

**SLATE
SANDWICH
PANEL
INSTALLATION
MANUAL**

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SLATE SANDWICH PANEL

The slate panel is a sandwich panel with a unique purpose, decorative. It retains all the features of a panel with a rigid polyurethane foam core - a great insulating material for use as a roof or façade on various types of structures.

Slate, like other sandwich panels, can be attached to a steel, wooden or aluminum grate.

In addition, the panel has been designed in such a way that it works well on a sloping roof. Thanks to this, slate allows for the construction of buildings with unique, modern aesthetics. The eavesless roof and walls create a minimalistic design character.

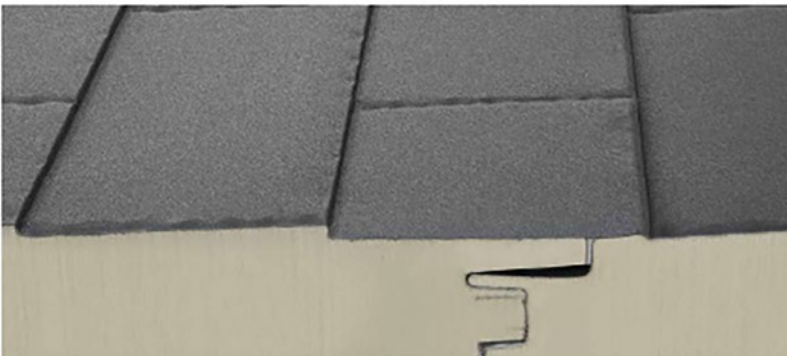
| Horizontal installation on the wall



| Lock detail



| Connection detail

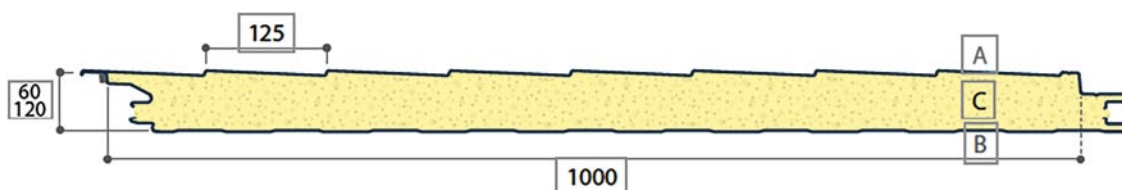


TECHNICAL CARD

Name	Slate panel - wall sandwich panel with a polyurethane (PIR) core with hidden fastening; possibility of mounting on a pitched roof	
Core	rigid polyurethane PIR foam / density: 38 kg / m ³	
Steel grade	S250GD	
Coatings	outer - 7024 mat; internal - 9002	
Effective width [mm]	1000	
Overall width [mm]	1072	
Plate length [mm]	3000-10000*	
Core thickness [mm]	60	120
Cladding thickness [mm]	0,45 (out) / 0,40 (int)	0,50 (out) / 0,50 (int)
Weight [kg/m²]	10,0	13,6
Thermal insulation U_c [W/m²K]	0,39	0,18 (wall) / 0,19 (roof)
Resistance to external fire	NRO	
Reaction to fire	B-s1,d0	B-s2,d0
Minimum roof slope	25° (46,6%)	

Panel lengths every 250 mm: 3000, 3250, 3500, (...), 9500, 9750, 10000 [mm]

	Characteristic load [kN / m ²]	spacing of supports [m]							
		use as a roof				use as a wall			
		panel thickness 60 mm		panel thickness 120 mm		panel thickness 60 mm		panel thickness 120 mm	
		1-span system	2-span system	1-span system	2-span system	1-span system	2-span system	1-span system	2-span system
pressure	0,60	2,65	4,10	5,00	5,65	4,15	4,90	5,70	5,70
	1,00	2,35	3,20	4,25	4,55	3,50	3,80	4,40	4,40
	1,50	2,20	2,20	3,40	3,40	3,00	3,10	3,60	3,60
	2,40	1,45	1,45	2,25	2,25	1,45	1,45	2,25	2,25
	3,20	1,10	1,10	1,70	1,70	1,10	1,10	1,70	1,70
suction	0,60	2,85	4,60	5,40	5,50	3,80	3,60	5,35	5,00
	1,00	2,50	2,05	3,71	3,25	2,70	2,05	3,71	2,95
	1,50	1,90	1,50	2,49	2,15	1,80	1,40	2,49	2,00
	2,50	1,10	0,90	1,65	1,40	1,10	0,90	1,65	1,40



