



PRODUCER OF **SANDWICH PANELS**



EUROPEAN **SANDWICH PANELS**

A PRACTICAL GUIDE OF PRODUCTS AND ACCESSORIES

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## ► About company:

We are a dynamic and modern company offering to our customers complete systems for wall and roof composites in a form of metal faced sandwich panels and insulation boards with all accessories.

Our product range covers sandwich panels with PU and EPS core. We have been specializing in this production for many years and our panels have been appreciated both by customers and professionals from many European countries.



ThermaBitum FR a unique composite insulation product on a European scale, was awarded the **Gold Medal** of the XXIII International Construction and Architecture Fair **BUDMA 2014** for innovative products at the construction market

In 2011 our wall and roof sandwich panels PU-cored were awarded with **Gold Medal** of XVII International Agriculture Fair **AGROTECH** in Kielce, Poland, as a best building material for agriculture buildings.

A very special wall panel system with deep profiling and PU core PolTherma DS was awarded with **Gold Medal** of XX International Construction Fair in Poznań, Poland, as the best industrial construction product.



Modern construction products of our range are intended for following use:

external and internal walls, roofs and extended ceilings. The major benefits are: fast and easy assembly (shorter installation time and lower total investment cost) and less operation costs of the building thanks to very good thermal parameters.

The brochure presents current **EuroPanels** offer of sandwich panels and accessories. It is crucial to use both: panels and accessories from manufacturer in order to keep high assembly level. To make the installation easier we gave some practical hints for workers and supervisors. They proofs that it is possible to construct an interesting building in an easy, quick, cheap and safe way.

## ► About technology:

Europanel manufactures sandwich panels according to EN 14509:2013-12 standard:

**Self-supporting double skin metal faced insulating panels - Factory made products - Specifications.**

Insulation boards are produced in accordance with EN 13165+A1:2015-03 standard:

**Thermal insulation products for buildings. Factory made rigid polyurethane foam (PUR) products. Specification.**



CE marking is a proof of European standards in production and processes but please keep in mind, that products are being controlled according to the following tolerances (example for sandwich panels):

Dimension	Tolerance (maximum permissible)
Thickness of the panel <sup>a</sup>	$D \leq 100 \text{ mm} \pm 2 \text{ mm}$
	$D > 100 \text{ mm} \pm 2 \%$
Deviation from flatness	For $L = 200 \text{ mm}$ - Deviation from flatness 0,6 mm
(according to the length of measurement L)	For $L = 400 \text{ mm}$ - Deviation from flatness 1,0 mm
	For $L > 700 \text{ mm}$ - Deviation from flatness 1,5 mm
Depth of metal profile (ribs) (mm)	$5 < h \leq 50 \text{ mm} \pm 1 \text{ mm}$
	$50 < h \leq 100 \text{ mm} \pm 2,5 \text{ mm}$
Depth of stiffeners and light profiling	$d_s \leq 1 \text{ mm} \pm 30\% \text{ of } d_s$
	$1 \text{ mm} < d_s \leq 3 \text{ mm} \pm 0,3 \text{ mm}$
	$3 \text{ mm} < d_s \leq 5 \text{ mm} \pm 10\% \text{ of } d_s$
Length of the panel	$L \leq 3 \text{ m} \pm 5 \text{ mm}$
	$L > 3 \text{ m} \pm 10 \text{ mm}$
Cover width of the panel	$w \pm 2 \text{ mm}$
Deviation from squareness	$0,006 \times w$ (nominal cover width)
Deviation from straightness (on length)	1 mm per metre, maximum 5 mm
Bowing	2 mm per metre length, maximum 20 mm
	8,5 mm per metre width for flat or lightly profiled - $h \leq 10 \text{ mm}$
	10 mm per metre width for profiles - $h > 10 \text{ mm}$
Pitch of the profile (p)	If $h \leq 50 \text{ mm}$ p: $\pm 2 \text{ mm}$
	If $h > 50 \text{ mm}$ p: $\pm 3 \text{ mm}$
Width of the ribs ( $b_1$ ) and width of the valleys ( $b_2$ )	For $b_1 \pm 1 \text{ mm}$
	For $b_2 \pm 2 \text{ mm}$

## ► General recommendations

Metal faced sandwich panels are durable products however it is possible to damage them because of improper behavior. During unloading and installation sandwich panels could be broken or scratched. The best and safest way is to use professionals tools for handling.

Panels' cutting should be done only by circular saw and not by the disk sander. The sparks should not reach panels and accessories. Thanks to it there will be no corrosion on panels facings, flashings etc. Panel storage should be done on a stable and flat base, with no moisture. Panels' packs should be separated by EPS spacers. If they will be storing for a long time or during summer days, bundles should be covered by canvas which will protect facings from high temperature and UV radiation.

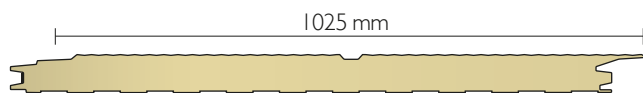
Because of the temperature loads it is recommended to design, order and install panels with very light facings colours (so called 1st colour group) and reduce panel length to 7,0 m (for EPS panels). For wall panels we recommend one span, horizontal layout (e.g. 6,0 m).

Panels and accessories should be ordered according to building design and product parameters. The decisions on panels layout and span, support structures, loads, type and number of fasteners shall be done by qualified building designer.

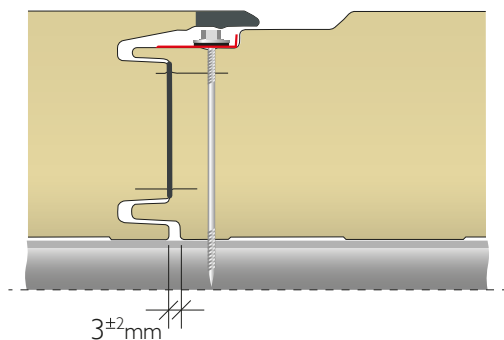
European Sandwich are available for everyone. You are invited for cooperation. EuroPanels Sp. z o.o. team.



► Panel cross section



► Panel joint cross section



► Exemplary realizations



PU WALL PANEL

**PolTherma DS** is an original Design Series wall sandwich panel with PU core and metal facings with invisible joint. To install it in a proper way a load distributor and 2 fasteners for each fastening point should be used. These are finally covered by the adjacent panel. Thanks to panels' features, ready facade is free from visible fasteners and looks superb as an one envelope.

In 2011 PolTherma DS panels were awarded with two Gold Medals:

- XX International Construction Fair BUDMA, Poznań, Poland (for best industrial construction product),
- XVII International Agriculture Fair AGROTECH Kielce, Poland (for best agriculture product).

► Profilings:

- Slanting – S
- MicroCoffer – MK500

► Options:

- **FLEXI** - a panel with internal galvanized metal sheet cladding
- **LAMINAT** - a panel with internal laminate cladding  
n.a. 50 and 160 thickness

► Details:

Available panel thickness [ mm ]	Weight [ kg / m <sup>2</sup> ]	Number of panels in a bundle [ pcs. ]
50	11,1	22
60	11,5	18
80	12,3	14
100	13,0	11
120	13,8	9
160	15,3	7



**PolTherma DS S**  
Slanting



**PolTherma DS MK500**  
MicroCoffer MK 500

**LAMINAT**

Resistant to chemicals  
and biological agents



**PolTherma DS LAMINAT**

Sandwich panel with the inner facing of laminate,

**FLEXI**

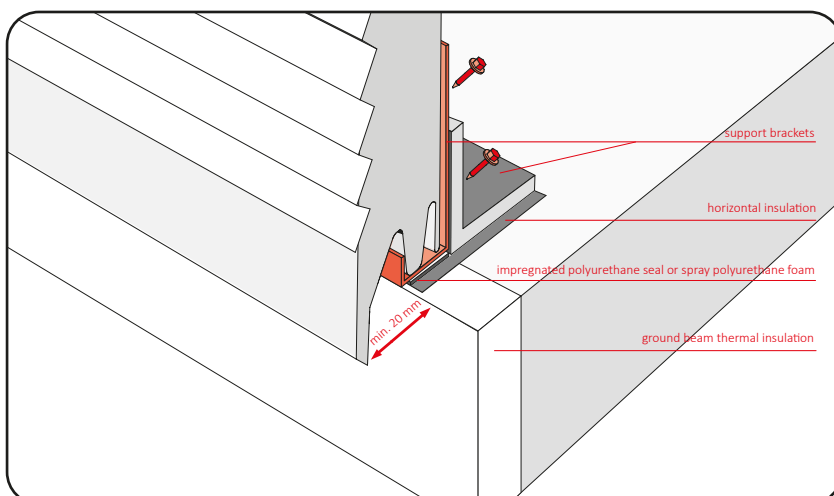
Excellent for  
renovation works



**PolTherma DS FLEXI**

Sandwich panel with inner facing of 0.2 mm  
galvanized steel sheet, for thermal wall insulation

► **Mountage proposal of wall panel PolTherma DS on a ground beam**

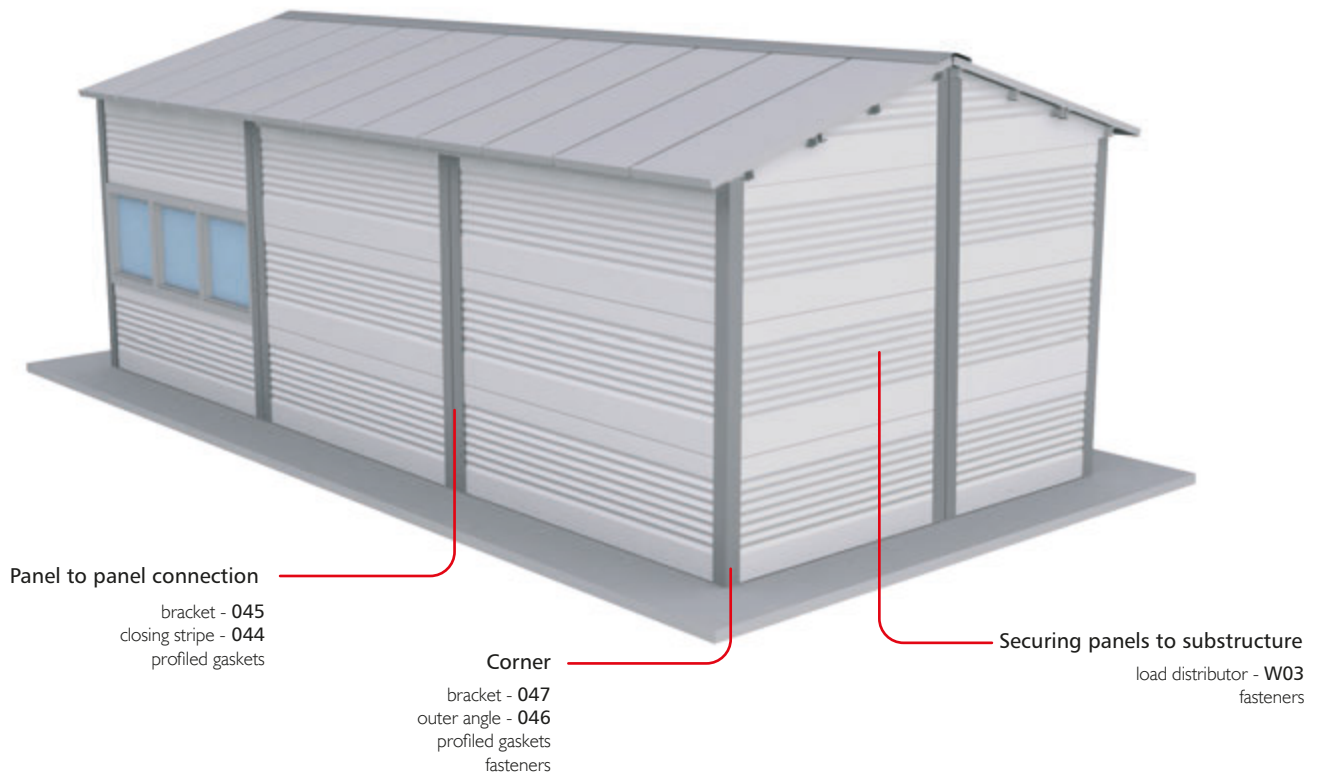


A traditional way of PolTherma DS wall panel mounting described on the next page, provides for the use of zets mounted on the columns, serving as the panel supporting elements.

As an alternative way of mounting, we suggest panel fitting directly on a ground beam, using L-support brackets mounted to the beam, used as support construction for the panels.

A crucial element of panel mounting is making sure that a ground beam is level on all the mounting surface. Remember to use horizontal insulation and an impregnated polyurethane seal or spray polyurethane foam while mounting, which will fill the gap between the ground beam thermal insulation and the beam itself, and a panel lock and support frame contact area.

It is important to keep a 20 mm distance between the panel lock nose and the ground beam thermal insulation.



## ► Before you place an order:

Wall sandwich panels by EuroPanels are perfect construction products which are intended for a quick, cheap and easy installation. Thanks to their features your facade and the entire building will look very interesting and unique. To make the best choice, before you place a final order for your panels please take into account following areas:

- thermal requirements for the building (thermal transmittance, U)
- panels orientation (horizontal or vertical), fastening method and max span
- panels installation (on your own or by a specialised assembling company)
- esthetical / architectural issues (decision on profiling, color and accessories)

Because of the panels structure and different conditions it is recommended to apply shortest single panels (up to 7,0 m for EPS-cored) and one span horizontal layout. PU-cored panels can be longer, but one of the most important limitation here is logistics.

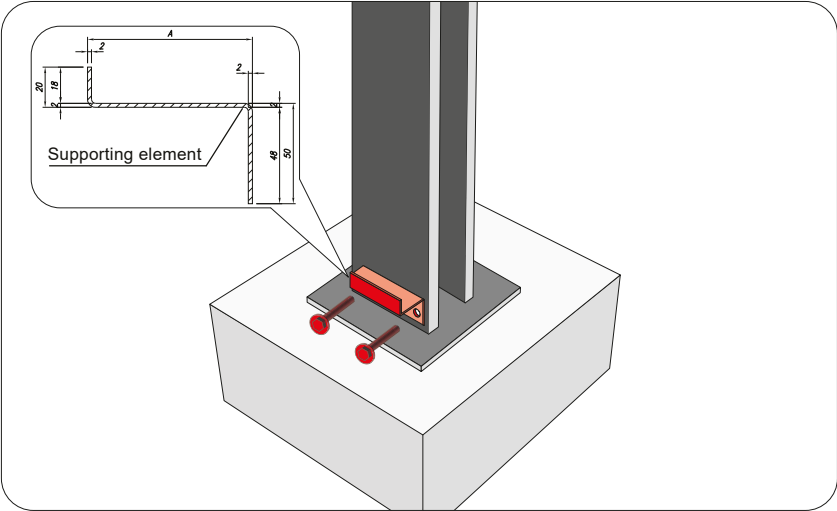
## ► Advantages of one span horizontal layout:

- optimization of technical parameters - best mechanical / load conditions
- cheaper structure - columns made steel, wood or reinforced concrete
- lighter construction - columns in base foundations
- no additional costs - no intermediate beams
- easier installation - panels securing only to main columns
- easier transportation and handling due to shorter panels length
- better product utilization - possibility to have windows lines instead panels (no cut-offs)



1.0 - PREPARATION FOR PANELS ASSEMBLING

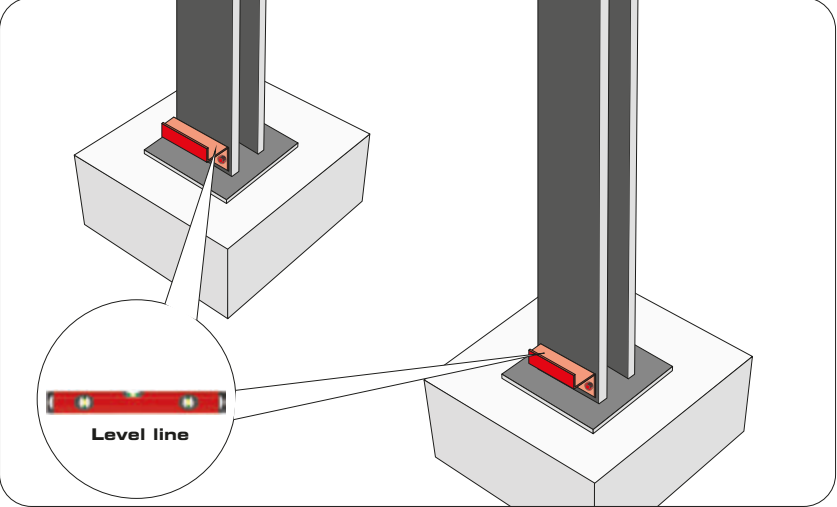
1.1 - Preparation of assembling materials



In some cases there is a possibility to install panels in a horizontal, one span layout. It enables to secure PolTherma DS panels only to columns which are in base foundation. It is a great solution for buildings which do not require continuous footing and thus you can reduce costs of materials and labor at the installation stage.

Zet profiles are necessary for startup, securing first panels on a bottom side, enabling fastening them into columns at the upper side. The shape and dimensions of **Zet profiles** are shown on 1.1 drawing. Zet profiles should be mentioned (included) by a design plan and could be made either on construction site or delivered by EuroPanels.

1.2 - Securing Zet profiles to columns



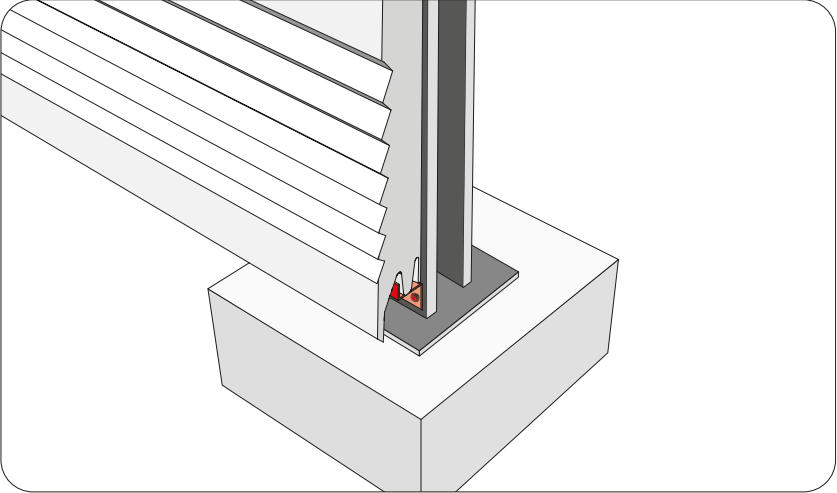
Start-up strip for DS panels

Panel thickness D [ mm ]	A [ mm ]	Sheet thickness [ mm ]	Expansion [ mm ]	Lengths [ mm ]	Flashing weight [ kg ]
50	32	2.0	102	300	0.48
60	42	2.0	112	300	0.53
80	62	2.0	132	300	0.62
100	82	2.0	152	300	0.72
120	102	2.0	172	300	0.81
160	142	2.0	212	300	1.00

Supporting zet profiles are always made of a flat bar with a thickness of 2 mm. They are secured to columns and create a basic bottom line for panels. Therefore it is crucial to install them in a **proper and precise way** (levelling).

Zet profiles are secure either by fasteners or by welding.

