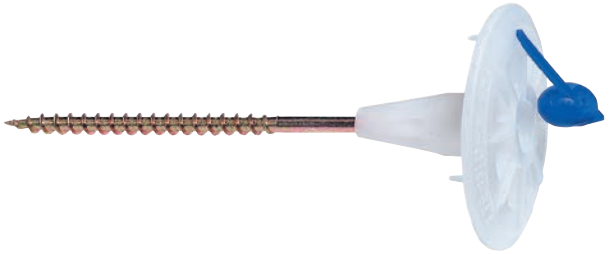
MECHANICAL FASTENING WITH INTEGRATED INSULATION WASHER

Insulation plug with wood screw 6H

Screw plugs for wood substrates

Product description:

This screwable insulation fastening is composed of a plastic disk with electro-zinc plated screw and plastic stop to prevent a thermal bridge.



Application:

Suitable for the following substrates:

- Wood

Product advantages:

- Pre-mounted highly corrosion-resistant screw for fast mounting.
- The blue stop minimises the thermal bridge.
- Slender shaft does not jam the reinforcement gauze.
- Flexible insulation washer easily absorbs thermal tensions and thus prevents damage.

Technical data:

- Torx25
- Insulation washer diameter: 60 mm
- Packaging: per 100 pieces
- Anchor lengths: 60 to 310 mm
- Anchoring depth: minimum of 25 mm
- For E-BOARD thicknesses from 35 to 285 mm

Certification:

- CE certified
- ETA product certified
- DIBt product certified

Characteristic pull-out values for ETA product certification:

6H	OSB panel		Multiplex			Chipboards		Plasterboard		Plaster fibreboards	
mm	12.5	15	12	15.5	22.5	18	26	10	12.5	12.5	15
(kN)	0.15	0.35	0.45	0.49	0.50	0.35	0.6	0.03	0.04	0.15	0.2

PUR FOAM FOR SEALING JOINTS

E-Board PUR-foam

Product description:
Profoam Gun is a ready-to-use 1-component polyurethane foam that is slightly expanding. The can is equipped with a screw thread so that it can be used on a gun. In addition, the foam is filled with propellants that are absolutely harmless for the ozone layer.

Characteristics:
- High form stability (no shrinkage or post-expansion)
- Large filling capacity, but swells up less vigorously
- Excellent adhesion to many materials (no PE, PP or PTFE)
- Good insulation value, thermal and acoustic
- Excellent mounting characteristics
- Precisely dosable
- Adheres to virtually all substrates

Applications:
- Mounting of insulation against windows and doors
- Filling of hollow spaces between insulation
- Sealing of all openings to roof and other structures

Delivery form:
Packaging: aerosol can of 750 ml (net)

Application area:
- The bonding of insulation corners and reveals
- Filling and insulation of chinks and cracks between the insulation

Shelf life:
12 months in unopened packaging in a dry, cool place. Always store upright

Preparation:
The surfaces must be clean, dust and grease-free. The substrate may be moist. At low relative humidity, the substrate is first moistened for improved adhesion.
On uncommon substrates, always do an adhesion test first.

Processing:
Shake the can vigorously for 20 seconds. Screw the can onto the gun. It is preferable to moisten the grease and dust-free substrate. For unconventional substrates it is recommended to first perform an adhesion test on the substrate. Fill the joint or cavity 65%, because the foam will continue to swell during the curing.
Shake regularly during use. If work is being done in several layers, moistening must be done between the layers. Unhardened foam can be removed with cleaner or acetone. Hardened foam can only be removed mechanically.

Safety recommendations:
Observe the normal work hygiene rules. Wear gloves and safety goggles. Remove hardened foam mechanically, never burn it away. Consult the packaging for more information.

Comments:
Using a gun makes it possible to dose foam strands very precisely. The slight moistening of the substrate in hollow spaces optimises good adhesion and yield.