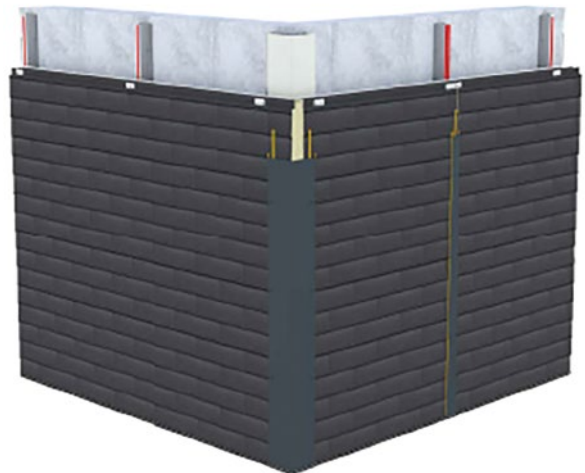
GENERAL SAFETY RULES

During the assembly of Balex Metal products it is crucial to follow all the general safety conditions and the rules included in this instruction, to avoid dangerous situations. Before the start, the introduction training have to be done and confirmed by signature of a worker. All the actions have to be done by the workers with valid medical report about no contraindications to do their job and under the supervision of authorized person. Particular attention should be paid to difficult weather conditions and protection against falls from heights (protective barriers, safety harnesses). It is essential to use personal protective equipment appropriately for the type of threat or exposure.

MOUNTING PANELS ON THE WALL



Steel structure



Concrete wall



Block wall

The slate panel can be used as a primary finish for various structures due to its convenient installation with omega profiles.

The product is ideal for both new projects and renovation!

We show installation on a steel frame below. The method of assembling all frames is the same thanks to the use of omega profiles.

MOUNTING PANELS ON THE WALL

The underside of the steel frame is fitted with a C-profile to which a horizontal omega profile can be attached. The C-profile is recommended as a support for the horizontal omega profile when the columns are spaced further apart.



I Main frame: steel frame

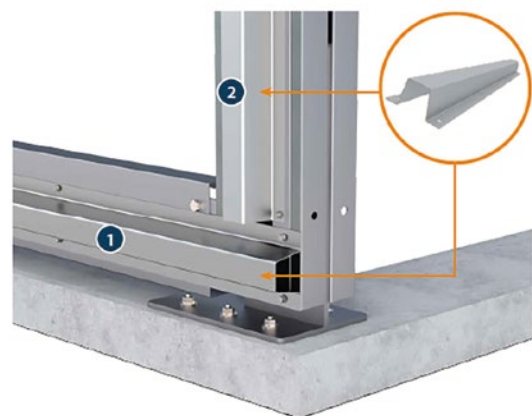
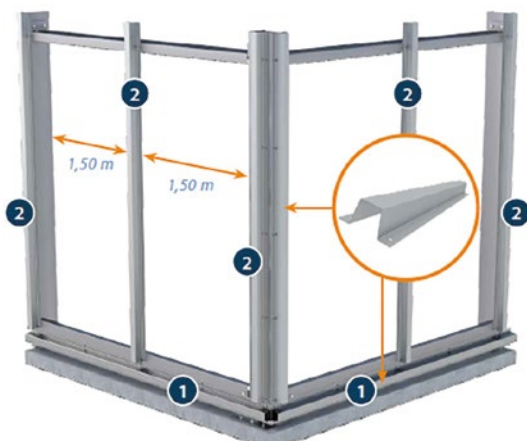


I Detail of the steel frame with C-profile

The first step is to install the Omega profiles. They constitute the basis of a flat frame, to which the panels will be attached, and therefore they should be assembled with great care.