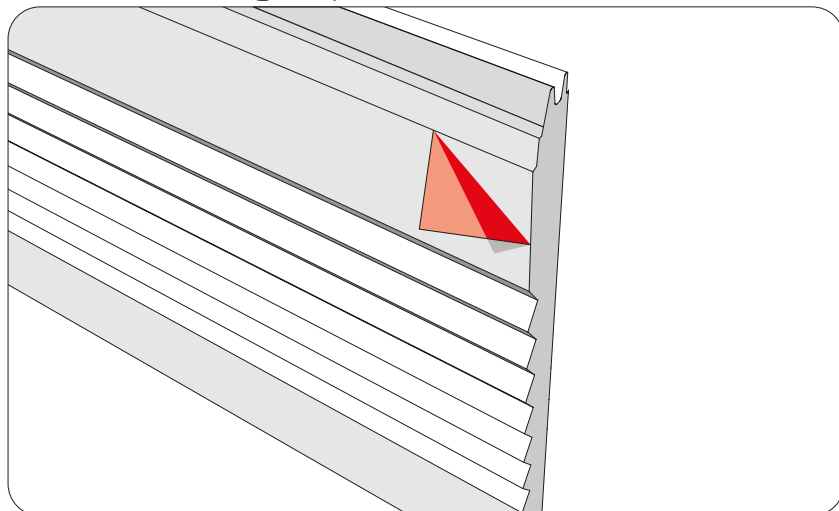
1.3 - Securing panels to columns



When Zet profiles are installed you can start securing panels. Outer tongue of Zet profile should be located into outer groove of the panel. When panel stops because of tongue-groove joint it can be secured at the top part to the column with load distributor and two fasteners (one set for one securing location)

## 2.0 - ASSEMBLING PANELS TO STEEL STRUCTURE

### 2.1 - Removing of protection foil



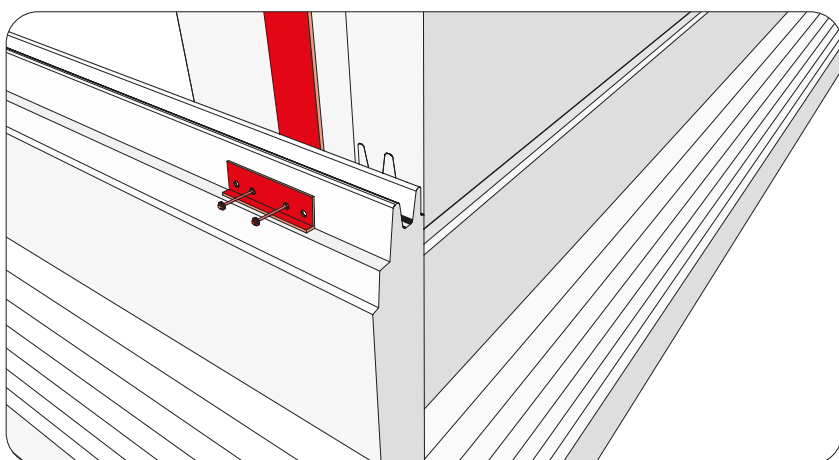
Protection foil should be removed not later than one month after production, however when the temperature at the construction site is high (e.g. in summer time, outdoor storage) it should be removed immediately after delivery (before assembling). Protection foil is necessary only during transportation of panels. In order to eliminate negative consequences of high temperature, bundle of panels should be covered by white canvas.

If protection foil is not removed, sun rays (UV) could finally vulcanize it and make the facing unsightly. If this happens, it could be extremely difficult to remove the remainders. Panel producer is not responsible for removing the protection foil and the consequences of the failure are not covered by a guarantee.



**TIP:** Protection foil covers the total area of the facing (also under fastening points). In some case it is applied also on the inner facing.

### 2.2 - Securing of panels – load distributor

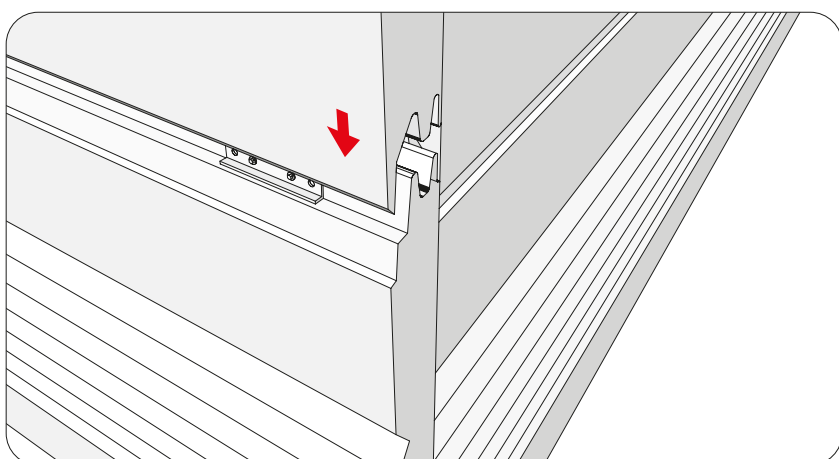


To secure PolTherma DS panels it is necessary to use load distributor. It is required for all DS panel types (outer facing profiling) and thicknesses. The load distributor is an angle bar with some holes. The distance between the holes lets to secure the panel to different types of sections. Each distributor should be secured with two fasteners.

Distributor together with the fasteners should be placed in outer groove of the panel. Thanks to shape of nose of the adjacent panel, heads of the fasteners are not visible on a facade.

Before securing panel be sure that EuroPanels' acoustic tape was applied on the structure.

### 2.3 - Securing the next panel



It is important to secure the first panel in a proper and accurate way because it makes the basic line for the next panels.

When the first panel is secured to the column the next one could be installed (tongue-groove connection).

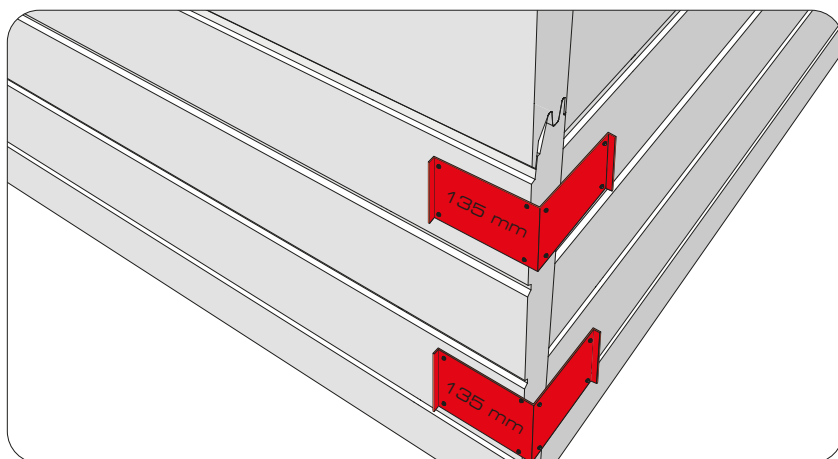
Be sure that the next panel is secured in a correct way and its load is taken completely by the former one. If so, you can secure the next panel.

**It is really easy to assembly sandwich panels by EuroPanels.**

### 3.0 - NEW GENERATION CORNER FLASHING 046

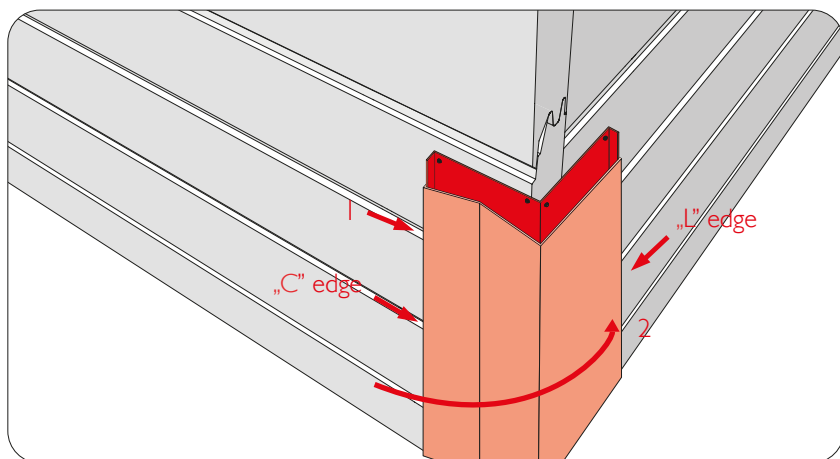
The new generation corner Europanel flashing with concealed fixings have been developed primarily for aesthetic finishing corners of buildings made of sandwich panels mounted horizontally.

#### 3.1 - Auxiliary brackets (base) 047



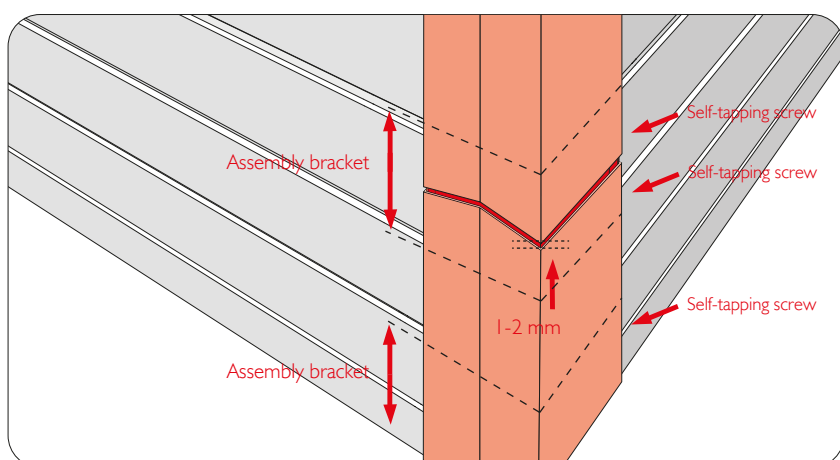
After attaching sandwich panels to the structure, corner flashing installation starts from arrangement, leveling and screwing auxiliary brackets 047 to the panel cladding. They have one fixed dimension (135mm) and the second is variable, depending on the thickness of the wall panels used at the facility. If the panels come to the front in the corner (are not cut at an angle of 45), the fixed-dimension side should be at the panel without the joint, and the second (variable) should go beyond the panels' joint. Per 1 piece of outer finishing 046 with the length of 2.5 m, 4 pieces of brackets 047 should be used. Distance between the brackets: one on each end of the finishing, and the other two at a distance of 1 m from each other. In the case of end brackets, they are to be visible after embedding flashings. Only the starting flashing should face the bracket at the bottom (as the end on from the top). Auxiliary brackets are mounted to the cladding with self-tapping screws or farmers. Per one bracket, four jigs placed in the corners are used, at a distance of about 25mm from the edge of the bracket.

#### 3.2 - Corner angle assembly 046



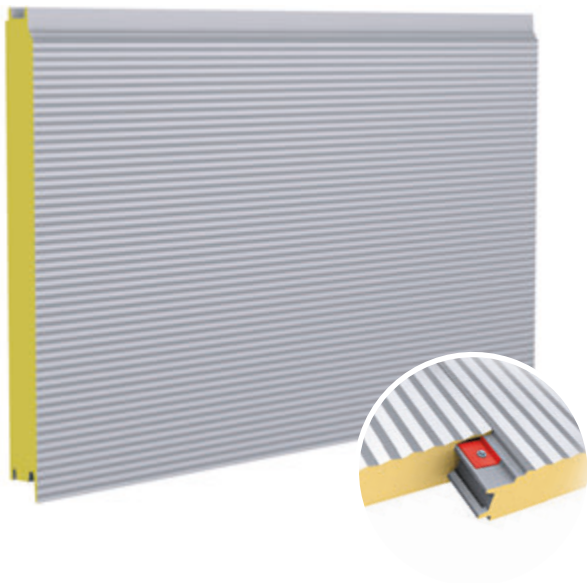
After such preparation of mounting brackets, you can install the outer angle 046. One flashing edge (profiled) is bent into the shape of the letter "C", the second (variable, non-profiled) in the shape of the letter "L". First, place the "C" edge into the gap between the cladding and the sandwich panel auxiliary bracket (step 1), then adjust the flashing in such a way as to keep 1mm space between the edge of the flashing and the panel flashings at the other side (step 2). During flashing assembly, pay attention to the sharp "L" edge. Be careful to avoid any body cuts and scratches on the sandwich panel cladding.

#### 3.3 - Final assembly

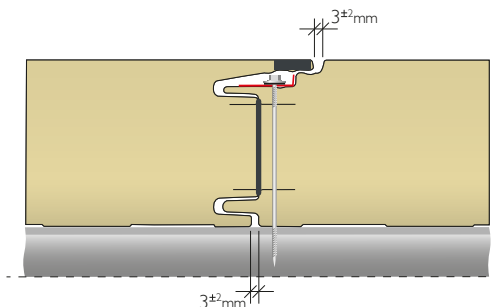


Flashings of this type are not intended for overlapping connection alongside the panel. For this reason, they are symmetric, and at the place of the connection, a gap with the width of about 2mm must be maintained. Flashing 046 is mounted on the "L" side with mini self-tapping screws or sealed steel rivets to the profiled element of bracket 047 at four locations, i.e. one self-tapping screw on each auxiliary bracket of the given flashing. During installation, pay attention not to scratch the cladding of the sandwich panel during drilling / screwing.

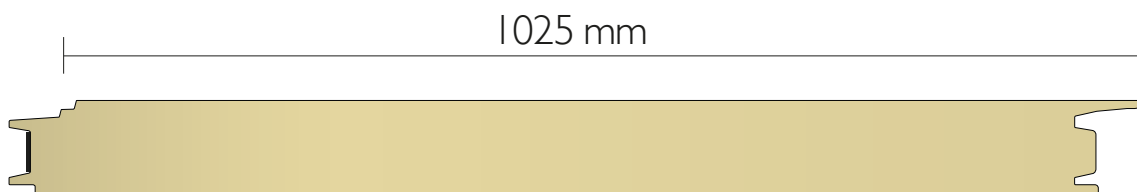
# PolTherma PS



## Panel joint cross section



## Panel cross section



## Exemplary realizations



## PU WALL PANEL

**PolTherma PS** is a wall sandwich panel with polyurethane foam core. It is popular due to standardized profiling (micro and linear) and hidden fixing (invisible joint).

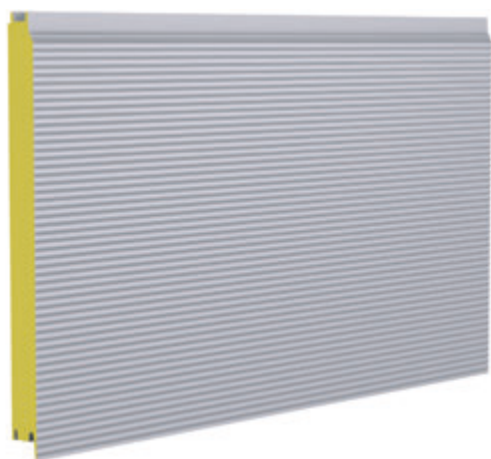
PolTherma PS series takes advantage specially for the expansions - in already existing buildings with standard profiling, new part of wall can also look similar to already existing. With smart solution of hidden joint, design of a new wall is modern and smooth. For fastening a special washer and 2 screws in one fixing point are necessary.

### Profiling:

- Microprofiled – M
- Linear – L

### Details:

Available panel thickness [ mm ]	Weight [ kg / m <sup>2</sup> ]	Number of panels in a bundle [ pcs. ]
50	11,1	22
60	11,5	18
80	12,3	14
100	13,0	11
120	13,8	9
160	15,3	7

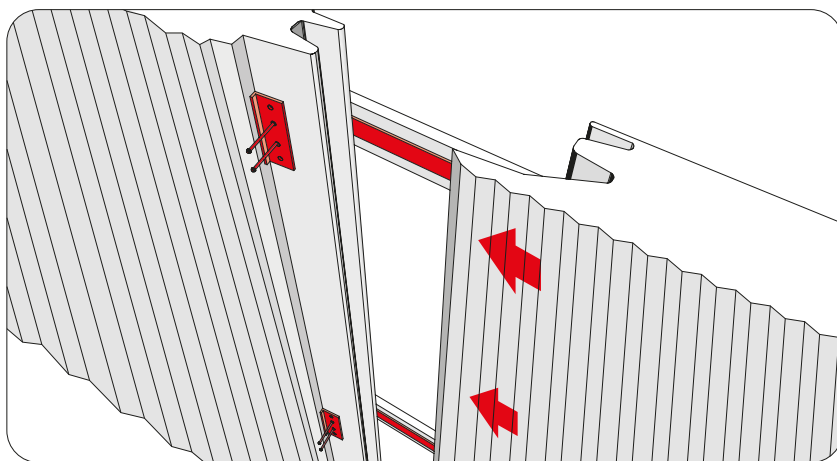


**PolTherma PS M**  
Microprofiled



**PolTherma PS L**  
Linear

### ► Vertical assembling of PS and DS Series panels with a hidden joint



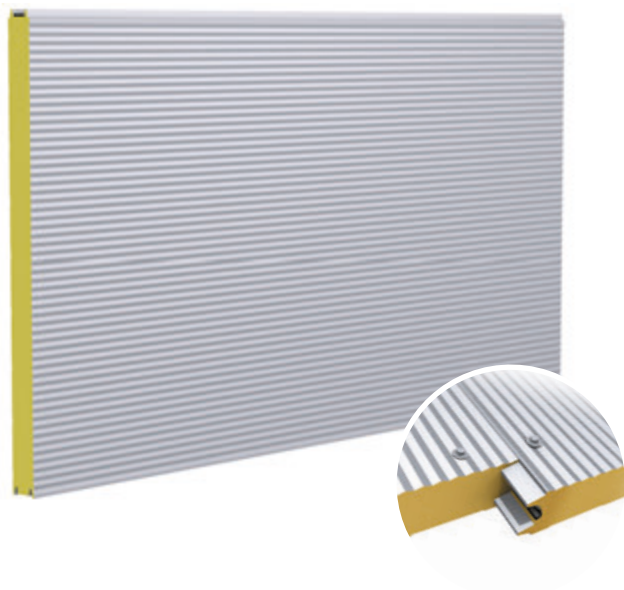
Installation of all types of hidden fixing wall panels from the EuroPanels' offer requires a special washer, so called a load distributor. In the case of a vertical, a fulcrum is a horizontal supporting beam.

First apply an acoustic tape. After the alignment of the first panel, the point of attachment for load distributor is specially profiled edge of the panel, where you need to put the load distributor. Then fasten the appropriate self-drilling screws from EuroPanels' accessories offer.

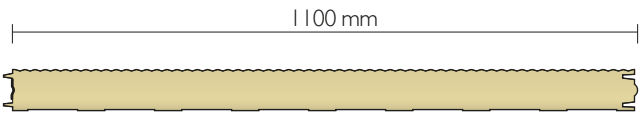
Another panel covers by its nose all the fastening point of former one, so it is necessary to press closely the panel to fully connect joint. Finally, attach the distributor on the other side of a panel and fasten as above..



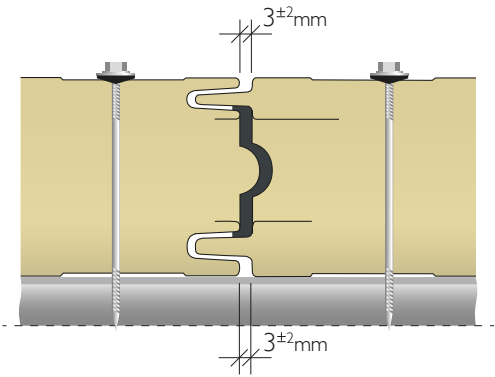
**TIP:** In spite of an intention of using these panels vertically, we also do recommend vertical lining in one small span. In such a way it is also possible to fasten the panels throughout with a screw as a standard one (like TS or CS).



► Panel cross section



► Panel joint cross section



PU WALL PANEL

**PolTherma TS** is a standard metal faced wall panel cored with rigid polyurethane foam. It is installed to the structure with through fasteners. Its main advantages are very big cover width (1100 mm) and special PU gasket which improves the tightness of the panel-to-panel joint.

Sandwich panels PolTherma TS could be installed both in horizontal and vertical way to steel, wood and reinforced concrete structures.