Technical data: the product

Basis	Polyurethane
Consistency	Stable foam, thixotropic
Curing system	Polymerisation by moisture
Skin formation (20 °C and 60% R.H.)	8 min
Drying time (20 °C and 60% R.H.)	Dust-free after 30 min.
Curing time (20 °C and 60% R.H.)	1.5 hours for strand of 30 mm
Foam yield	1000ml produces 30-35 l of foam
Shrinkage	None
Post-expansion	None
Cell structure	Ca. 70 to 80% closed cells
Density	Ca. 25 kg/m³
Temperature resistance	-40 °C to +90 °C (cured)
Colour	Champagne
Fire class	(DIN4102 Part 1) B3
Water absorption	Ca. 2% volume
Insulation factor (DIN 52612)	34 mW/m.K
Compression strength (DIN 53421)	Ca. 3 N/cm²
Bending strength (DIN 53423)	Ca. 7 N/cm²
Shear strength (DIN 53427)	Ca. 12 N/cm²

MORTAR ADHESIVE

E-BOARD ADHESIVE

Adhesive for brick slips and E-Board panels

Product description:

Thanks to the mineral binding agents and special additives, the E-board adhesive offers good adhesion and a high diffusion capacity. On the basis of the favourable E-modulus, it offers the best possible security against cracking damage.
The E-board adhesive is used for bonding both the brick slips onto the insulation panel and the insulation panel against the bearing wall. This mortar adhesive is also suitable for smoothing out rough, load-bearing substrates, as well as for the renovation of cracked facade surfaces.

E-board adhesive is an industrial dry mineral mortar in accordance with DIN 18557, whose characteristics satisfy the requirements of mortar group P II and which is water-repellent in accordance with DIN 18550. It is composed of standardised mineral binding agents, calibrated mineral additives and special adhesion auxiliaries.
The E-board adhesive bonds to all load-bearing, dry and even substrates. Mortar residues, loose particles, dirt, old plaster residues and efflorescences must be removed from the substrate.
Irregularities larger than 1 cm are smoothed out in advance. Highly absorbent supports must be pre-treated or copiously pre-moistened with water. Protection measures of DIN 18195 concerning rising damp must be taken into account. The rules of the applicable version of DIN 18550 such as the VOB, part C must be respected.

In case of uncertainty about the support, please consult our technical departments.

Processing:

For manual processing, a sack of dry mortar is intensively prepared with 6 to 7 litres of pure water.
The processing time amounts to 1 to 3 hours, depending on the weather conditions.
The mortar adhesive is applied according to the methods described in the installation instructions.
The freshly-applied mortar is protected against driving rain and excessively fast drying. Particularly when there is direct exposure to sunshine and wind, appropriate protection measures must be taken, e.g. screening off the facade with a tarpaulin alongside the scaffold. Do not process at ambient temperatures lower than 5 °C. Also, it may not freeze in the first 3 days after installation. After use, clean tools and equipment with pure water. Carefully cover other building elements, such as windows and sills.

For the bonding of the slips: ± 3.5 kg/m².
For the bonding of the back side of the ribbed panel: ± 7.0 kg/m²

Technical characteristics:

Density of dry mortar: ± 1.3 kg/m²
Density of paste: ± 1.5 kg/m²
Compression strength: ± 7.0 N/mm²
Water absorption: ≤ 0.50 kg/(m2.h0.5)
Heat conduction λ: 0,87 w/(m.K)

Packaging

In 25 kg paper sacks, piled on Europallets.
Store the material dry. The addition of binding agents or auxiliary substances is not allowed.