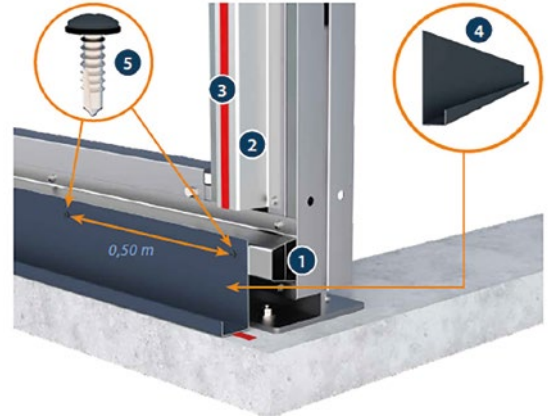
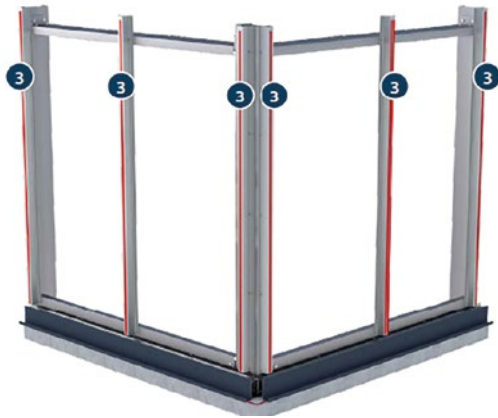
First, the horizontal bottom profile (1) is attached, then the vertical profiles (2).

Distance between vertical profiles - see table on page 5.



MOUNTING PANELS ON THE WALL

After installing the vertical Omega profiles (2), the self-adhesive seal (3) is applied. It provides a seal between the structure and the panel and reduces the spread of sounds. Then you can mount the start machining (4). They are fastened every 0.50 m with torx screws (4.8 x 35) (5).



Before lifting the panel (6), remove the protective film.

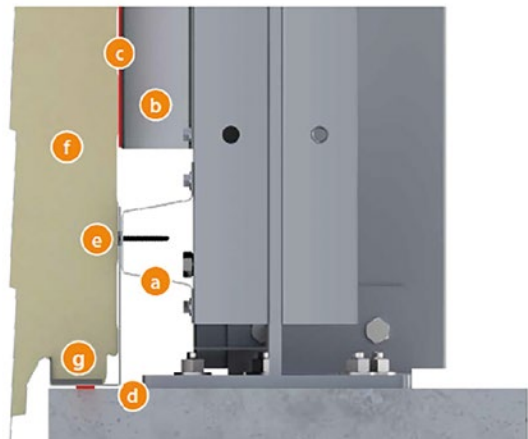


The panel should be placed on soft pads to avoid damaging its edges.

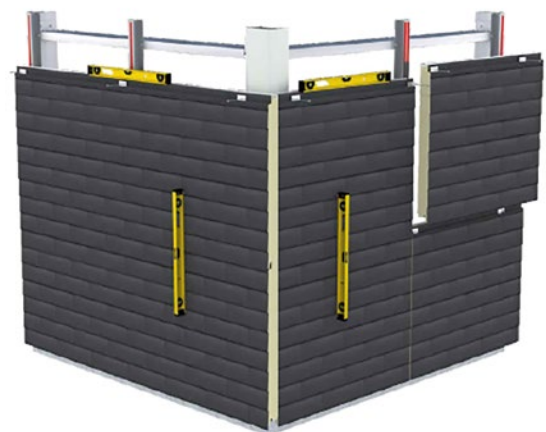
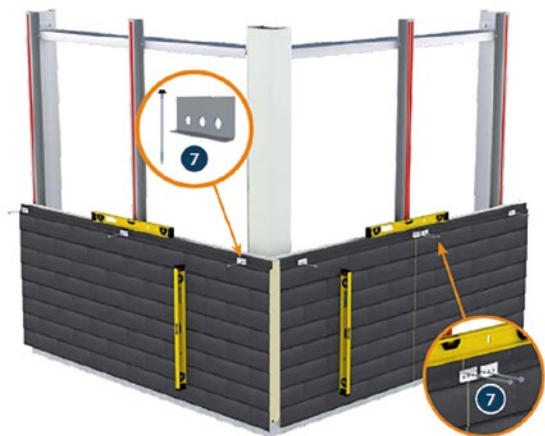


MOUNTING PANELS ON THE WALL

The slate panel is placed in the starter profile (4) and slid into place.