► Profilings:

- Slanting-Wither – SW
- MicroCoffer – MK550
- Linear – L
- Micro – M

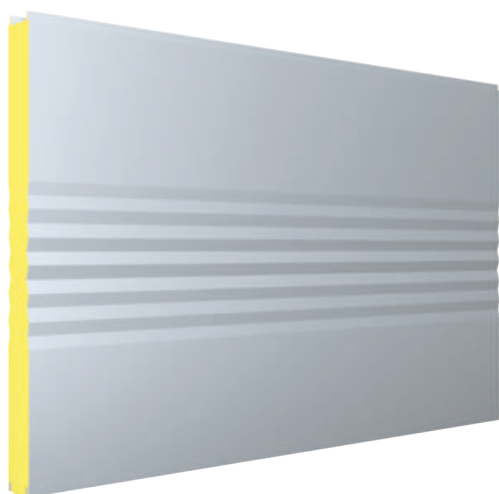
► Options:

- EI 30 – fire resistance EI 30 for thickness starting from 100 mm

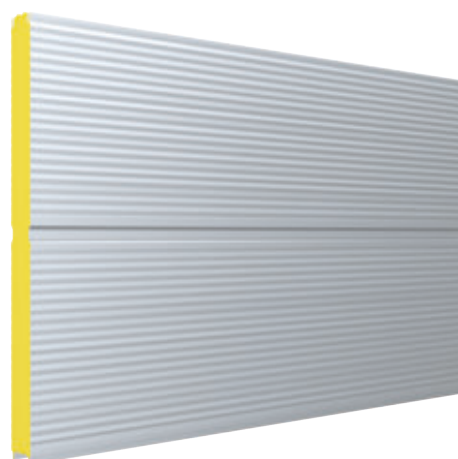
► Details:

Available panel thickness [ mm ]	Weight [ kg / m <sup>2</sup> ]	Number of panels in a bundle [ pcs. ]
40	10,4	28
60	10,8	22
80	11,2	18
100	11,9	14
120	12,7	11
160	13,5	9
200	15,1	7

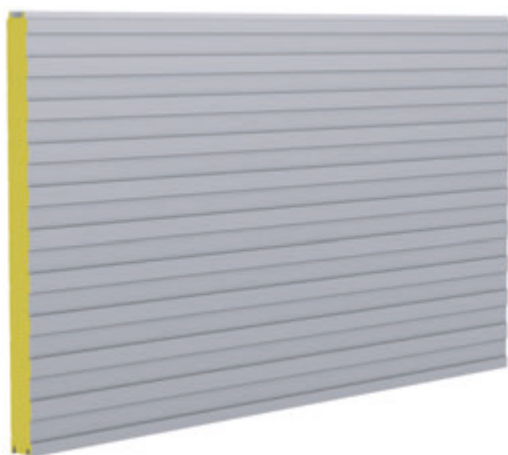




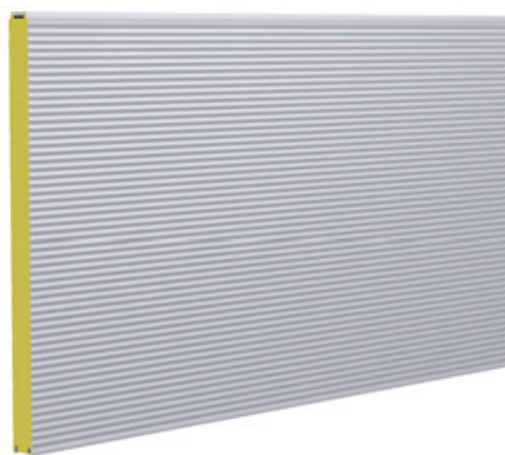
**PolTherma TS SW**  
Slanting-Wither SW



**PolTherma TS MK550**  
MicroCoffer MK 550



**PolTherma TS L**  
Linear



**PolTherma TS M**  
Micro

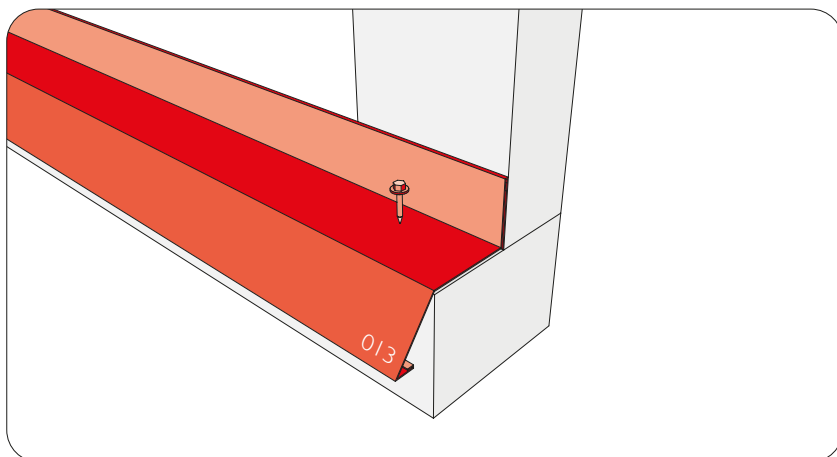
Panels assembling  
to the structure  
flat contact strip - 019  
fasteners



Connection between  
continuous foundation and panel  
strip - 013  
fasteners

## 1.0 - INSTALATION OF PANELS ON CONTINUOUS FOUNDATION

### 1.1 - Securing the starting flashing - 013

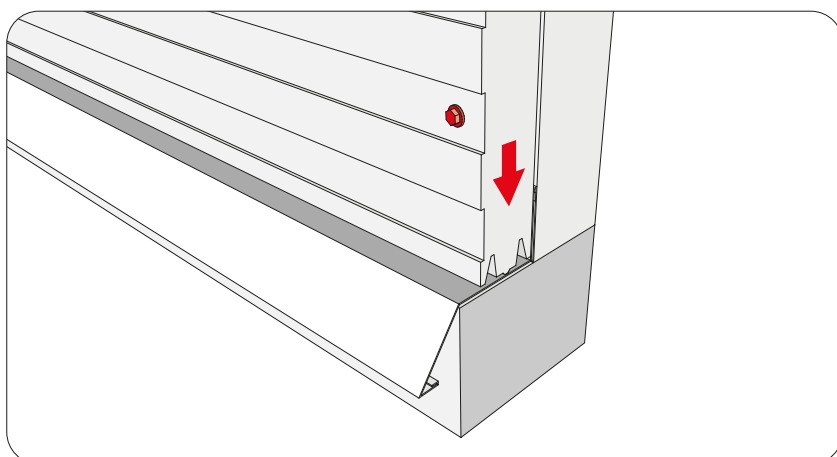


In traditional solutions there is a continuous foundation between the columns which is used as a base for panels securing both horizontally and vertically.

Check whether a continuous foundation is flat. If it is not, compensate the surface by a professional free proof mass.

If the continuous foundation surface is flat put a strip 013 and then secure it with EuroPanels fasteners.

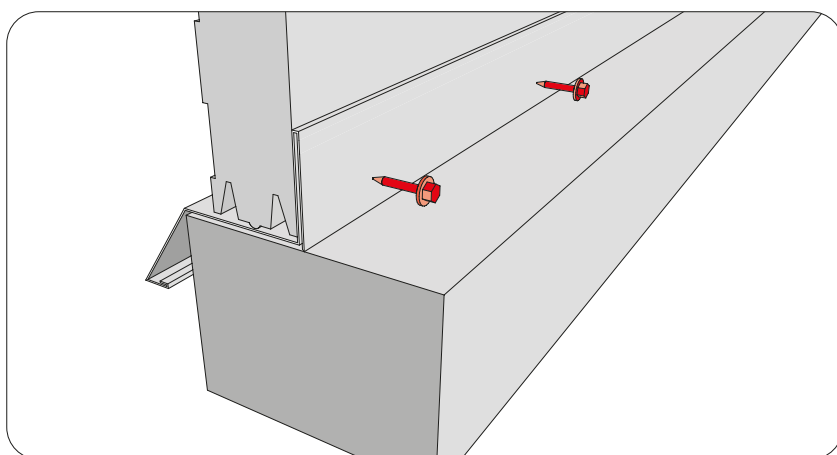
### 1.2 - Securing the first panel



If the strip 013 is properly secured to the continuous foundation the first / lowest panel could be placed on it. It is important to secure it in a proper and accurate way (leveling), because the next panels will follow the former one and the faults and inaccuracies will increase.

Panel should be secured to the structure with the fasteners according to the panel thickness and the type and thickness of the structure. They should be located about 40-50 mm from panels edge.

### 1.3 - Securing the strip 013



The inner flashing 013 should be secured with the EuroPanels fasteners. The distance between the fasteners should be about 300 mm.

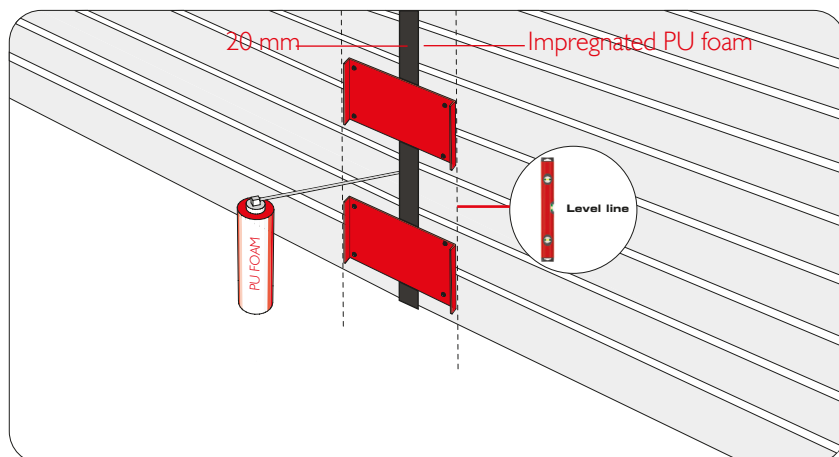


**TIP:** Use the dynamometer equipment for the best and safe securing of fasteners.

## 2.0 - NEW GENERATION MASKING FLASHING 044 ASSEMBLY

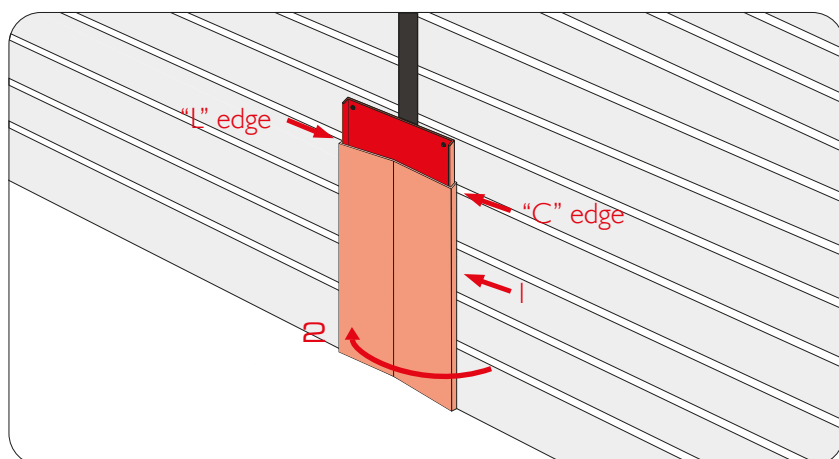
The new generation of Europanel's flashing with concealed fixing is designed for modern and aesthetic closing the wall panel joints alongside, they are mounted to the load bearing columns in horizontal single-span system. The main advantage are no visible fixing elements, which perfectly harmonizes, especially, with the PolTherma DS series of decorative wall panels.

### 2.1 - Auxiliary brackets (base) 045



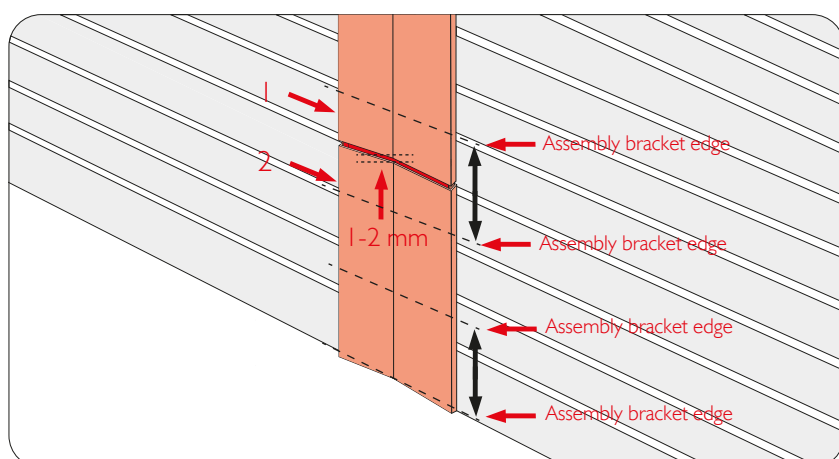
After fixing the panels to the columns (20mm expansion gap is required to be preserved and filled with low pressure assembly foam, onto which a strip of adhesive impregnated PU foam is glued), auxiliary brackets should be arranged, leveled and screwed to the panel cladding (base) 045. Per 1 piece of finishing with the length of 2.5 m, 4 pieces of brackets should be used. Distance between the brackets: one on each end of the finishing, and the others at a distance of 1 m from each other. In the case of end brackets, they are to be visible after embedding flashings. Only the starting flashing at the bottom and the end flashing at the top can cover the brackets. Auxiliary brackets are mounted to the cladding with self-tapping screws or farmers. Per one bracket, four jigs placed in the corners are used, at a distance of about 25mm from the edge of the bracket.

### 2.2 - Masking flashing (strip) installation 044



After such preparation of mounting brackets, you can install the masking strip 044. One flashing edge is bent into the shape of the letter "C", the second in the shape of the letter "L". First, place the "C" edge into the gap between the sandwich panel cladding and the auxiliary bracket (step 1), then adjust the flashing in such a way as to keep 1mm space between the edge of the flashing and the panel cladding (step 2). During flashing assembly, pay attention to the sharp "L" edge. Be careful to avoid any body cuts and scratches on the sandwich panel cladding

### 2.3 - Final assembly



Flashings of this type are not intended for overlapping connection alongside the panel. For this reason, they are symmetric, and at the place of the connection, a gap with the width of about 2mm must be maintained. Flashing 044 is mounted on the "L" side with mini self-tapping screws or sealed steel rivets to the profiled element of bracket 045 at four locations, i.e. one self-tapping screw on each auxiliary bracket. During installation, pay attention not to scratch the cladding of the sandwich panel during drilling / screwing

# ThermaStyle PRO



## EPS WALL PANEL

**ThermaStyle PRO** is a wall sandwich panel with EPS (expanded polystyrene) core. In the EuroPanels solution, there is a choice of fastening method: with invisible screw (by a special element) or throughout directly to supporting construction (visible head of a screw).

In first solution (our patent), even in the entry-level sandwich panel product it is possible to achieve a smooth design of a wall surface.

The ThermaStyle PRO panel is popular as cheap, easy and fast solution for walls including partitions in a variety of buildings.

### ▶ Profilings:

- Microprofiled – M
- Linear – L
- Grooved – T

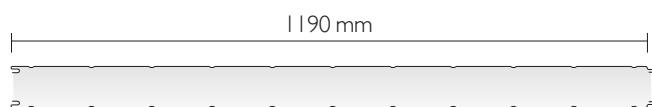
### ▶ Options:

- **FLEXI** – panel with internal flexible facing instead of metal one or without internal facing

### ▶ Details:

Available panel thickness [ mm ]	Weight [ kg / m <sup>2</sup> ]	Number of panels in a bundle [ pcs. ]
50	9,4	5-12
75	9,8	12-13
100	10,2	10
125	10,6	8
150	11,1	7-8
200	11,9	5
250	12,8	4-5
300	13,6	3

### ▶ Panel cross section



### ▶ Panel joint cross section - hidden joint

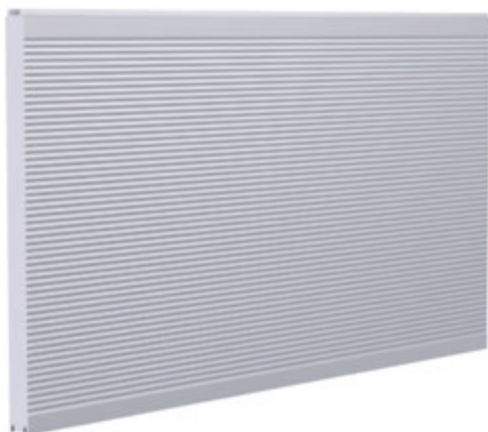


### ▶ Panel joint cross section - visible joint

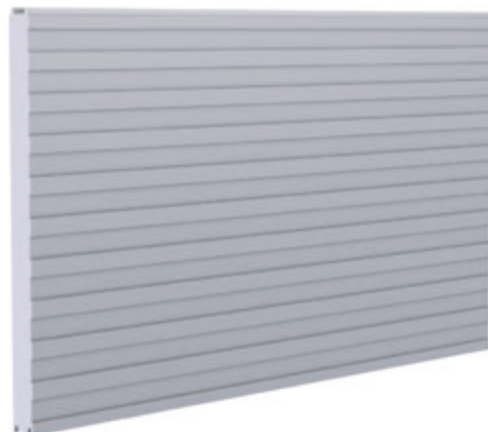


**TIP:** Combining flashings with themselves please remember that they need to overlap each other of at least 50 mm (on the length). Such a solution is necessary because prevents moisture from coming under the flashings. Remember also to take into account the amount of the overlap lengths in total flashings needed.





**ThermaStyle PRO M**  
Microprofiled



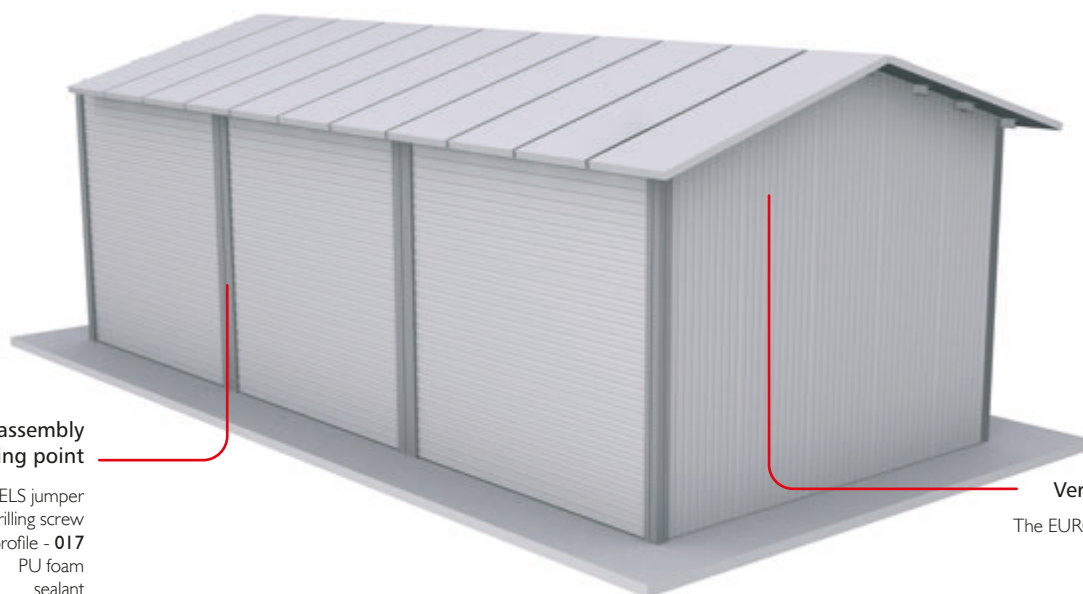
**ThermaStyle PRO L**  
Linear



**ThermaStyle PRO T**  
Grooved



**ThermaStyle PRO FLEXI**  
A panel with internal flexible  
cladding (PE) for wall insulation



Horizontal assembly  
- joining point

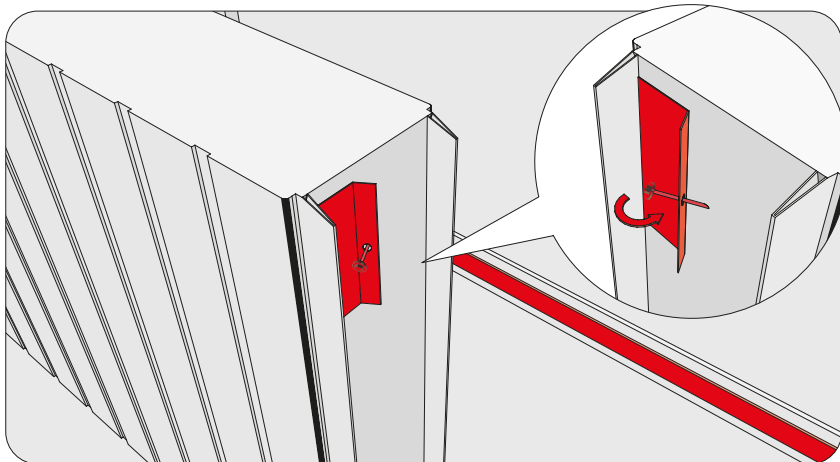
The EUROPANELS jumper  
self-drilling screw  
external profile - 017  
PU foam  
sealant

Vertical assembly

The EUROPANELS jumper  
self-drilling screw  
PU foam  
sealant

## 1.0 - VERTICAL ASSEMBLING

### 1.1 - Placing the EUROPANELS jumper



Using the EUROPANELS clamp allows to avoid any visible fastening elements on the facade of the building. The clamp is applied accordingly to supporting beams lining.