11. SPECIFICATIONS DESCRIPTION / SPECIFICATIONS TEXT

Measurement

- Measuring unit: per m², all dimensions expressed in mm / cm / m. With outer cavity walls that are composed of two types of masonry of differing materials, the measurement can be divided up as necessary.
- Measurement code: to be performed net visible surface including edge, brick-on-edge coping and stretcher layers, sills, possible corner blocks, decorative layers in the brickwork, etc. All window and door openings are subtracted; however, slits for ventilation grills, letter box openings, etc. smaller than 0.2 m² are not subtracted.
- The reveals of the window openings and the bottom of the lintels are only included (net surface area) depending on the building method. The possible cavity is never included.
- Type of the agreement: Lump-sum Quantity (LQ)

External facade insulation system |LQ|m^2

Material

Brick specifications

- Type: hand form (HV) / vormbak (VB) / Waterstruck (WS)
- Format:
  - Designation: WF / DF / M50 / M65
  - Dimensions in mm (l x w x h): 210 x 20 x 50 / 210 x 20 x 65 / 190 x 20 x 50 / 190 x 20 x 65
- Bond: flemish bond / quarter-bat bond / stack bond / irregular bond / ...
- Surface texture: smooth / barked / planed / sanded / unsanded / rough / ...
- Appearance: unicoloured / multi coloured
- Category: K
- Colour shade: pink / light red / brownish red / dark red / ochre-yellow / grey / black / ... (approximate description). The colour is homogeneous in the mass.
- Frost resistance according to NBN B 27-009: highly frost-resistant (++)
- Average water absorption according to NBN B 24-203 (1973): maximum 15 / 12 / ... %

Insulation

- ECO-EPS
- Tongue and groove system insulation thickness > 40 mm, half-lapped joint insulation thickness ≤ 40 mm
- λ_D-value: 0,032 W/mK (to EN12667)
- Fire-retardant: SE Quality
  - Euroclass E, under the new European regulations (to NBN EN13501-1).
  - Belgium class A1 under NBN S21 – 203
  - Netherlands class II under NEN 6065
  - Germany class B1 under DIN 4102
- Water absorption ≤ 3% (EN12087)
- Water vapour diffusion μ 40-100
- Thickness from 40 mm to 300 mm (increasing per 20 mm)
- Dimensions:
  - for DF/M65 : 1230 x 532 mm (7 brick layers, layer size 76 mm)
  - for WF/M50: 1230 x 558 mm (9 brick layers, layer size 62 mm)

Other materials

Only materials allowed (approved) by the manufacturer for the external facade insulation system may be used.

Execution

- The materials must be stored dry and dust-free.
- The contractor must follow the manufacturer´s processing instructions.
- The substrate must be sufficiently flat, in compliance with the mounting manual of the manufacturer, so that the works can be performed impeccably and fulfil all guarantees.
- The installation may only be performed with materials that form part of the system.
- The panels are mechanically fastened with the provided plugs, and additionally bonded with the provided mortar adhesive. The fastenings are distributed uniformly over the surface of the element. The number of fastenings for standard elements depends on the height and the wind force (minimum of 9 fastenings/ m^2).
- The waterproofing between the insulation panels is assured by the tongue and groove system. At the corners the joints are injected with the provided PUR foam for bonding and waterproofing.

Execution of the jointing

- Jointing is performed in the traditional way with prefabricated or self-made joint mortar.
- The masonry mortar belongs to category M2 (cement mortar) / M3 (bastard mortar) according to NBN B 14-001 (1985), in conformity with the processing recommendations of the brick and mortar manufacturer.
- Joint shade: choice from a minimum of three samples / tone on tone factory mortar / ...
- Joint type: flush joint / keyed flush joint / hollow joint / keyed hollow joint / bevelled shade joint / ...
- Joint finishing: brushed joint / smooth finished / tapped-on joint with hard brush /...

Additional execution instructions

(delete what is not applicable)

- Dilatation joints: minimum every 30 metres / in accordance with the already-existing dilatation joints (renovation) / in accordance with the rules on dilatation joints for standard masonry / ...
- Finishing of reveals in facade openings: corner slips / finishing profile / window profiles installed flat (no lintel) / ...
- Lintel: continuous L-profile made of galvanised steel / lacquered steel / corner slips vertical / corner sole slips horizontal / window profiles installed flat (no lintel)
- Finishing profiles lacquered in RAL colours: anthracite (7016) / brown (8019) / white (9010)
- Renovation: Existing facades must be thoroughly inspected for stability. Renovation anchors are applied where necessary.