- a** Omega profile
- b** Omega profile
- c** Sealing tape
- d** Start machining
- e** Torx screws (4.8x35)
- f** Slate panel
- g** PURS sealing tape or low-pressure foam



Before the panels in the corner pass over to the profiles for the profiles, fix the corner errors of the corner corner. Once the panels have been installed, this can be assembly. Check the horizontal and vertical selection tool, then fasten it with the screws (7) through the strain dissipating washer ŁB25.

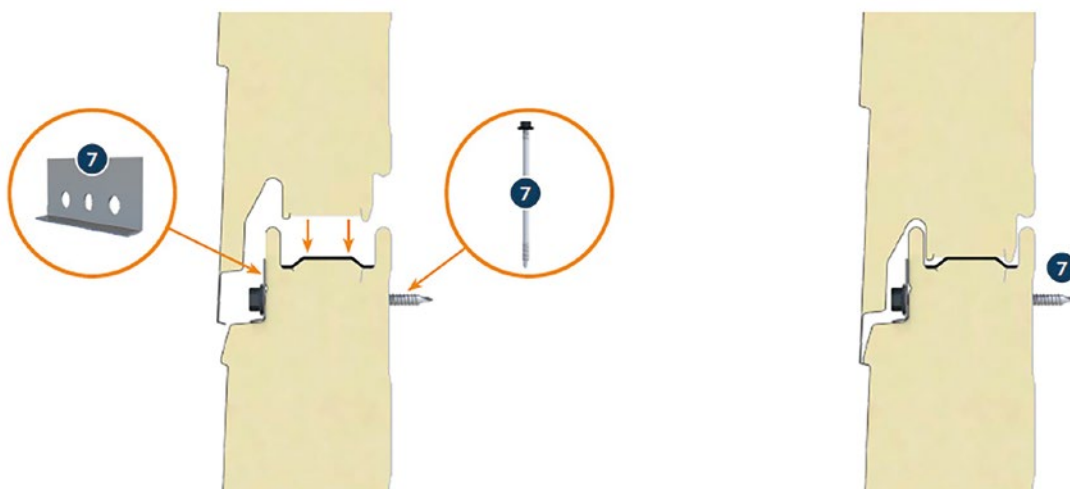
After installing and checking the lower panels, you can start laying the next layers.

MOUNTING PANELS ON THE WALL

It is important to check that the panels are vertically aligned before joining the panels.

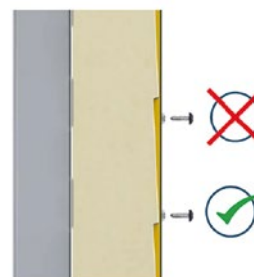
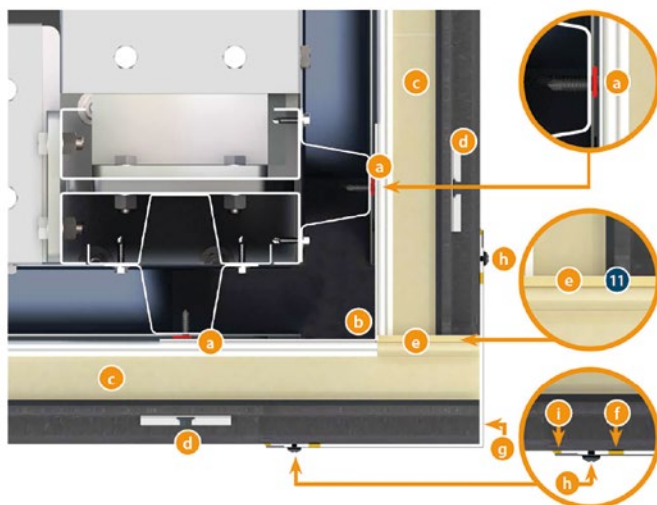


After the top panel is aligned, you can press it down to close the mount. After closing the lock, the panel is secured against detachment by its own weight and by metal screws (7) with ŁB25 washer.