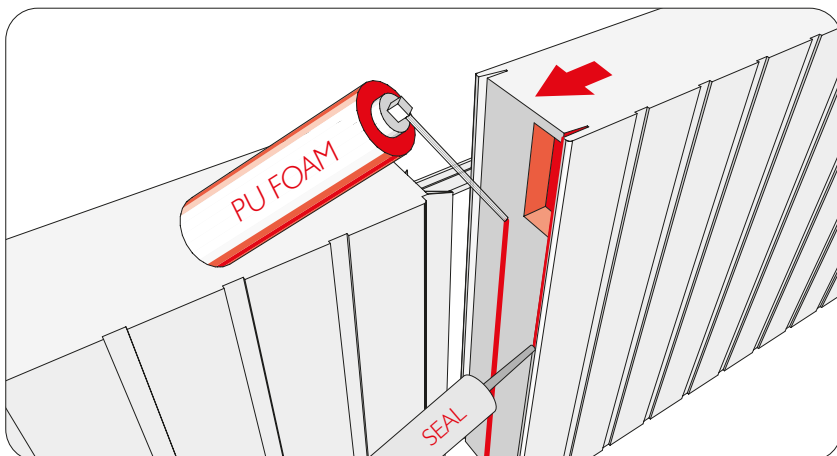
First, apply an acoustic tape onto beams' surface. Slide or fold over the EUROPANELS clamp on the male element of the joint until it reach core surface.

Now place a self-drilling screw into a hole of the clamp. Please be aware as the screw will be drilled into the beam at a certain angle (not straight-forward)

Do not use excessive force while fastening, otherwise you could break or damage panel's surface or joint.

The most important is leveling the first panel, as the next ones will follow.

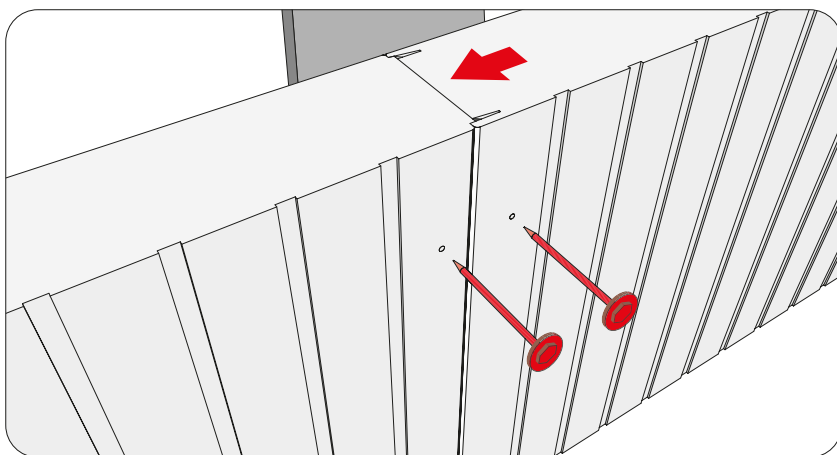
### 1.2 - Joining the panels with the EUROPANELS jumper



As the first panel is secured properly, the next one shall be pushed tightly to close the joint. But before it is necessary to remove a part of EPS core from the upcoming panel in order to make some space for jumper to hide. To do this simply remove by a knife amount of EPS adequate to size of the joint. Wisest way is to do this all together for the whole panels is to measure beams span and knowing jumper size cut panels in bundle with about 2 cm tolerance. The same method is used for our roof EPS panels ThermaDeck PRO.

Close panels pushing them together in a way that ensures full tightness of locks without irregularities. Than secure the panel on the other side as shown in Figure 1.1. To improve the tightness of the joint, on the insulation core could be spread on a thin strip of polyurethane foam. Additionally a sealant could be applied into joint edges.

### 1.3 - Other method of assembly - visible joint



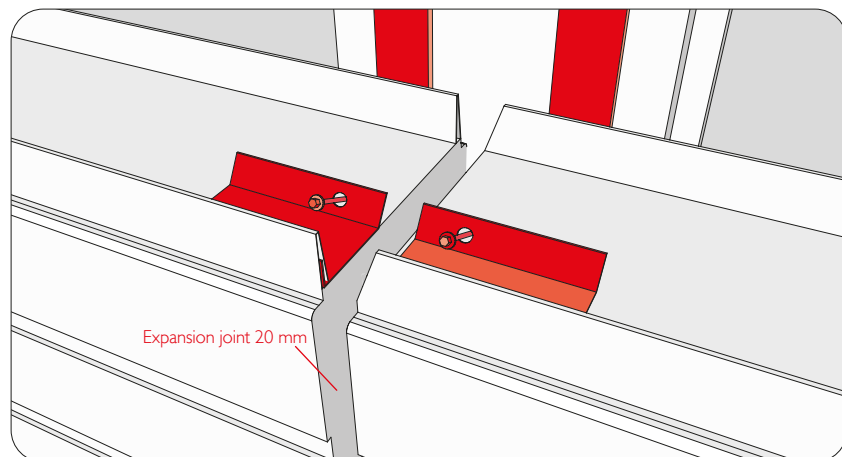
Traditional way of assembling panels is screwing them throughout to the supporting construction. In result heads of the fasteners remain visible on façade. To cover them we recommend to use a special coloured caps from our accessories range.



**Hint:** Screwing the boards try to avoid too strong tightening the screws, as this may result in visible deformation of steel skin (negative "bowl effect"). Tighten the screw until the first sign of rubber pad deflection.

## 2.0 - VERTICAL ASSEMBLY

### 2.1 - Fastening to main column

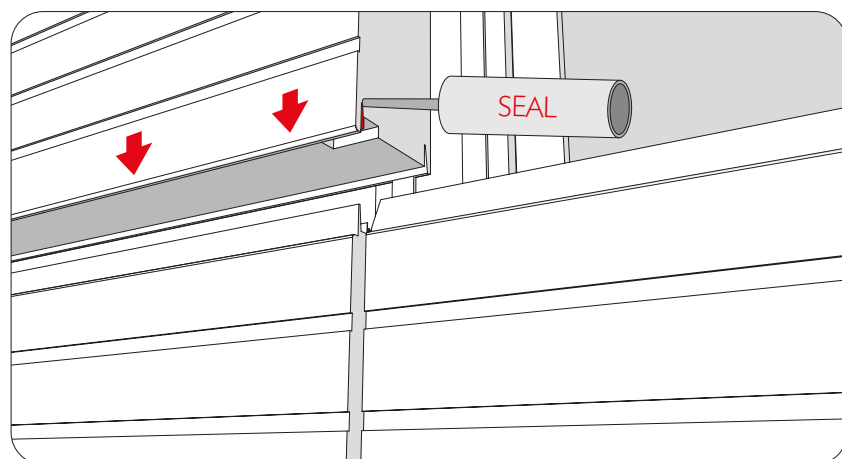


Another method of assembling the ThermaStyle PRO wall panels is horizontal position, preferably in one span layout.

Apply acoustic tape onto columns surface. Prepare panels, fasteners and the EUROPANELS jumpers. Place the first panel with male part of joint to the top. On external blade apply the EUROPANELS jumper. Sometimes it will be necessary to cut the jumper in order to fit it on place. Than fasten jumper to a column. The right distance between screw and edge of the panel is about 40-50mm.

Place the adjacent panel remembering to maintain a 20 mm distance as an expansion joint.

### 2.2 - Assembly of another row of panels

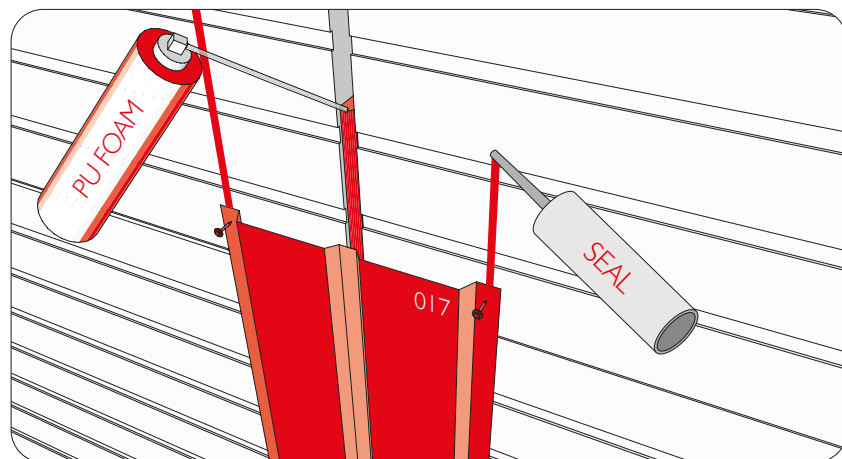


Similar to a vertical layout with the EUROPANELS jumper, (see picture. 1.2), using a knife remove a part of EPS core from the coming panel. Slide the nest panel downwards. Make sure, that incoming panel is fully lying onto the bottom one and that all joint is completely closed tightly.

Secure panel on the top repeating steps shown above.

In order to improve tightness of the joint, before panels are closed you can apply sealant into male-female joint elements.

### 2.3 - Assembly of closing strip 017



Please do remember to remove protection foil from panels surface. All expansion joints shall be filled by PU foam.

For closing of the expansion joint you can use per example stripe 017, which should be screwed to panels skin by special fastener. Edges of the flashing ought to be protected by sealant.

Alternatively, you can use an aluminium T profile for closing the expansion joint's gap.

Finally, it is also possible to assembly the horizontally laid panels straight throughout the whole panel to the column (without the EUROPANELS jumper).

# PolDeck TD



## PU ROOF PANEL

**PolDeck TD** is a Trapezoidal roof panel with polyurethane foam. Fastening method it throughout to supporting beams by a self-drilling screw.

PolDeck TD (Trapezoidal Deck) is an example of universal roof panel being a good choice for variety of buildings. Required slope is at least 4° (7%) for single panels and 6° (10%) for panels with skylights, overlapped etc.

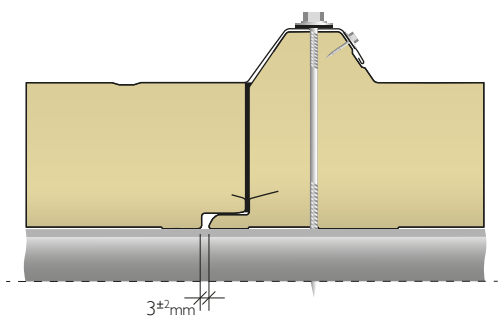
### Options:

- **AGRO** – panel with additional non-condensate layer
- **50–300 mm** – overlapping L and R for a gutter (Z) joining on length etc.

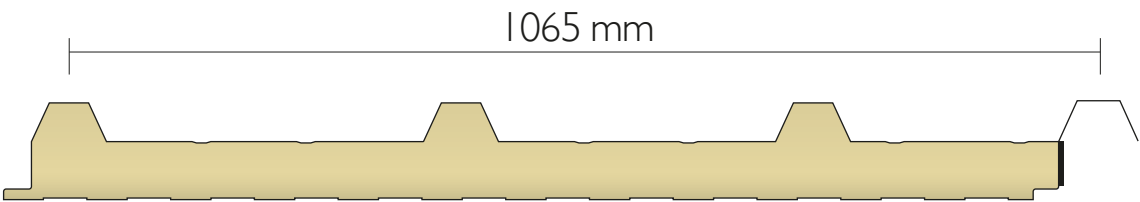
### Thickness:

Available panel thickness [ mm ]	Weight [ kg / m <sup>2</sup> ]	Number of panels in a bundle [ pcs. ]
40/75	10,7	18
60/95	11,5	14
80/115	12,3	10
100/135	13,0	8
120/155	13,8	8
145/180	14,8	6
165/200	15,6	6

### Panel joint cross section

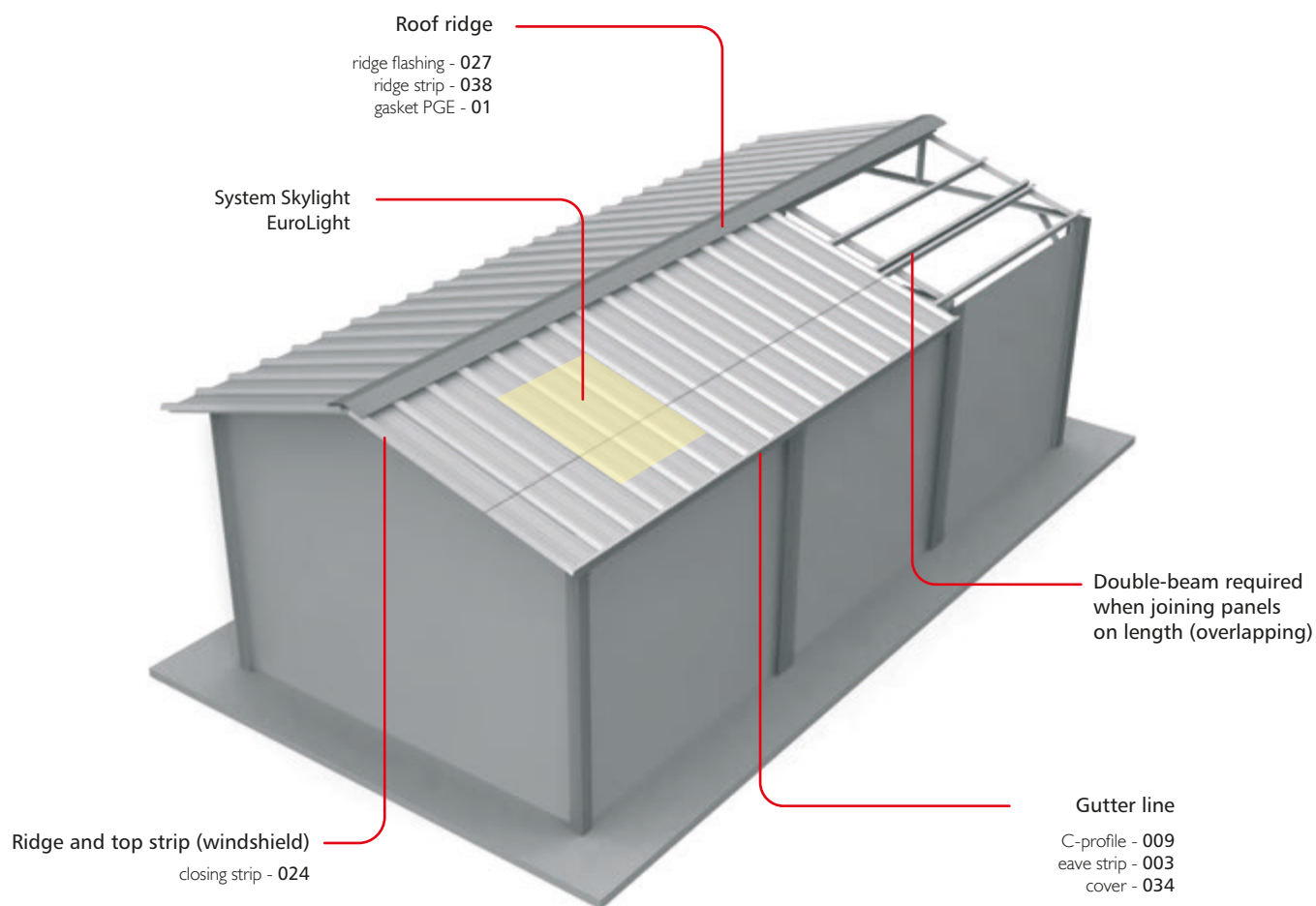


### Panel cross section



### Exemplary realizations





### ► BEFORE YOU PLACE AN ORDER:

Sandwich panels are ready to use composites. It is extremely important to make a proper measurement of the length of panels to be installed, to avoid ordering too long (unnecessary waste) or too short ones (which sometimes makes it impossible to assemble at all). Length of the plate should be specified in the building design. Panels shall also be measured on the basis of the finished supporting structure as this could differ from plan. **Customer / buyer are responsible for correctness of the lengths specification (professionally called "cutting list").**

Thickness of the panel should correspond with intended use of the building and expectations of its thermal insulation properties. Most commonly, for roof panels in a "warm" building there is a recommendation to have panels with the thermal coefficient less than  $0.25 \text{ W/m}^2\text{K}$ . This parameter is achieved by PolDeck TD 100/135 ( $0.22 \text{ W/m}^2\text{K}$ ) or thicker panel.

Roof supporting structure, designed for mounting panels can be made out of steel, wood or reinforced concrete. For each of these types of structures there are different, specialized fastening solutions in EuroPanels offer.

Be sure to maintain proper spacing of the purlins and check their parameters: profile type, length and width etc. according to the construction project. The supporting structure is the load bearing for the panels, which provide loads (snow, wind and rain).

Due to the side effects of strong sunlight, UV and extreme temperatures which heat up the surface of the roof, we recommend that roof panels shall be made in the white (for example RAL 9010). Also important is to use the expansion joints and joining panels of length with overlapping in order to "shorten" total length of a single panel. Thus allows a proper "work" on the panels' structure and compensation of changes in the skins length affected by extensive heat.

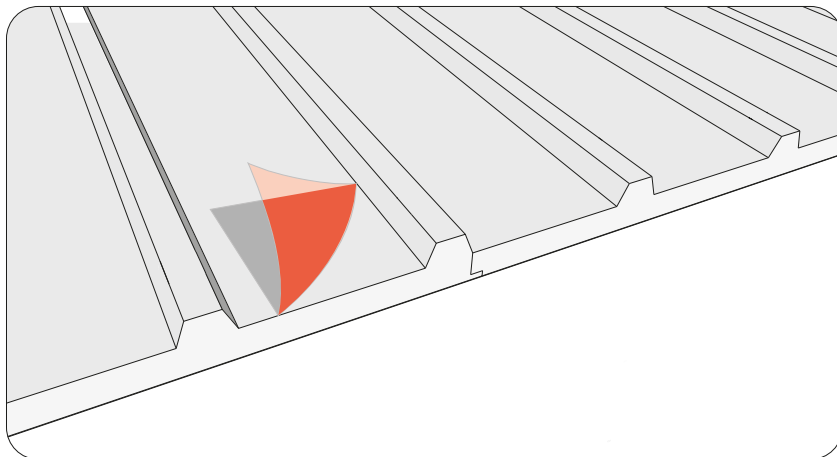


**TIP:** The EuroLight skylight is a system solution that fits to TD roof series panels. Its shape is exactly the same as our panel's one, modular width is also the same. System accessories are always developed to fit easily and also fulfill technical requirements (load capacity, stiffness, durability etc.).

More info you will find on our webpage at: [www.europanel.pl](http://www.europanel.pl)

## 1.0 - ASSEMBLY THE ROOF PANELS TO FRAME

### 1.1 - Removing of protection film



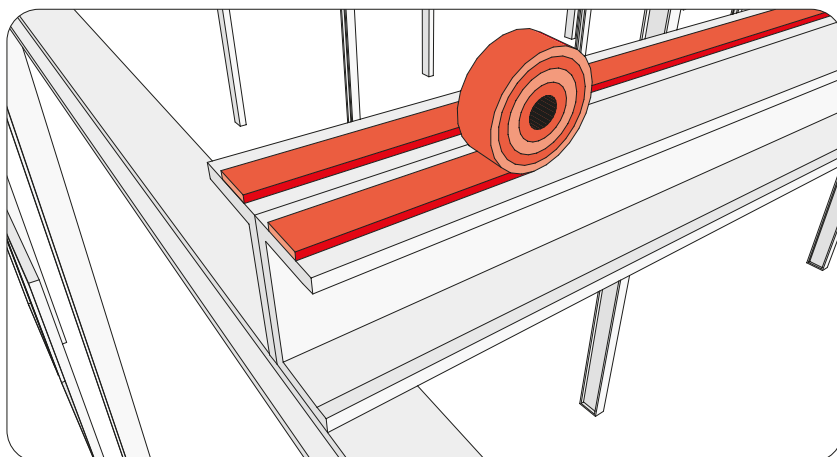
Protective film is applied on panels skins in order to protect panels against mechanical scratches during transportation only. **This is not possible for the foil to remain on panels skins for products lifetime.** If the film remains, due to sunlight and UV rays it will be vulcanized. As a result, the film will break into many small pieces and becomes irremovable. This will lead to losing warranty rights.