12. TERMINOLOGY LIST

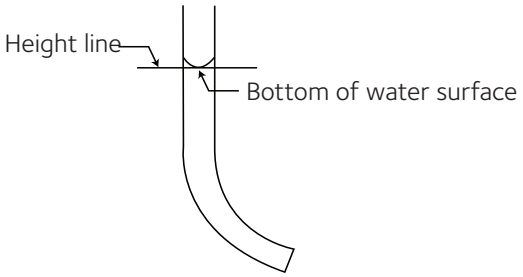
(1) Reveal: Side of a facade that runs directly up to the window or door profile. Frequently this is the header of the bricks at the window, but this can also be a full brick stretcher or more.

(2) Brick-on-edge coping: A layer of vertically-laid bricks above a window or door with their headers or stretchers oriented upwards.

(3) You define the average length, width or height of the brick slips by laying ten pieces one after the other and then dividing this total length by ten

(4) Water hose: This old but effective working method produces an exact horizontal dimensioning when used correctly. This device is available from building material suppliers and consists of a transparent narrow water hose that is 95% filled with water. You hold 1 end of the hose at the place where the height is already defined, and the other end of the hose at the place where you want to attain the same height. By placing the end of the hose at the already defined point higher or lower, you can bring the top of the water to the same height as the already-defined point. The height of the water at the other end of the hose is then exactly the same height as the defined point, so that you can indicate your new height line there.
Pay careful attention to the following:

- There can be no air bubbles in the water hose.
- If you hold the hose too high on one end, the water might run out on the other side.
- You should always take the bottom of the (concave) water surface in the hose. This is the most accurate measure.
- The hose must be protected during freezing weather so that the water in it does not freeze.
- With successive measurements you always take the same point of reference in order to mark out the height, so as to avoid carrying any mistakes on to a following measurement



(5) Stain chord: Chalk chord with which you can draw a coloured, thin and straight chalk line on your facade.

(6) Staggered: Placement of the insulation panels in such a way that the vertical joints of the panels never end up directly on top of one another between the different horizontal layers..

(7) Head joints: vertical joint between two bricks.

(8) Cement mortar: You make the cement mortar by adding water to the dry cement powder in a mortar barrel (up to 6 or 7 litres per sack of 25 kg) and mixing it with an electrical hand blender. Initially, do not add too much water. You can always add more water in the end if the mass is not sufficiently mouldable. Subsequently, you leave the mortar to stiffen a little. The mortar is stiff enough when you can press a brick slip against the insulation and the brick does not slide down.

(9) Expansion joints: A vertical continuous dilatation joint in the facade that is filled with an elastic putty and which absorbs movements within the facade.

(10) Masonry drill: A standard drill with mechanical masonry drill function for lighter jobs.

(11) Drill hammer: A drill with a powerful electropneumatic-driven striking mechanism, specially-designed to bore into heavy materials.

13. GENERAL COMMENTS

Important!

The recommendations presented here in words and images are only recommendations corresponding to our knowledge and the latest understanding. The indicated values, quantities, etc. are approximate values.

The recommendations are not a legally-binding presentation of things or properties.

Because there are so many different substrates and construction situations, we cannot be held liable for the content of the presentation of things given here.

We absolutely cannot accept any liability on the basis of this presentation; the provisions of the product liability law do not apply.

The recommendations do not release the buyer from his own duties and responsibility, above all not that of complying with other important technical directives, rules, DIN provisions and statutes.

With the appearance of a new version of this publication due to new technical developments, the older versions lose their validity.

14. QUESTIONS

For more information, you can always call the following number. We will be delighted to help you further

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E-BOARD