MOUNTING PANELS ON THE WALL

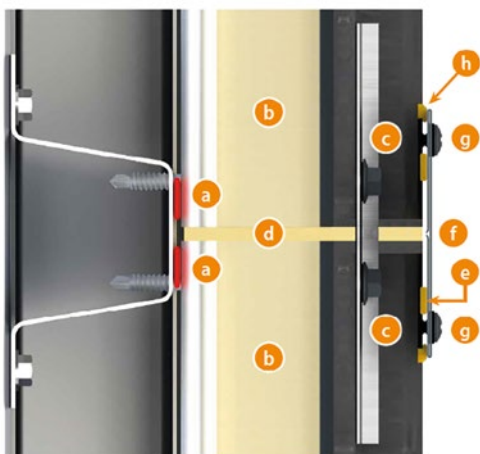
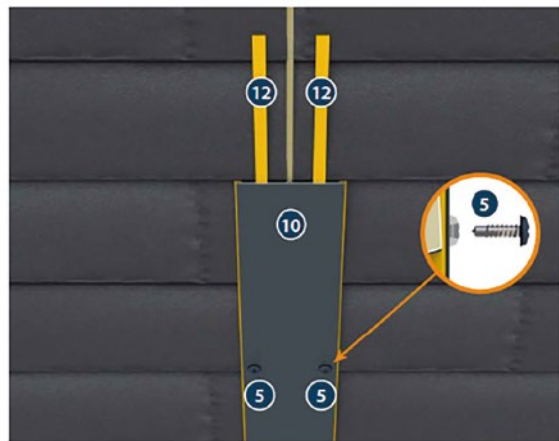
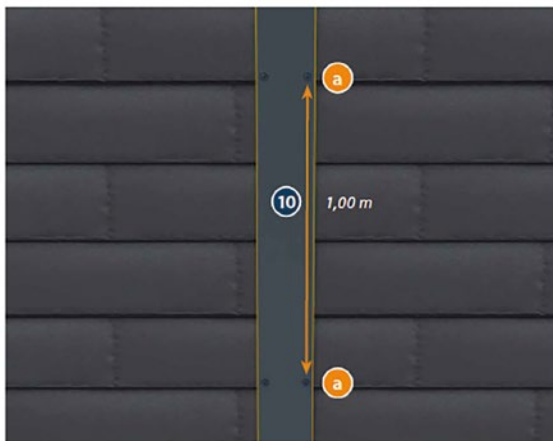
The internal corner flashing (8) is attached to the Omega profiles in the corner of the building with torx screws (5). The panels are then installed all the way to the corner. In order to reduce the risk of thermal bridges, the internal cladding of the panel should be cut approximately 10 mm wide and, using low-pressure foam (11), should be used to ensure continuous thermal insulation of the panel cores in the corner. To make the corner watertight and airtight, when installing the outer corner flashing (9), apply two lines of roofing sealant (12) to the slate panel (6) using two torx screws (5) per meter as shown below. The processing of the outer corner ensures a smooth transition between the walls.



- a** PES self-adhesive gasket Internal
- b** flashing
- c** Slate panel
- d** ŁB25 washer with screw
- e** Low pressure foam
- f** Roofing sealant
- g** External machining
- h** Torx screws
- i** Roofing sealant

MOUNTING PANELS ON THE WALL

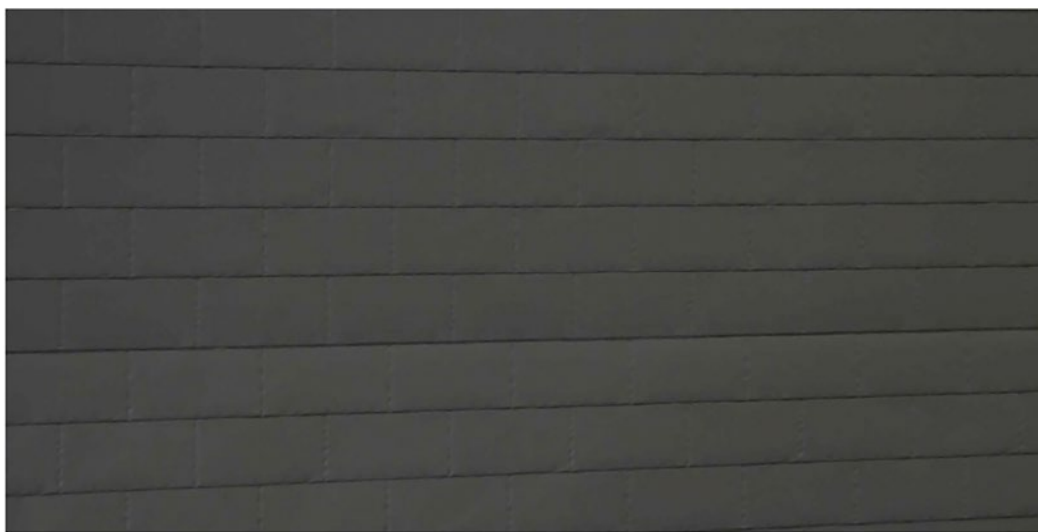
The ends of each panel should be sealed with low pressure foam. The panel joints should be masked by means of a masking strip (10) with applied strips of sealing compound (12). The flashing is is then secured with two torx screws (5) every meter at the designated point (a).