Because of this it is strongly recommended to remove film ASAP (not later than after 1 month from panels' manufacturing date).



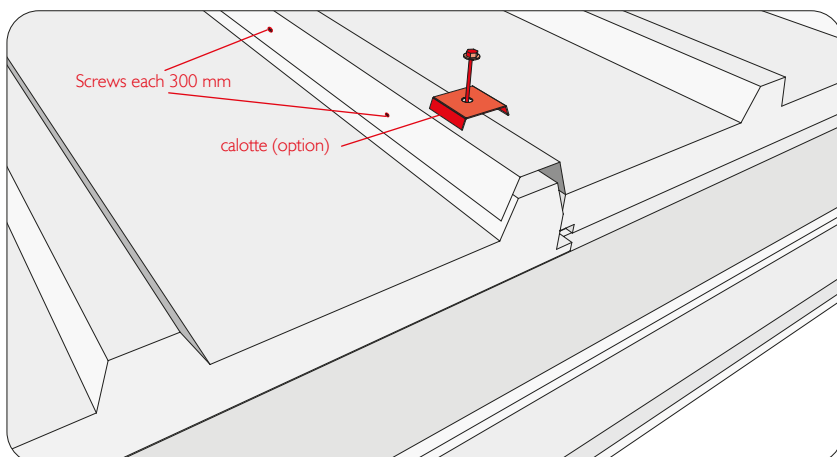
**TIP:** Beware of metal filings which are always present during cutting or drilling in metal. It is essential to remove them carefully as they are reasons of corrosive points! While removal please do not rub filings onto panels surface. It is wise to flash the roof with running water.

### 1.2 - Installation of acoustic tape



Attach the acoustic tape onto the surface that has contact with the inner skin of the roof panels. Its special features allow you to align the panel and reduce the audible effects of the panels' work on the construction. In addition, this tape prevents panel from scratching while sliding panels during installation and transmission of any corrosion from the supporting frame's structure on the roof panels.

### 1.3 - Placing and fastening the panels



Using the right equipment (vacuum pressure devices are recommended), move the panel from the storage place to the roof. Put the first panel and attach through the ribs to the construction by self-drilling screw from EuroPanels offer. Alignment of the first panel is critical as the others will only follow the joints. Before drilling, remove the protective film from the mounting points. Then download the adjacent panel, place it and secure. The steel fold shoulder of upcoming panel shall evenly adhere to the ribs surface of already screwed one on its entire length. Mounting points correspond with purlins and these should be specified in the building design.

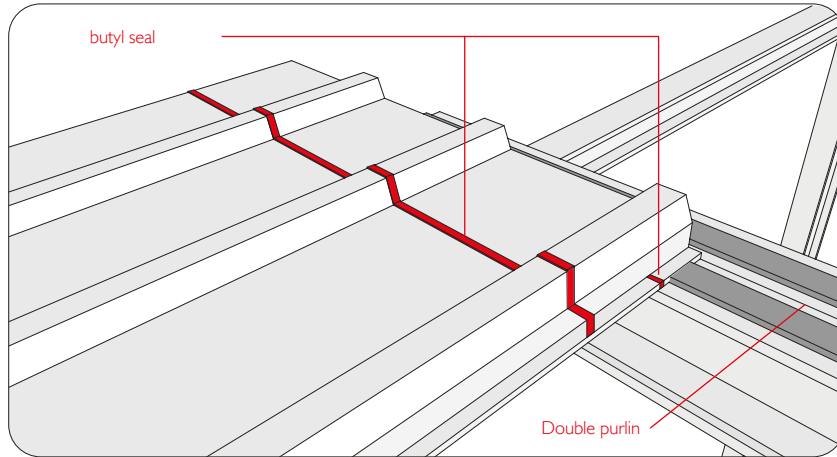
In addition, the fold shoulder is attached laterally by screws in each 300 mm distances. For installation of PolDeck TD roof panels it is recommend to use calottes, which act as shims improving down force in fastening panels to the construction.



**TIP:** Screws should be screwed when the roof is the most heated by sunlight (if possible).

## 2.0 - OVERLAPPING

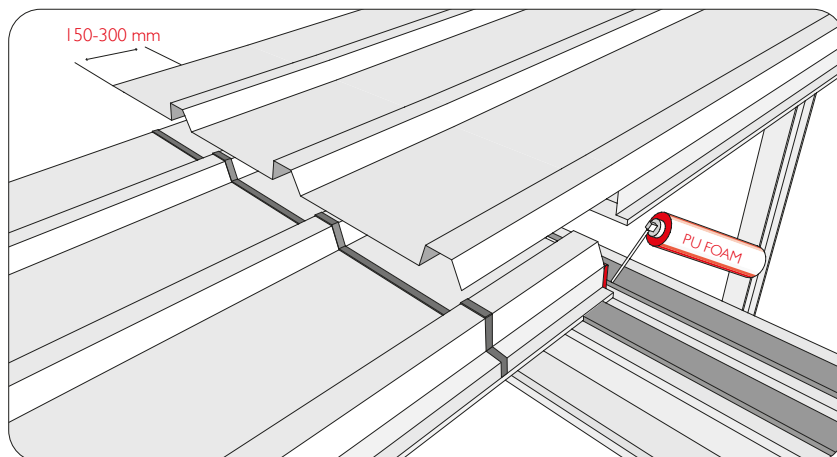
### 2.1 - Alignment of the first panel



If the roof slope has a considerable length, due to strong heating of the panels surface it is recommended to avoid individual panels to have over a dozen meters length. Instead, it is better to combine several shorter sections joined on the length with an expansion joint. This is the so-called overlapping.

For this assembly, in an overlapping point a double purlin solution is necessary. Onto such a construction, place and align the first panel (lower, the one with a gutter). Then on the entire width of the panel's external skin apply butyl seal (approximately 50 mm from the overlapping edge and onto internal joint).

### 2.2 - Preparation for overlapping

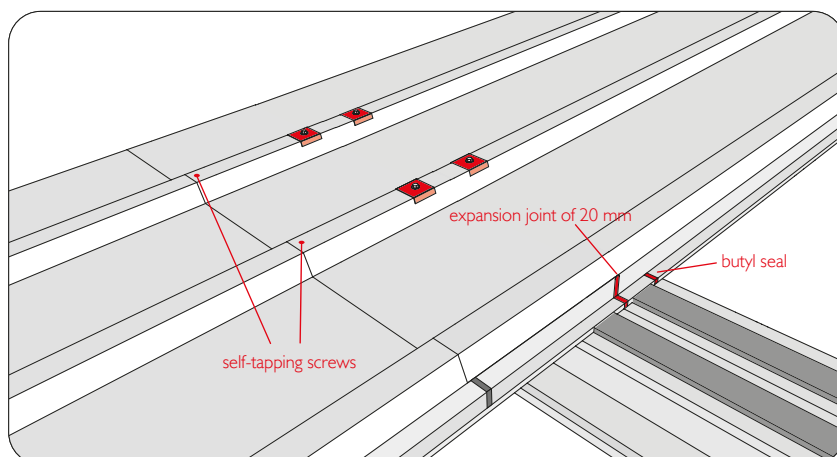


Incoming panel (upper, to the ridge side) are provided with undercut. Undercutting involves cutting the inner skin and a polyurethane core. Prior to installation, remove the undercut portion to remain only with upper steel. Undercut length is 150-300 mm, depending on the roof's pitch:

- 150 mm for pitch over 20%
- 200 mm for pitch around 16-20%
- 250 mm for pitch around 11-15%
- 300 mm for pitch around 7-10%

Before mounting the incoming panel, please apply a small amount of low-pressure PU mounting foam into full width of the inner edge of the lower panel.

### 2.3 - Fastening



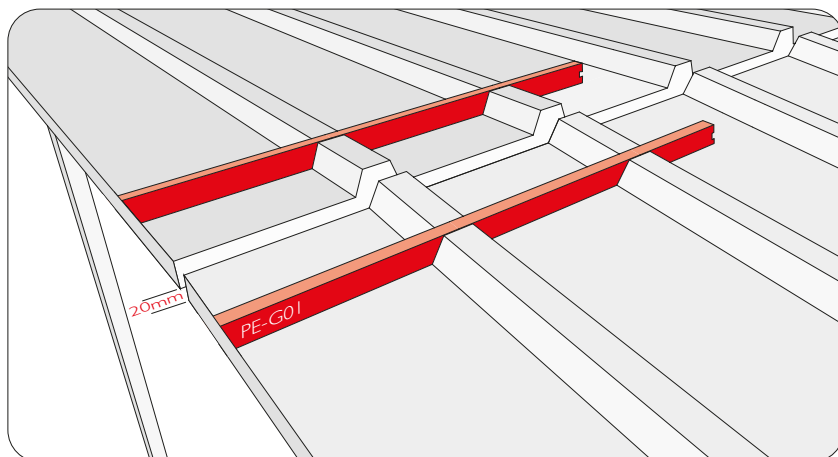
The next step is to close panels together with a 20 mm of expansion joint (space filled with PU mounting foam). This gap is essential, since it compensates the construction work of the panels (thermal, physical loads etc.)

Apply a butyl seal in overlap point and at the panel's edge (close to purlins).

Secure panels to purlins by self-drilling screws from EuroPanels offer. Additionally, in each rib use self-tapping screws applied to the point of butyl sealant discharge (as shown in Figure 2.1). Remember that at this stage of assembling you must not place any screw onto the last rib in order to make space for adjacent one.

## 3.0 - ROOF RIDGE

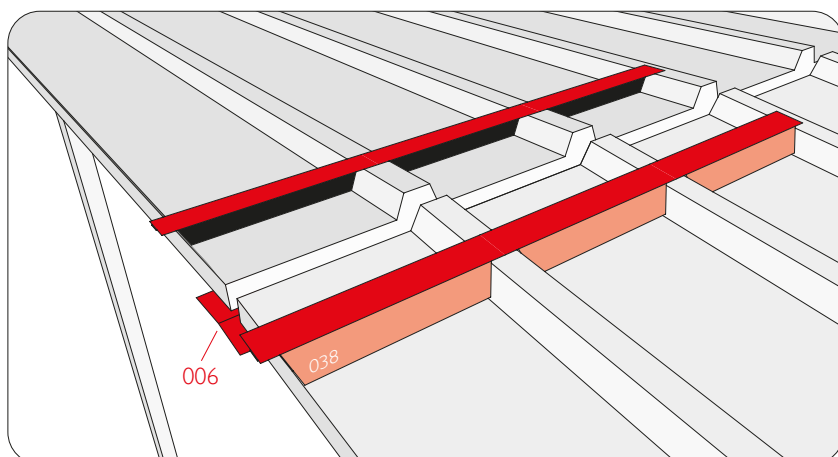
### 3.1 - The PE-G01 Ridge Gasket



In a gable type roof, internal skins of the panels shall be placed with at least 20 mm distance between inner edges. It is necessary to keep the space as panels will work on a construction during lifespan. The expansion joint cave ought to be filled in with PU mounting foam.

As panels are placed and secured into supporting construction you can place the PE-G01 gaskets. One piece of the gasket comes into individual panel. Repeat the step for the counterpart panel. Positioning of the gaskets: the same spot as for the edge of final ridge flashing.

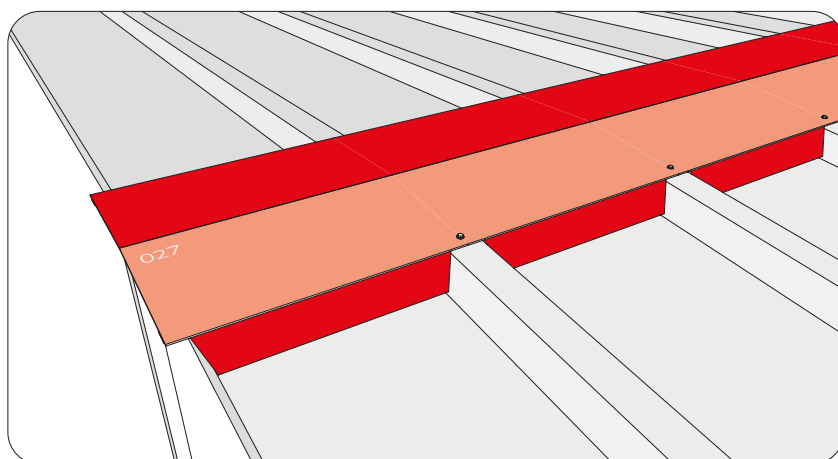
### 3.2 - Ridge strip



Into the PE-G01 gasket place ridge strip 038. One strip is to be placed into one panel. Each ridge strip covers and evens ribs line. Repeat this step for counterpart panel.

To cover panels on inner side use flashing 006, which shall be screwed into panels internal skins by self-tapping fasteners from EuroPanels range.

### 3.3 - Ridge flashing 027

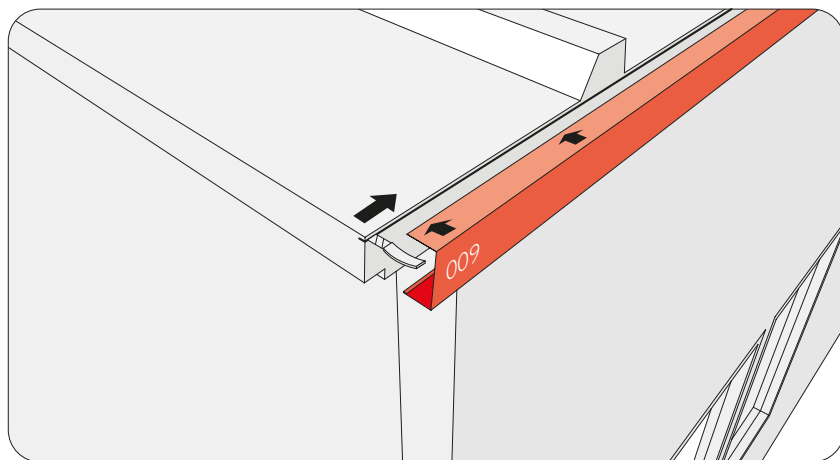


Align the roof ridge flashing to panel's ribs and attach using screws from the EuroPanels' range. This may be the outer ridge 027 (flat), or 005 (elevated).

It is recommended to prepare the number of gasket + ridge sets that corresponds to the length of the outer ridge - there are usually three such sets matching to flashing with length of 2500 mm.

## 4.0 - STANDARD GUTTER AND GABLE END

### 4.1 - C-profile 009

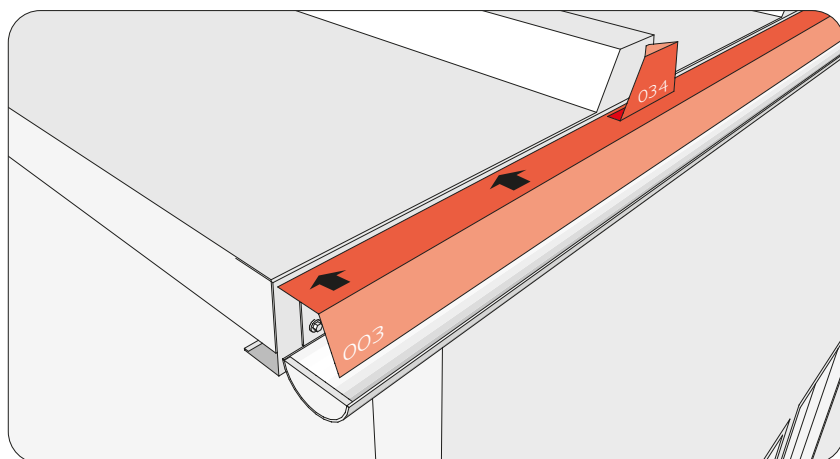


In standard method of finishing gutter and gable end there are ready to use profiles that shall be placed in proper order.

Let's get started with flashing 009 (C-profile) and 003 (eaves). Before you use them make a technological pre-cut just under the outer steel facing and a core using a knife. Depth of the cut shall be ca. 40 mm. Repeat edge cutting on entire width of each panel. To make gutter hooks secured strongly, it is advised to insert a steel stripes behind the 009 flashing's front. The stripes shall be made out of a steel of 1 mm thickness.

Now you can slip in the 009 into prepared slot. The flashing is dedicated to a panel thickness and has upper edge sharp, lower folded. Front shall lean against panel's core. Fasten the flashing on the bottom each 300 mm by short screws.

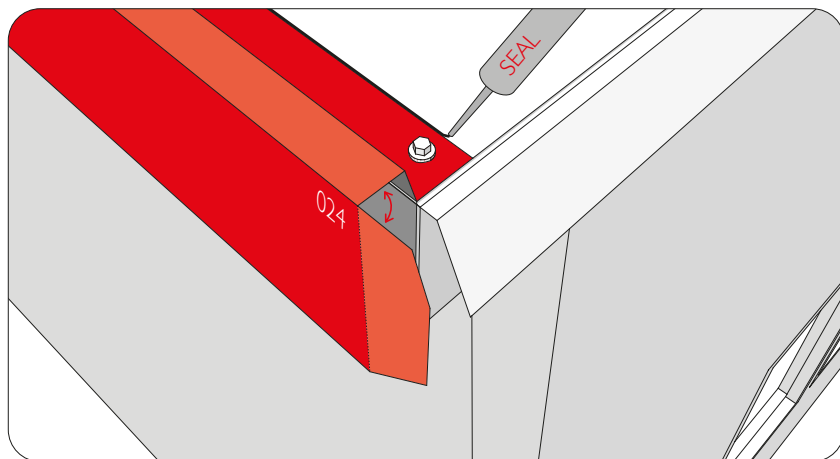
### 4.2 - Eaves 003 and a cap 034



Next step is to place an eave 003. Between outer facing of panel and C profile 009 slip in the 003 eaves. Finally, drill and rivet the finished assembly (2 rivets between panel's ribs). Such a base is now prepared for installation of gutter's hooks.

Last stage of assembling TD panels is covering open ribs in order to prevent core against UV rays. Use element (a cap) 034, which shall be slipped into core and additionally riveted from the top.

### 4.3 - Gable flashing 024



If the gable finishing (flashing 024) is to be placed on the initial panel (with steel shoulder unfilled), at first cut panel's shoulder alongside the profiled groove (in a half width of the shoulder). Start assembly from the gutter side to the ridge.

Make sure that the gable finishing comes to a rib filled with core. Remaining panels' surface should be cut off on width.

# PolDeck MD



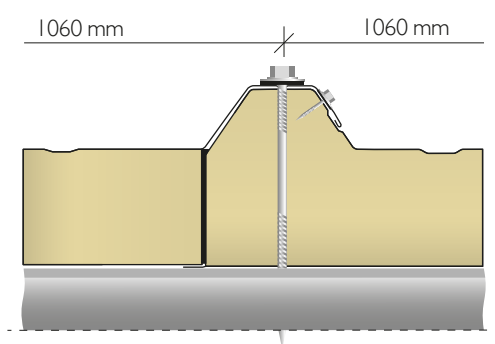
## PU ROOF PANEL

**PolDeck MD** is a roof sandwich panel with a core of rigid polyurethane foam PU, the inner lining of laminate or jut, fixed to the supporting structure by a fastener through the entire thickness of the panel. External cladding is metal, as in the standard TD roof panels. PolDeck MD is a panel to be used mainly in livestock buildings, where there is great concentration of ammonia or the need for warming the existing roof covering.

PolDeck MD panel is suitable for use in horticulture, storage rooms, warehouses, barns, poultry houses, in buildings with pitched roof, at least 4 ° (7%) for continuous panels and 6 ° (10%) for panels joined alongside, with skylights, etc.

Laminate can be cleaned with karcher.