- | | |
|-----------------------------------|---------------------------|
| a PES self-adhesive gasket | e Sealing compound |
| b Slate plate | g Cover strip |
| c £B25 washer with screw | h Torx screws |
| d Low pressure foam | f Sealing compound |

MOUNTING PANELS ON THE WALL

The final effect does not depend on the chosen method of assembly.



| Panel joint detail

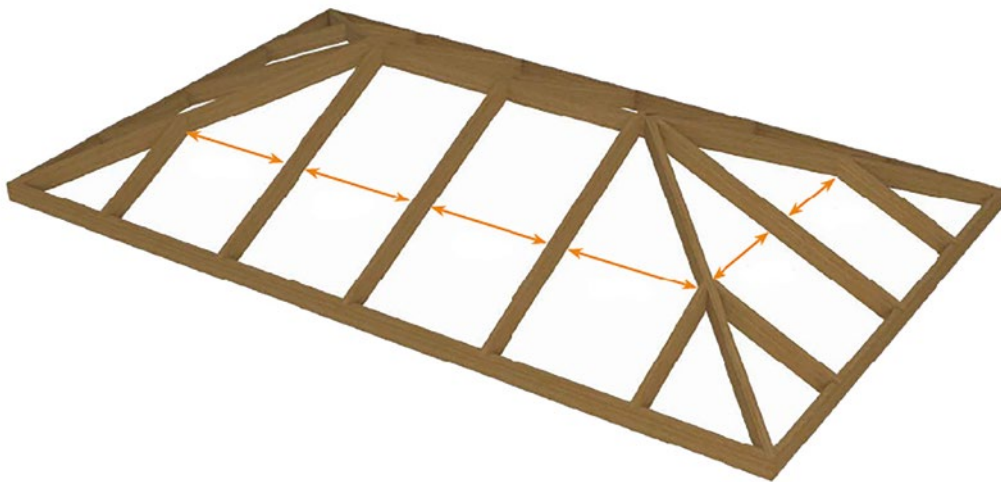


| Front view

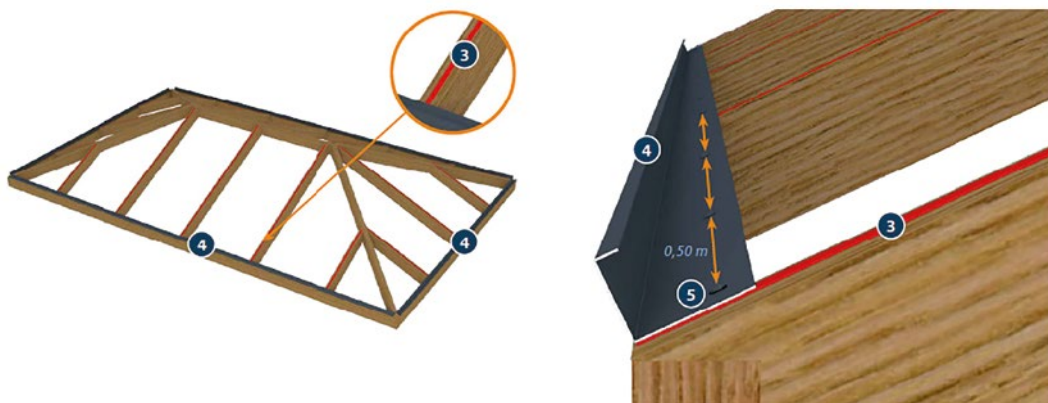


MOUNTING PANELS ON THE ROOF

Mounting the panels on roofs is similar to wall mounting. For the maximum distance between rafter supports, see the table on page 5. The minimum roof slope is 25 ° (or 47 cm/m).