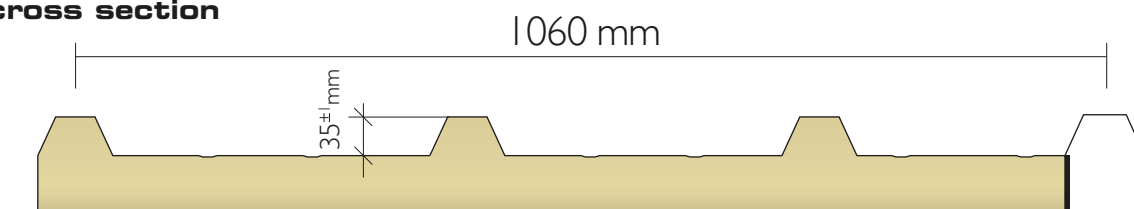
### ► Panel joint cross section



### ► Details:

Available panel thickness [ mm ]	Weight [ kg / m <sup>2</sup> ]	Number of panels in a bundle [ pcs. ]
40/75	6,47	18
60/95	7,23	14
80/115	7,98	10
100/135	8,74	8
120/155	9,50	8

### ► Panel cross section

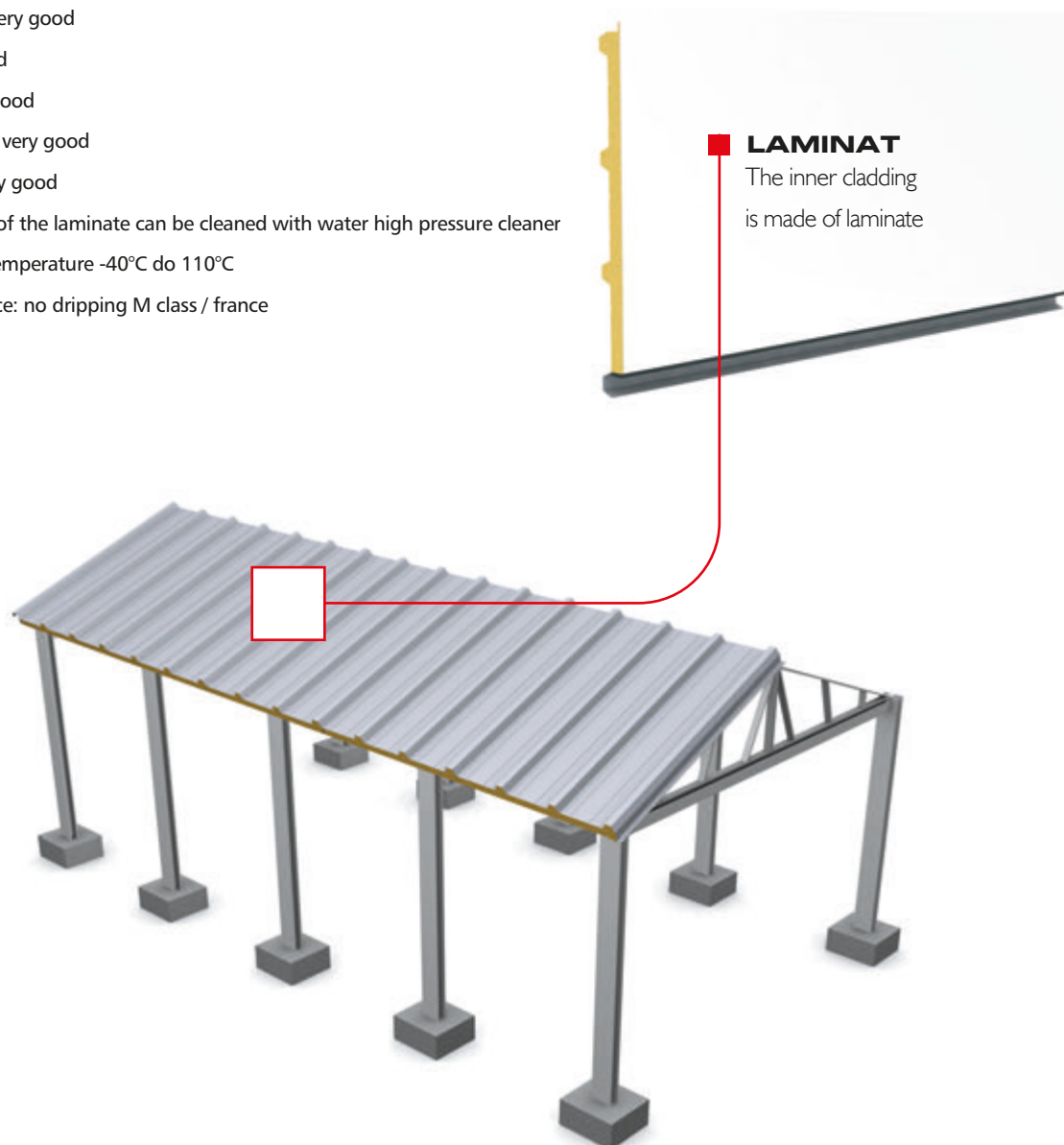


### ► Exemplary realizations



### ► Advantages of PolDeck MD panels - LAMINATE cladding

- Low water absorption - less than 1%
- Resistant to chemicals and biological agents:
  - Acids / very good
  - Alcohol / very good
  - Base / good
  - Solvents / good
  - Ammonia / very good
  - Molds / very good
- The surface of the laminate can be cleaned with water high pressure cleaner
- Operating temperature -40°C do 110°C
- Fire resistance: no dripping M class / france



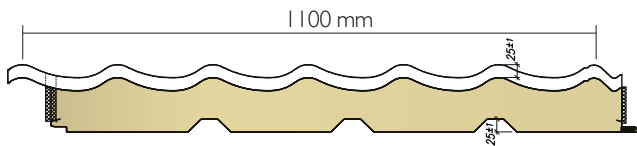
### ► Purpose of insulation panels PolDeck MD:

- Piggery
- Cowshed
- Chickencoop
- Goose house
- Vegetables and fruits warehouse
- Other buildings with the content of ammonia in the air

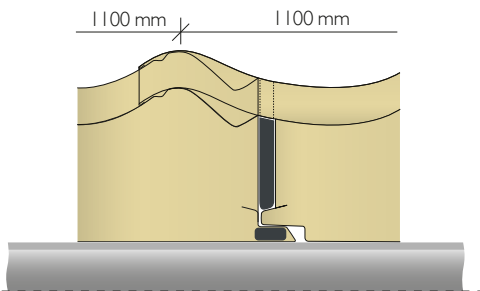
NEWS!



► Panel cross section



► Panel joint cross section



► Exemplary realizations



PU ROOF PANEL

**PolDeck BD** is the newest and the most technically advanced product in our range. PolDeck BD is a roof sandwich panel with attractive design of tiled profiling on outer side. Three inner trapezoidal profilings give more longitudinal strength. One of the most significant features of the panel is 100% filling of PU core, thus each end every corner of the billow is free from air. It is reflected in a great insulation properties and mechanical strength of the PolDeck™ BD.

Another important feature is a quick and easy assembling method: using a specialised screw just drill it throughout the panel and save costs and time!

PolDeck BD is dedicated for all of the buildings that are to have pitched roof design at least 12° (21%), like detached houses or farming.

► Options:

- AGRO – panel with additional non-condensate layer

► Details:

Available panel thickness [ mm ]	Weight [ kg / m² ]	Number of panels in a bundle [ pcs. ]
80/105	11,0	8
100/125	11,8	7
120/145	12,6	6

## ► PolDeck BD assembly method:

### 1.1 First panel alignment

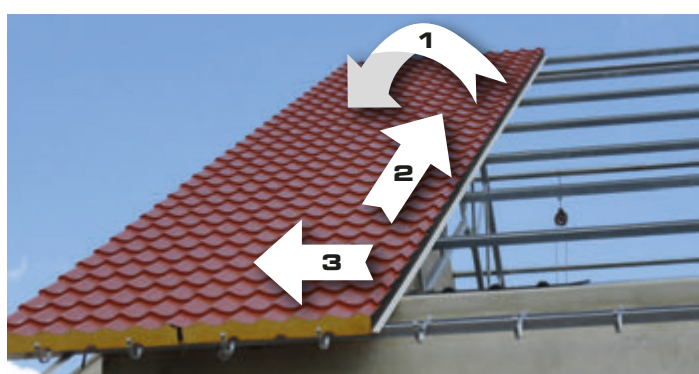
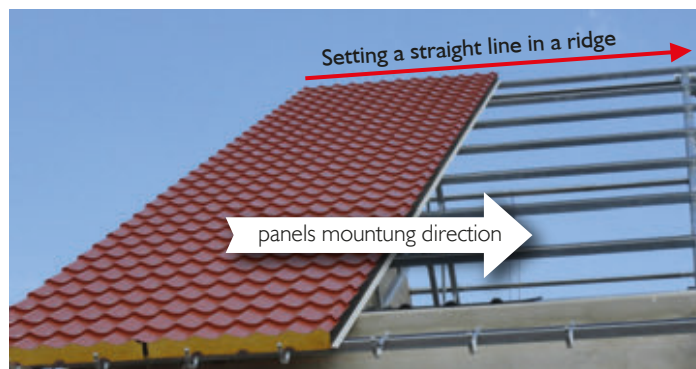
The shape of PolDeck DB panels does not allow any possible length correction in the ridge. To ensure the assembly correctness, the first panel must be placed in the construction axis, by setting a straight line in a ridge, not towards a gable or an eaves. Lack of an ideal line of panels in the eaves (so-called perforation) is not an obstacle, as it will be covered by a flashing. A determinant of a mounting line is a straight line in the ridge.

#### NOTICE:

Proper PolDeck DB panels mounting is possible in one direction only: from left to right.

### 1.2 Further panels mounting

Paired PolDeck BD panels are transported to the construction after having taken the film protecting the outer cladding against scratches. Complete film removal after mounting is impossible due to vulcanization occurrence. A paired panel is placed on the mounted one **1** in such a way that a crease closed the connection, and a panel was placed around 50 mm lower than the one mounted (like while pairing). Next, the mounted panel is pushed towards the ridge **2** until roof tiles moulding coming together is heard, corrects side adherence **3** on the length and such positioned panel is mounted to the construction.



## ► Before you order the PolDeck BD:

Due to profiling shape (BD stands for Billow Deck), indicating and ordering the right length of the PolDeck BD panels differs from the standard roof sandwich panels (for instance PolDeck TD).

For the proper PolDeck BD measure you need to refer to tiled module base. We always cut the BD panel in a middle of the module. Each tiled module is 330mm long. So you are ordering BD panels by modules, not mm.

Let's have a look at the example:

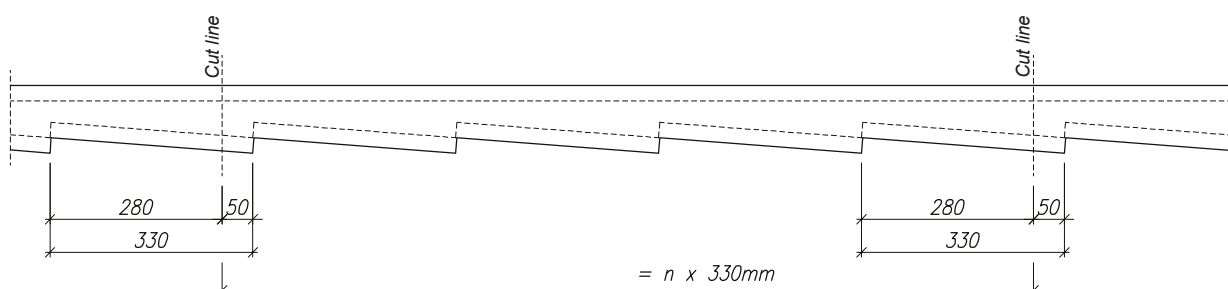
Total BD panel's length = number of modules x 330 mm. Let's say 30 modules x 330 = panel of 9 900 mm length.

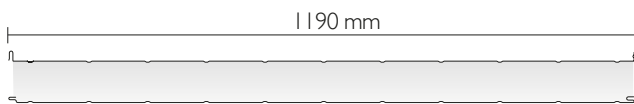
Knowing roofs span, you can also calculate this as follows:

If 7800 mm is needed / 330 mm = 23,63 so rounding up to full you have 24 modules (final length of the panel is 7920 mm).

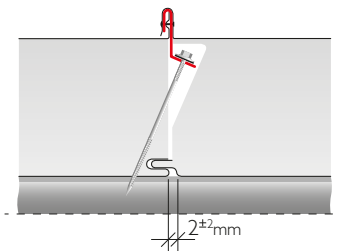
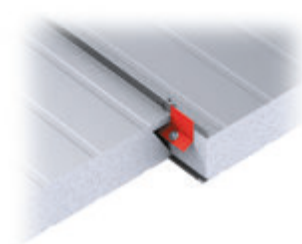
Minimal length of the PolDeck BD: 1 980mm (6 modules)

Maximal length of the PolDeck BD: 11 880mm (36 modules)

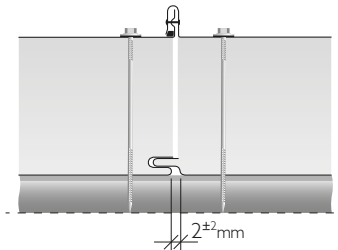
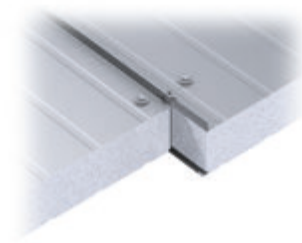




### ► Panel joint cross section - hidden joint



### ► Panel joint cross section - visible joint



**ThermaDeck PRO** is an example of roof sandwich panels with EPS (expanded polystyrene) core. In our product you have a choice of assembling method: panels could be secured to supporting construction by a screw that comes throughout the panel (visible joint) or with a specialised EUROPANELS jumper and a screw (invisible joint). In both no side flashing is needed - joint is already profiled and ready for closing (savings on additional flashings).

ThermaDeck PRO panels are recommended for roofs with a slope of at least 4° (7%) in single span and at least 6° (10%) for panels joined on length, with sky-lights, chimneys etc.

### ► Profilings:

- Grooved – T
- Linear – L

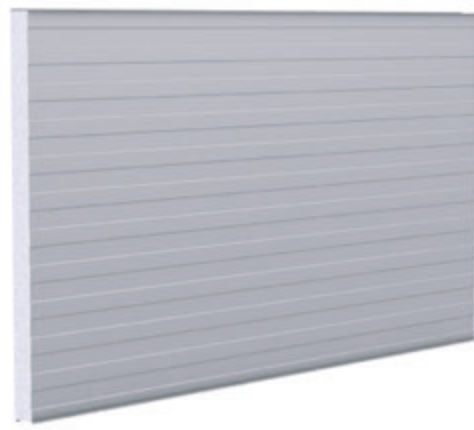
### ► Thickness:

Available panel thickness [ mm ]	Weight [ kg / m <sup>2</sup> ]	Number of panels in a bundle [ pcs. ]
100	10,2	7-8
125	10,6	7
150	11,1	6
200	11,9	4-5
250	12,8	4
300	13,6	3

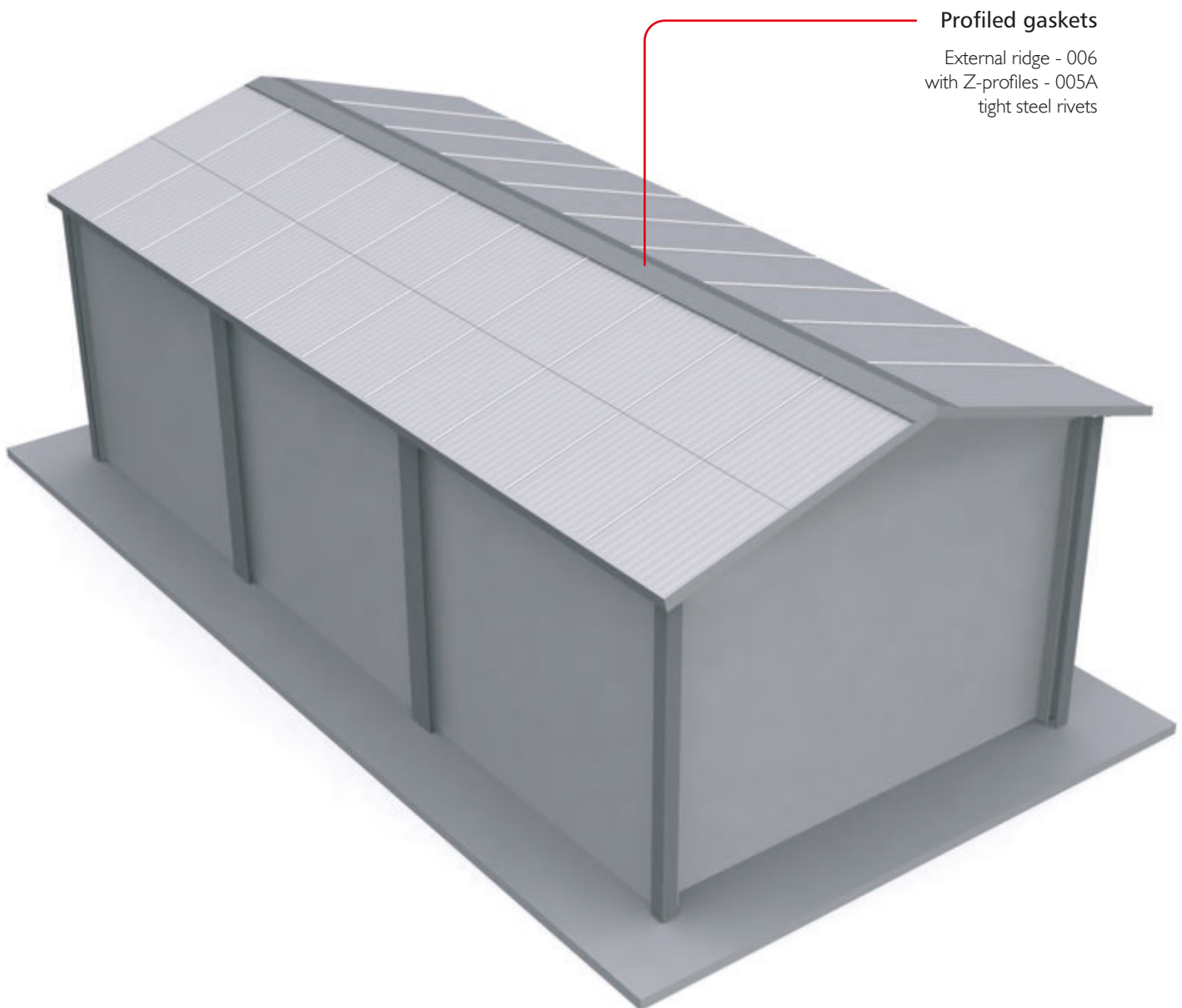




**ThermaDeck PRO T**  
Grooved



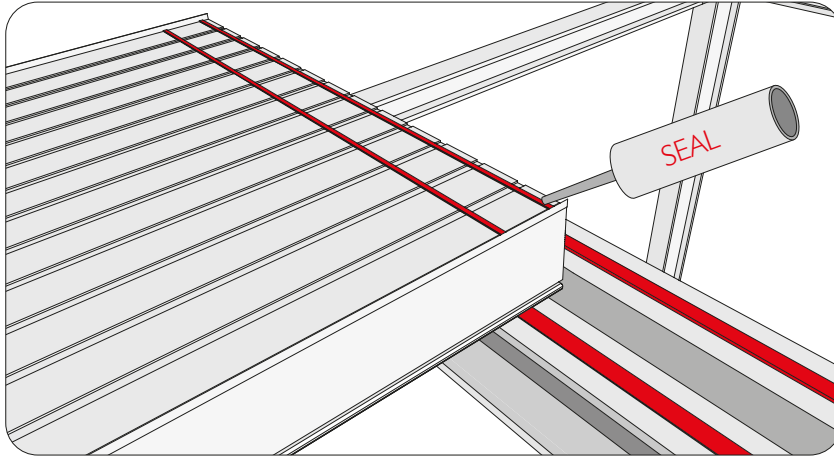
**ThermaDeck PRO L**  
Linear



**Profiled gaskets**  
External ridge - 006  
with Z-profiles - 005A  
tight steel rivets

## 1.0 - JOINING PANELS ON LENGTH

### 1.1 - Preparation of the first panel

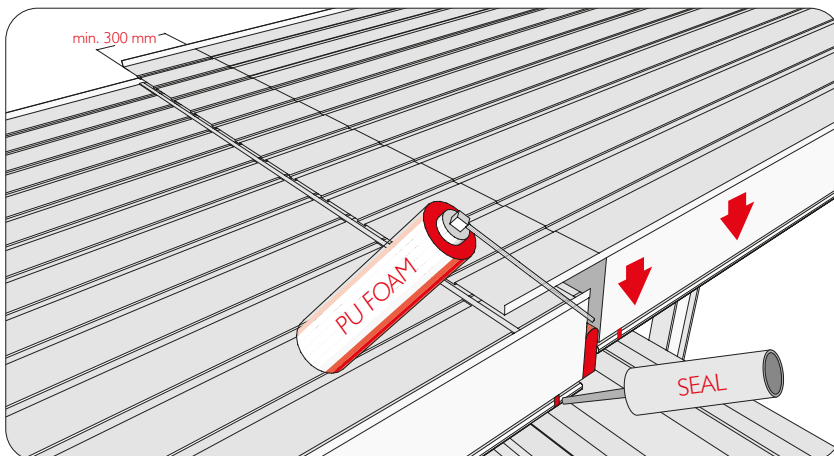


In case of a roof span longer than 7 m, due to technical reasons it is recommended to assemble panels divided into shorter lengths and joining them with expansion joint on double purlin.

It is related with thermal expandability of sandwich panels exposed onto direct sunlight. This is another reason why roof panels shall be light, preferably within first shiny colours group (like RAL9010).

Apply acoustic tape onto purlins. Place first panel - the one from the gutter's side and with standing edge to the assembly direction. Apply butyl sealant on joining area.

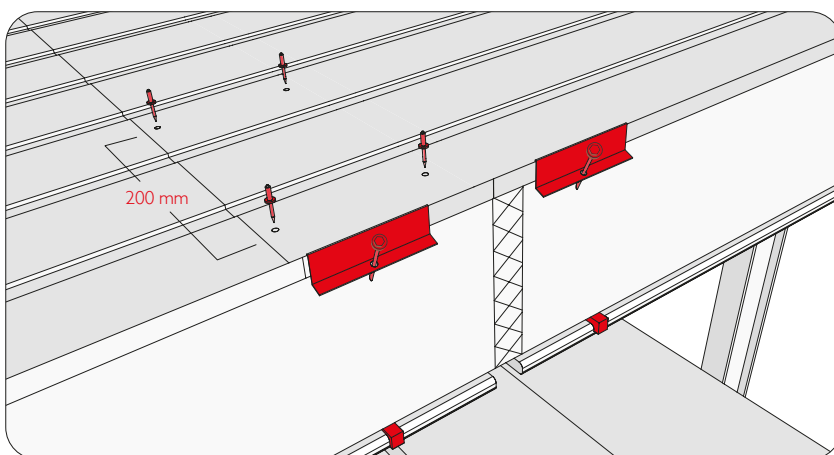
### 1.2 - Overlapping



Overlapped panels have an overlapping undercut. It means, that the internal facing is pre-cut and the facing plus core shall be removed before assembly (only the upper steel remains). Length of the overlapping shoulder shall be ca. 300 mm.

Place the upcoming panel with 20 mm of expansion joint. Expansion joint shall be filled with PU assembly foam. Side joint shall be sealed with a roofing sealant.

### 1.3 - Securing



Now secure panels to the supporting construction. First join external facing by riveting them to each other. Do it on the lines of the butyl sealant. Interval of riveting: each 200 mm.

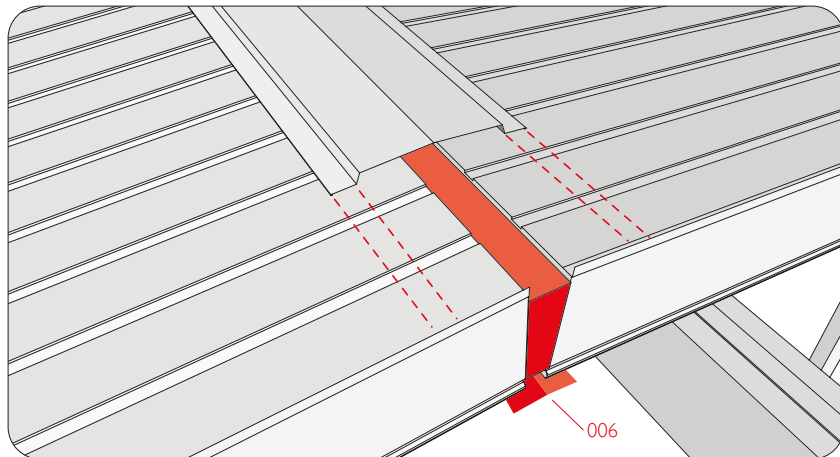
If assembling method is a hidden joint, place EUROPANELS jumpers on standing edges and secure by screwing them into supporting construction. Then place another panels remembering of the space for jumpers, that will require removal of some core in upcoming panel.



**TIP:** Last stage of assembly is riveting every jumper with a steel tight rivet. To do this just drill the hem and install the rivet. Remove metal filings and protective film from panels as soon as possible!

## 2.0 - ROOF RIDGE FOR THERMADECK PRO

### 2.1 - Thermal insulation and inner flashing 006

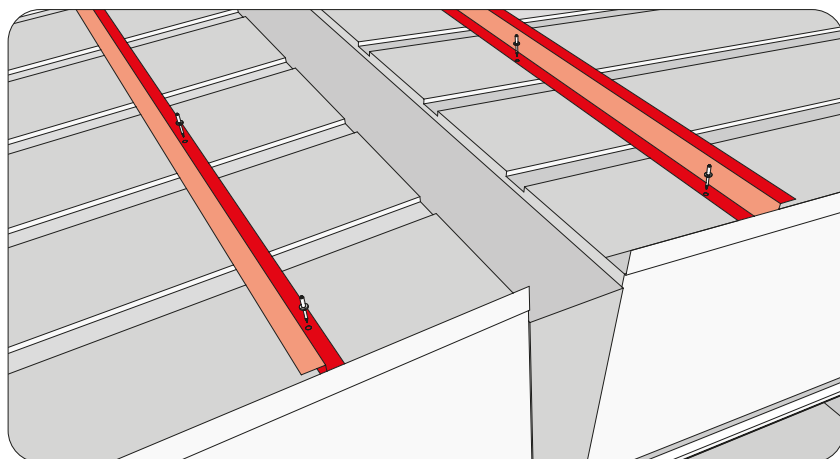


Roof gable could be closed in many ways. In our recommendation it is a set of ridge flashing 005A, inner closing 006 and a Z-profiles. For the ThermaDeck PRO it is best way due to standing edges of the panels.

In gable, a distance of about 20 mm between inner facings shall be maintained. After panels are secured to supporting construction, you can install a 006 inner flashing. The gap between panels should be sealed with an assembling PU foam.

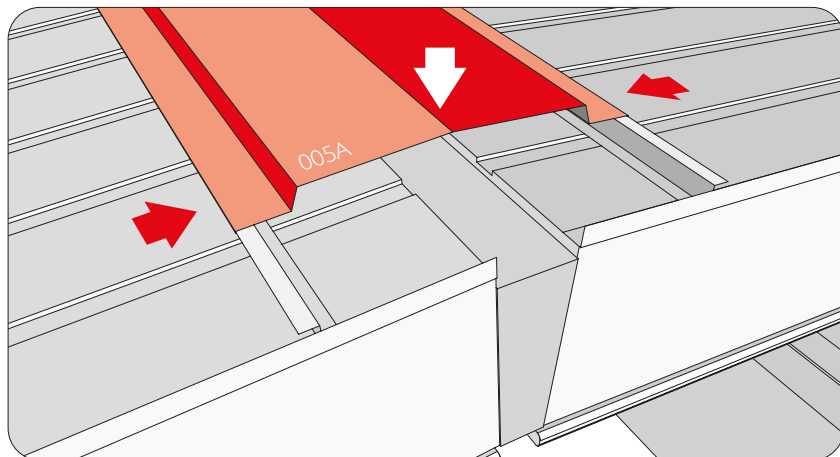
For lining of the outer flashing, place it on the gable and mark lines for Z-profiles.

### 2.2 - Z-profiles

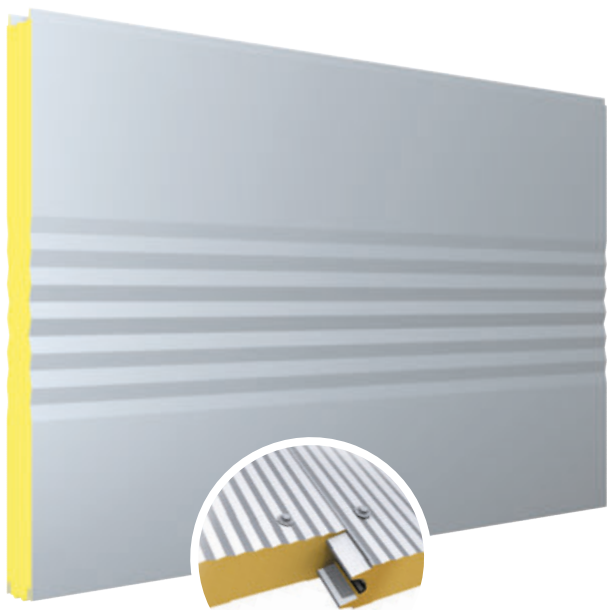


Place the 005 Z-profiles accordingly to the lines, than drill and rivet them to panel facings. Pay attention to direction of the Z-profiles - finally you will be sliding outer ridge on outer Z-edges. Properly, rivets should be covered by Z-profiles (directed into centre of the ridge), being invisible from outside.

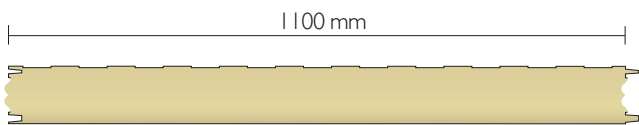
### 2.3 - External ridge 005A



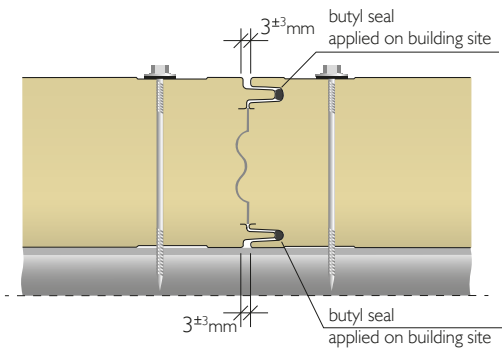
In the end slide outer ridge into the Z-profiles. You can also place one edge first, than by pressing to the centre of the ridge place the other one and release. Finally, the 005 flashing shall completely cover the gable. If it is loose, tight / adjust the Z-profiles.



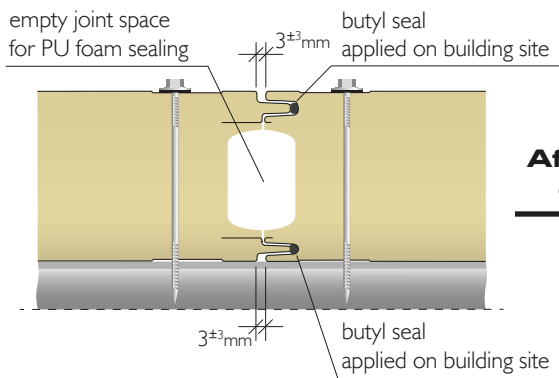
► Panel cross section



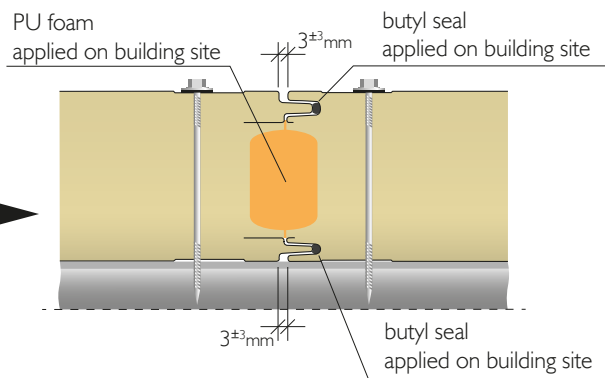
► Panel joint cross section - Standard



► Panel joint cross section - Sealed joint - 100% INSULATION!



After PU foam application



**PolTherma CS** is a specialized wall sandwich panel with polyurethane foam optimized for cold storage chambers. It is attached to the supporting structure by stainless steel fasteners that come throughout the panel. Apart from cold storage applications, this panel is ideal for most demanding thermal insulation tasks.

PolTherma CS is extremely recommended in farming and food storing / processing industry. Due to joint design and available thicknesses, it performs very good as wall or suspended ceiling in fruits and vegetables warehouses, cooling chambers, butchery etc. facilities.

► Profilings:

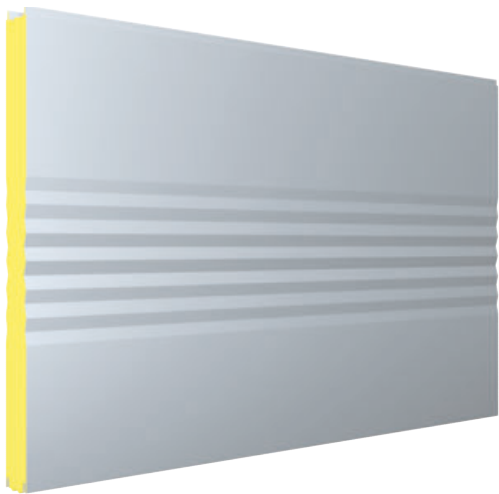
- Slanting-Wither SW
- MicroCoffer – MK550
- Linear – L
- Microprofiled – M

► Options:

- SEALED JOINT – available for 160 i 200 mm thickness

► Details:

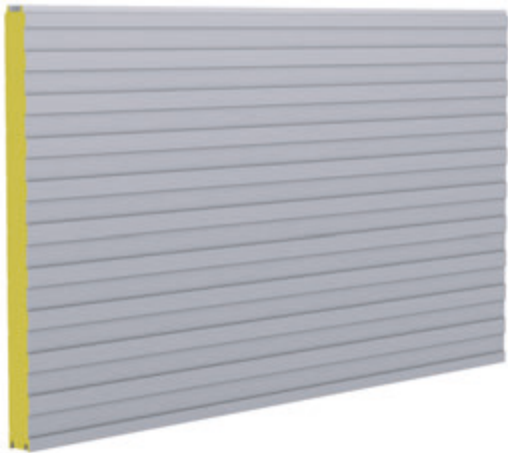
Available panel thickness [ mm ]	Weight [ kg / m² ]	Number of panels in a bundle [ pcs. ]
120	13,4	9
160	14,9	7
200	16,5	6



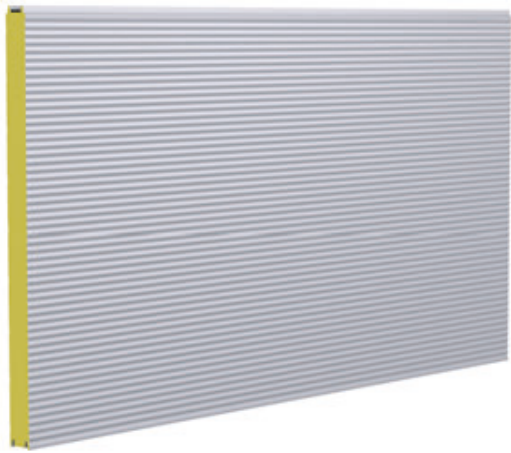
**PolTherma CS SW**  
Slanting-Wither SW



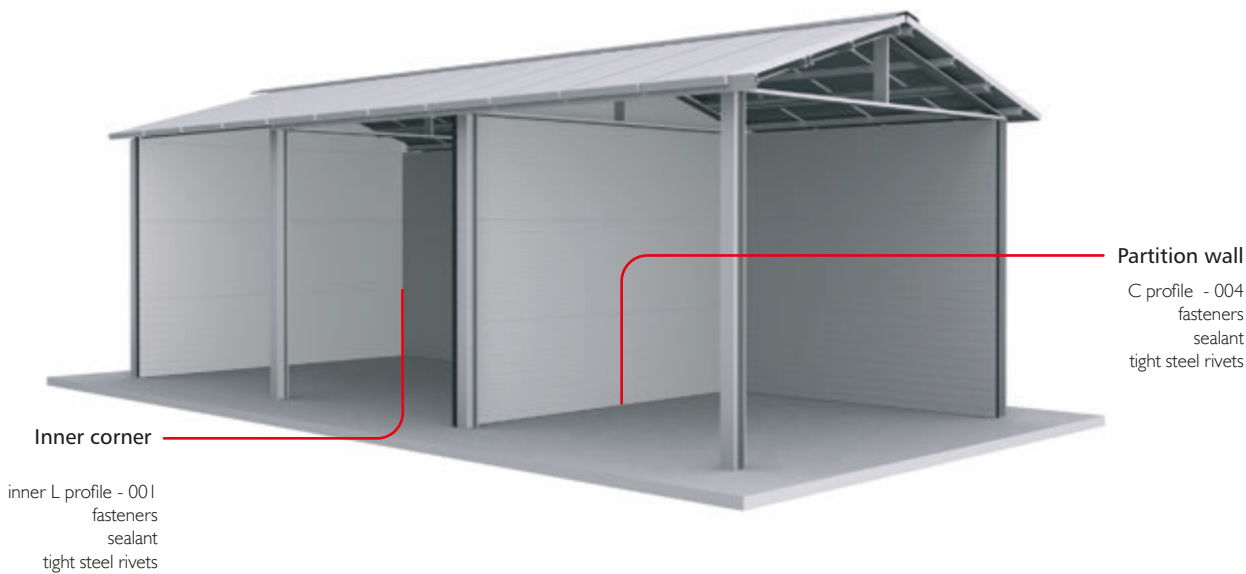
**PolTherma CS MK550**  
MicroCoffer MK 550



**PolTherma CS L**  
Linear

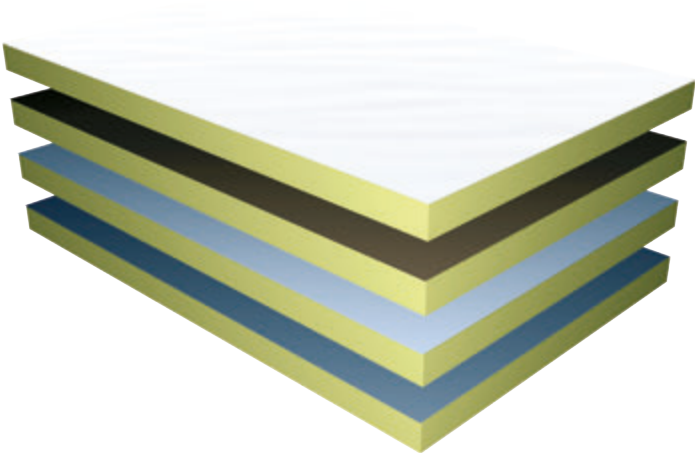


**PolTherma CS M**  
Microprofiled



**PolTherma SOFT** panels are high-quality products manufactured using the latest technology, intended for use as thermal insulation in buildings.

PolTherma SOFT panels are insulating panels made of rigid PU foam. The use of PolTherma SOFT panels offers a number of tangible benefits both during installation and during operation of the building.