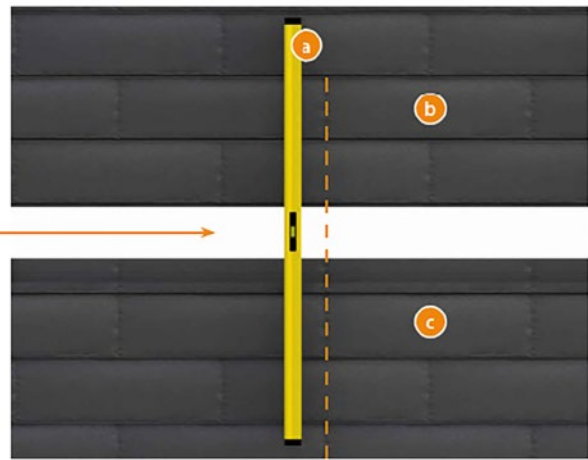
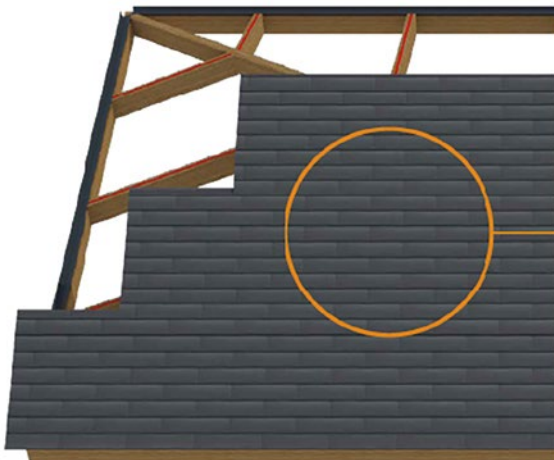
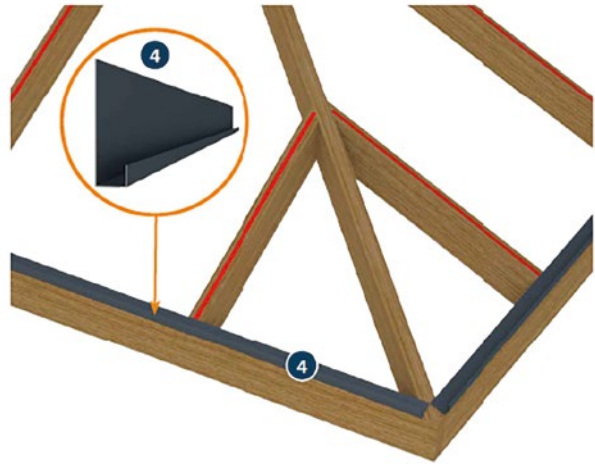
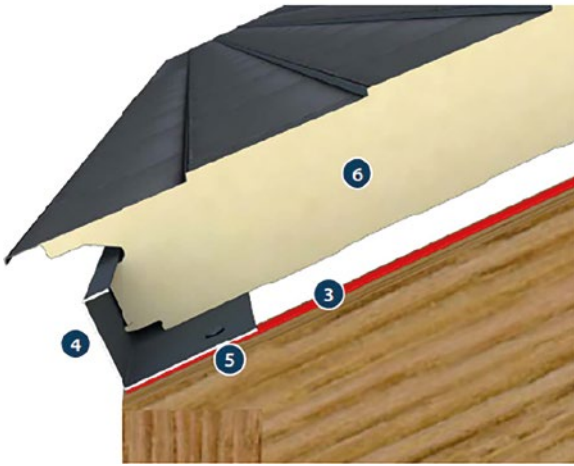
After the truss structure is assembled, the start flashing (4) can be installed. The flashing should be fastened with Farmer screws (5) every 0.50 m, therefore the roof structure should be supplemented or a wall plate added to enable such assembly. Sealing tapes (3) are used to reduce noise transmission between the purlin and the panel.



MOUNTING PANELS ON THE ROOF

The first panel (6) can be installed. Note that the panel's start piece (4) also serves as an eaves trim.