► **Claddings:**

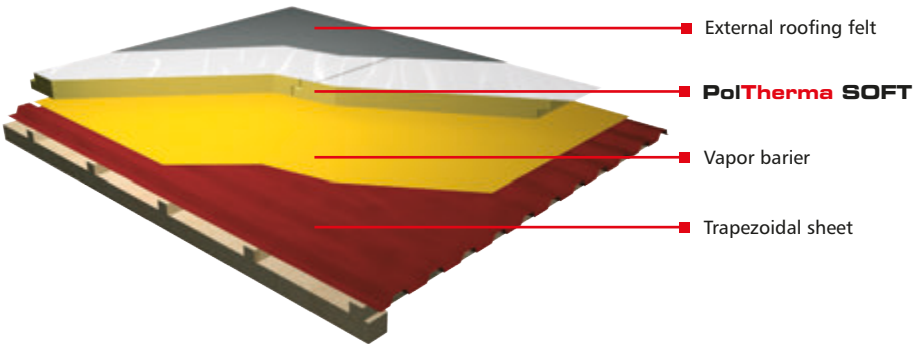
- **COMPOSITE** – both sides multilayer cladding: paper, PE film, aluminum foil.
- **ALU** – both sides cladding of a flexible aluminum foil with a thickness of 50 microns
- **KRAFT** – KRAFT paper on both sides
- **LAMINATE** – one side laminate / one side composite

► **Details:**

Available panel thickness [ mm ]	Number of panels in a bundle [ pcs. ]
40	28
60	18
80	14
100	11
120	9

► **Key features of PolTherma SOFT insulating panels**

- Very good thermal insulation - the best of the materials currently used in the construction industry
  - the lowest value of thermal conductivity  $\lambda = 0.022 \text{ [W/m}^2 \cdot \text{K]}^*$
  - almost twice lower value of the insulation layer in relation to other known insulating materials, with the same coefficient U
- High thermal stability during the lifetime due to the closed cell structure
- Extremely low hygroscopicity (lower than 2%) for core
- High chemical resistance of the core to organic solvents
- Low weight - minimal load on the structure
- Resistance to fungi and microorganisms
- No core degradation in lifetime
- Simple and safe installation
- Dimensional stability
- Conformity with UE standards CE wg EN 13165:2001



\* Declared value at +10°C

## ► What are the main advantages of PolTherma SOFT panel?

### 1 ENERGY SAVING

Using the POITHERMA SOFT as an effective thermal insulation of the building, allows the rapid increase temperature in heated rooms. At the same time prevents cooling down and helps to keep the constant temperature. POLTHERMA SOFT is an excellent thermal insulation in winter and summer.

### 2 MECHANICAL DURABILITY

Thanks to PU core, PolTherma Soft is very resistant for the mechanical deformations and compressions. These features are necessary to make the efficient thermoinsulation of flat roof and prevents problems with maintenance in the future.

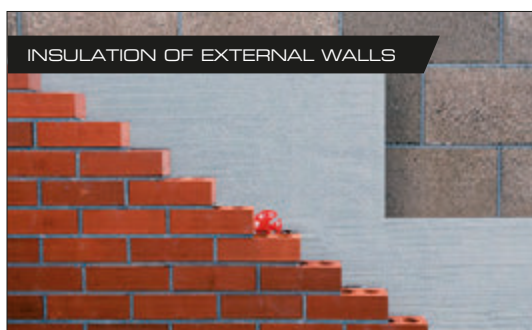
### 3 SIMPLE INSTALLATION

The assembly of insulation boards PolTherma Soft is very easy, thanks to their low weight and simple montage, without dusting. The overlapped joint is an additional advantage. Boards are available in packages or on order.

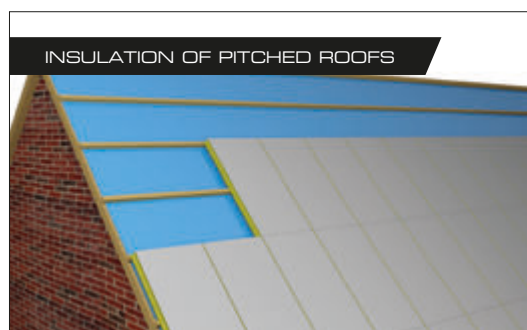
### 4 LOW HIGROSCOPICITY

An important parameter determining the thermal insulation of material is its low water absorption. The POLTHERMA SOFT is made of the best insulation core of PU. Thanks to its closed cells characterized by a very high resistance to penetration of moisture and air infiltration.

## ► Purpose of insulation panels PolTherma SOFT



e. g. three-layer wall, one-layer wall



e. g. single-family housing, agri construction



e.g. single-family housing, industrial development



e.g. industrial development, large-area

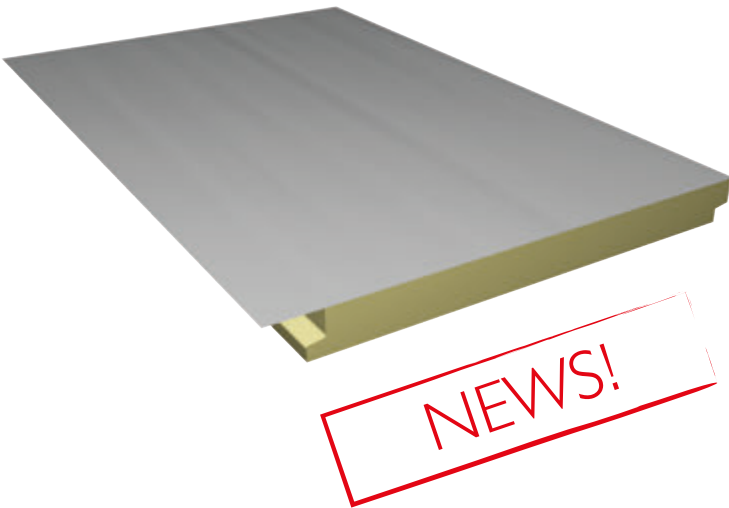


e.g. single-family housing, agri construction



e.g. industrial strings, domestic use

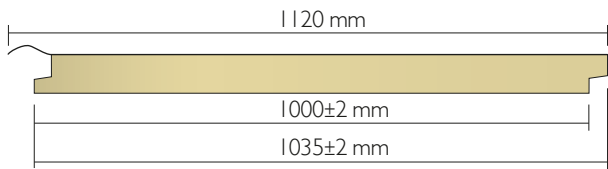
ThermaMembrane panels is a group of new products in EuroPanels. They are insulation panels, that can be used for both existing roofs thermal upgrading and roof decking in new buildings.



REI 30

only for system **ThermaMembrane FR**

Panel cross section



PU INSULATION PANEL

**ThermaMembrane FR** is the most advanced version of all the system on offer, devoted to waterproofing and insulation of deck roofs. It combines already presented advantages, such as light weight, high insulation properties, tightness and high durability, mounting easiness together with the highest mandatory fire resistance of REI 30 level, without glass fiber. It is at present the most advanced system of light roof decking for deck roofs, offering integrated waterproofing and insulation functions in a single-layer system.

**ThermaMembrane** is an optimal solution for waterproofing and insulation of both new and existing (restored) deck roofs. The system is mounted mechanically to a steel or concrete surface, and the mounting is performed on the contact line only, not on the entire surface, like in **ThermaMembrane (FR)**. A PVC membrane crease, existing along every panel allows us to cover and seal anchoring line, using electrical welding with the next panel's outer PVC cladding, which is not covered with any finishing material. This way, the lightest and most efficient waterproofing and insulation system for deck roofs is delivered. The system meets all the thermal and durability requirements.

Options:

- **ThermaMembrane**
- **ThermaMembrane FR**

Details:

Available panel thickness [ mm ]	Number of panels in a bundle [ pcs. ]
80*	14
100	11
120	9
140	8
175	6

\* Unavailable for ThermaMembrane FR



## ► Why ThermaMembrane?

- fire resistance: REI 30 without glass fibre
- class B-s3, d0 reaction to fire
- external fire resistance:  $B_{ROOF}(tI)$
- real single-layer waterproofing system (outer PVC cladding, integrated with panels' PU insulation core)
- mechanical mounting in panels contact area
- electrical welding area of PVC membrane overlap only in panel contact spots
- resistance to extreme temperatures, pressure and UV radiation
- guaranteed tightness and durability
- an option of using in new and existing deck roofs

## ► Mounting tips



TM/TM FR panels are mounted directly on existing surface (roof, flat roof).

An important element is using vapour barrier.

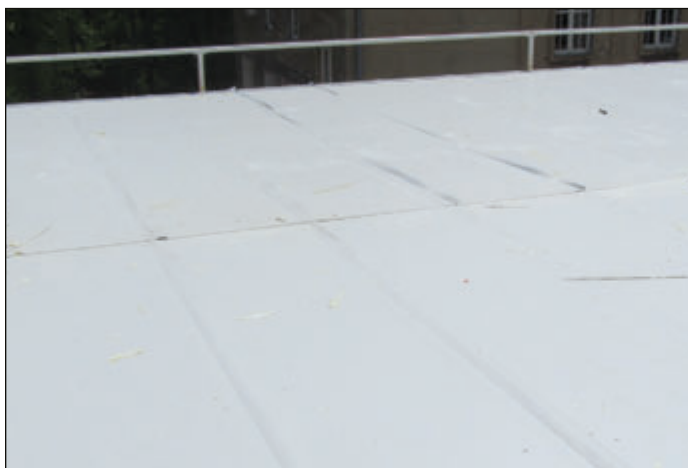
Panels are mounted successively along roof slope, laid in halfbond pattern.



Longitudinal contact area is secured by PVC membrane overlap from a neighbouring panel.



While mounting, system accessories- mounting pins are used.



Transverse joint connection of the panels is secured by welding 100 mm of a membrane strip.

**ThermaBitum** panels are a group of new EuroPanels products. These panels can be used both for insulating existing roofs as part of thermal insulation modernization of buildings, and the execution of new roofs on newly constructed buildings.

ThermaBitum FR was awarded the Gold Medal of the XXIII International Construction and Architecture Fair BUDMA 2014 for innovative products at the construction market.



**ThermaBitum** is mainly dedicated for thermo-modernization of existing roofs, in the case of which the most important aspect is to improve the insulation of buildings, especially in the context of the new, increasingly demanding, regulations in this regard. Using the panels, you can also perform classless roofs, within the meaning of fire resistance, in newly constructed buildings that need not to meet such requirements.

**ThermaBitum FR** is a product of very high fire resistance performance, ignitable while maintaining the same performance in terms of insulation. These panels may be mainly used in new facilities in which the requirements for fire resistance are high. The current classifications for this product:

- REI 30** – for the system on trapezoidal sheet
- B-s3,d0** – for the system on trapezoidal sheet
- B<sub>ROOF</sub>(t1)** – in terms of the roof resistance to external fire, make them ideal in terms flat roofs with a slope of 0 -20 °

The combination of very good insulating properties with the high, given above, fire resistance parameters, make this product an extremely modern and sought one on the market of construction materials.

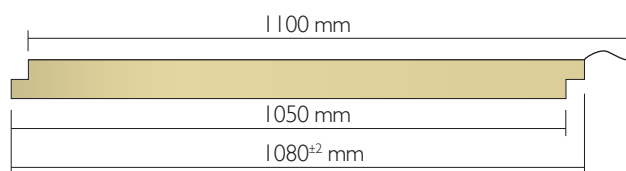


**REI 30**

only for system **ThermaBitum FR**

### ► Panel cross section - type A

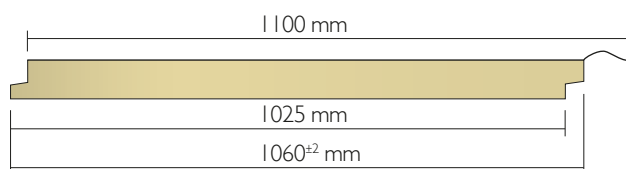
**ThermaBitum** ( thickness 60 mm )



### ► Panel cross section - type B

**ThermaBitum** ( thickness: 80, 100, 120, 140 and 175 mm )

**ThermaBitum FR** ( all thicknesses )



### ► Options:

- **ThermaBitum**
- **ThermaBitum FR**

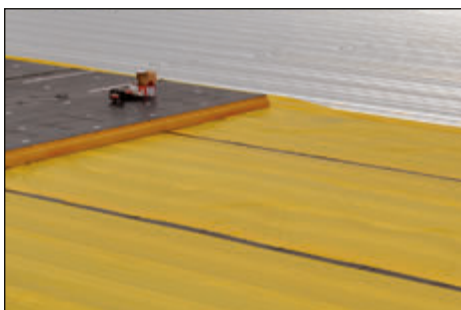
### ► Details:

Available panel thickness [ mm ]	Number of panels in a bundle [ pcs. ]
60*	18
80*	14
100	11
120	9
140	8
175	6
* Unavailable for ThermaBitum FR	

## ► Why ThermaBitum?

- Ideal for existing roofs or newly designed
- Final covering of specialised roofing felt is made by using a torch with no fear about core liquefaction effect
- Exceptional durability against extreme temperatures (hot and cold)
- Most thermal efficient insulation core (rigid polyurethane foam)
- Simplicity of assembly and handling
- Ready for any kind of roofing supporting construction (concrete, steel, wood)
- Final covering with one-layer of roofing felt
- Longitudinal shoulder of external facing covers the joint
- Complete system, ready for assembly

## ► Deck roofs insulation



TB/TB FR panels are mounted directly on existing surface (roof, flat roof). An important element is using vapour barrier. Panels are mounted successively along roof slope, laid in half bond pattern.

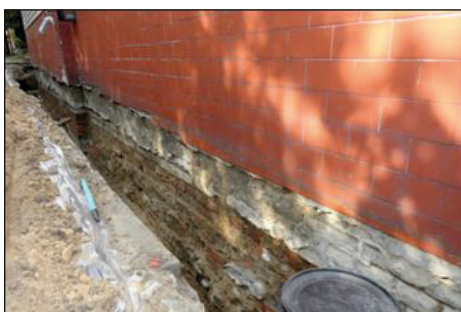


While mounting, system accessories are used. Flashings, taking rainwater to the gutters, are mounted before applying a top cover membrane.



Top cover membrane is mounted directly to TB/TB FR exterior cladding using a gas burner (heat welding).

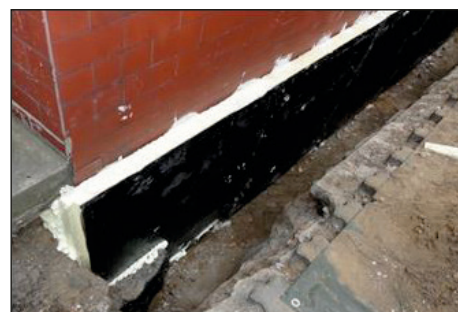
## ► Vertical insulation of building foundations



1. Foundations uncovering, natural drying (1-2 weeks), Filling the gaps with cement mortar.



2. Damp proofing protection of foundation surface with bituminous formulations



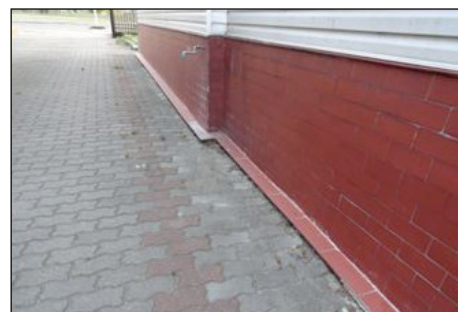
3. ThermaBitum insulation panels mounting (using adhesive mortar or PU glue)



4. Mounting additional drainage foil, as a protective layer for internal cladding.



5. Filling the gaps- sealing contact places between panels and foundations/building walls.



6. Filling back the trench, laying sett blocks etc.

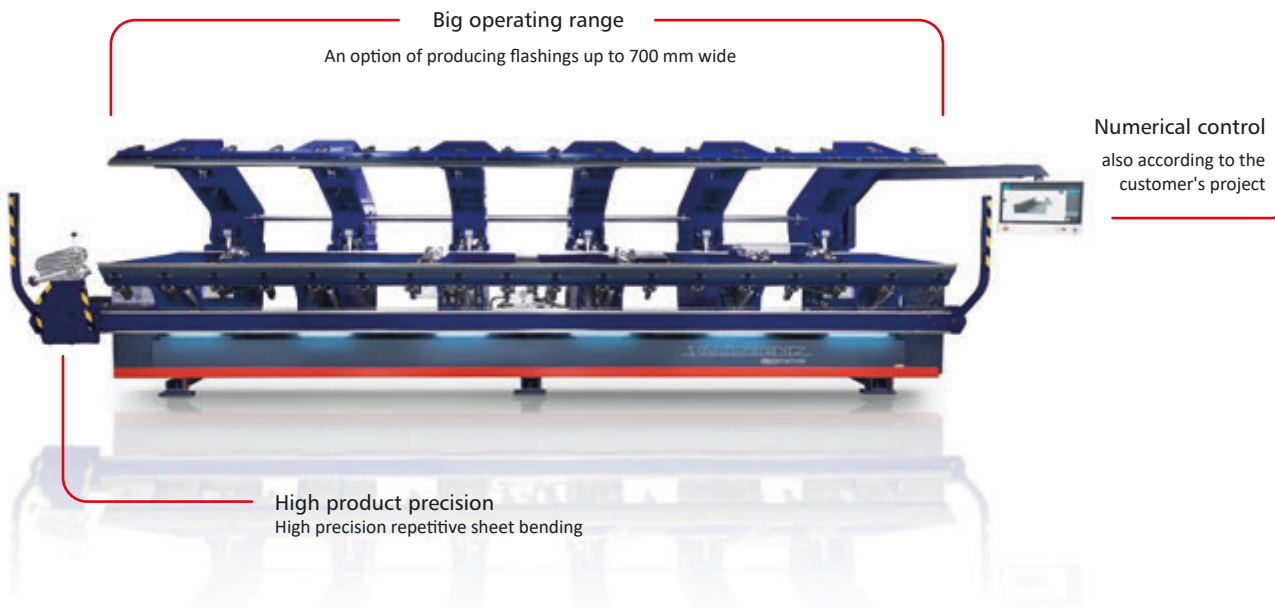
# Flashing

## ► The latest, fully automated, CNC-controlled double bending machine

EuroPanels has the best-in-class, most modern computer-controlled bending machine. It is steered by a touch panel, where firstly, a flashing is drawn. Following that, dimensions and angles are corrected with high precision. Later, the way of making an element is checked in order to eliminate potential bent edges collisions. Finally, roofing sheets are placed on the machine. After a while, the element is ready, produced exactly with the data input under the operator's supervision. The sheet is grabbed by hydraulically operated finger-shaped grippers, bent both ways (up and down), and moved automatically with high precision.

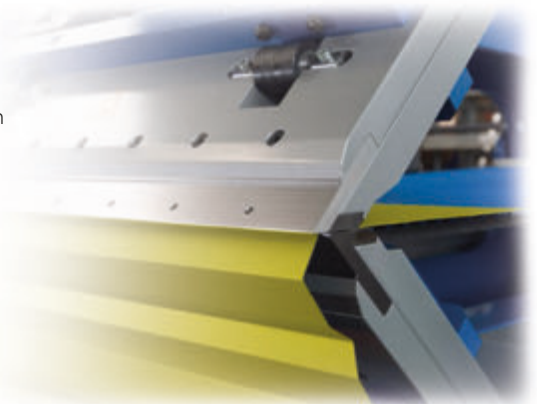
## ► Basic parameters:

- stainless steel sheets: 1,0 mm
- steel sheets: up to 1,5 mm
- aluminium sheets: up to 2.0 mm
- minimum flattening: 15 mm
- maximum ready-made element length: 6,4 m
- maximum sheet width: 1250 mm
- maximum bending angle: 140°
- an option of producing a few elements at the same time (e.g. 3x2m, 2x3 m)



## ► Why order flashings in EuroPanels:

- fast production of standard flashings from EuroPanels catalogue harmonised with the panels range
- an option of producing flashings according to the customer's drawings
- 100% reproducible dimensions (important mainly to maintain even sections and bending angles in batch production)
- any length of produced elements (maximum up to 6,4 m)
- every element may have conical ends, enabling ideal connection in length (flashings slide in over a distance of 50 mm, which compensates for the sheets' thickness, resulting in even outer edge)
- possibility of producing flashings with very sophisticated shapes





## REFERENCE BUILDINGS

### PolTherma TS



### PolTherma PS



**PolTherma CS**



**ThermaStyle PRO**



## REFERENCE BUILDINGS

### PolDeck TD



### ThermaMembrane FR



**ThermaDeck PRO**



**ThermaBitum FR**





Business partner:

We do believe that our products proposal will meet your expectations, because application of our products significantly reduces costs of constructing and operating the buildings. These are mainly savings of power and utilities, which have decisive influence on total costs of use. We are open for all your questions and we express our hope for fruitful cooperation in the nearest future. We gaily await and expect that you will accept our invitation for mutual cooperation.

CE certification for all of PU Panels



Excellent thermal resistance (even  $U=0,11$ )  
and fire resistance (EI 15 PUR, EI 30 PIR, RE 120)



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