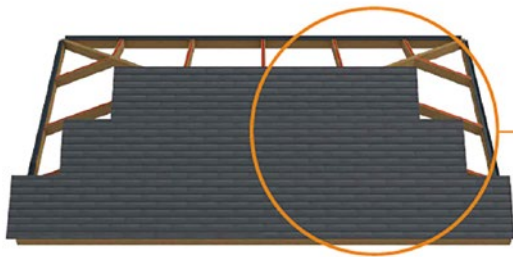
Depending on the type and shape of the roof, the panels will have to be cut. When cutting, it is necessary to take into account the relative position of the panels. Due to the placement of the bracket (4), the corner panel can easily be slid into place and cut to the required size.



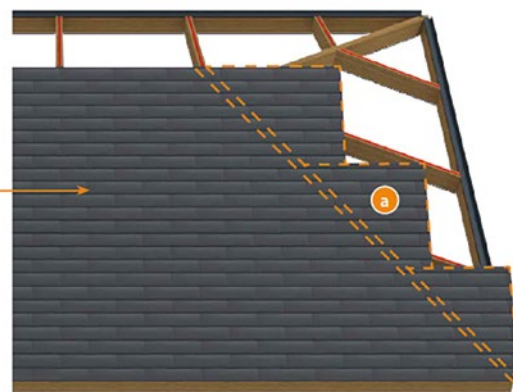
- a** Level
- b** Top panel
- c** Lower (mounted) panel

MOUNTING PANELS ON THE ROOF

Full-length panels are laid on the roof

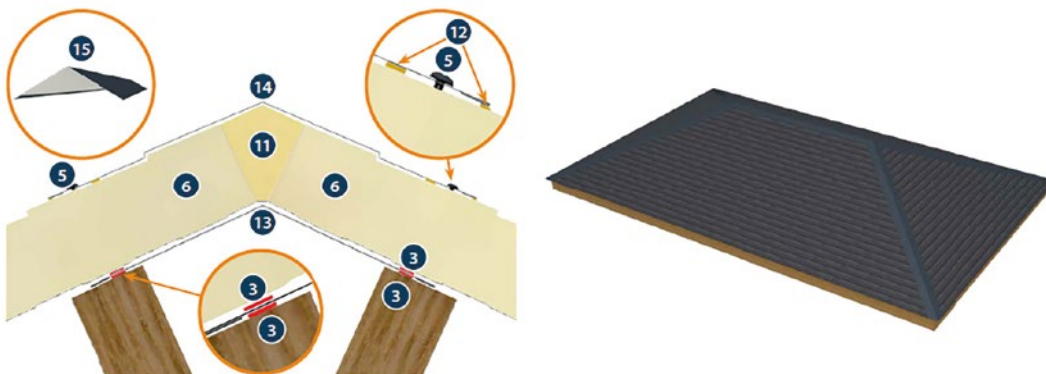


Cutting panels



a Panel cutting line

The internal flashing (13) is mounted on the ridge. It is installed on the PES self-adhesive seal (3). The last roof panels (6) are then installed, and any possible thermal bridge can be eliminated with low-pressure foam (11). To finish the ridge, an external ridge flashing with a slate effect (14) or an external, flat ridge flashing (15) should be used. Mounting with torx screws (5) and the use of sealing compound (12) is the same as for wall mounting. All connections between panels can be finished with appropriate accessories. As with wall mounting, thermal bridges must be sealed.



ACCESORIES



Custom flashing gr. 1.5 mm (1), (2)



PES 3.0x20 tape (30 m / roll) (3)



Initial flashing for a 60 mm panel (4)



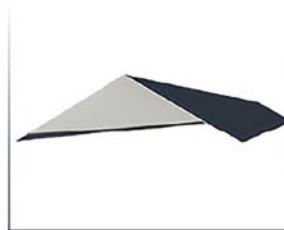
Initial flashing for a 120 mm panel (4)



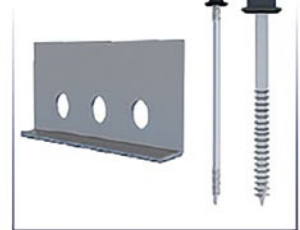
Torx screw (5)



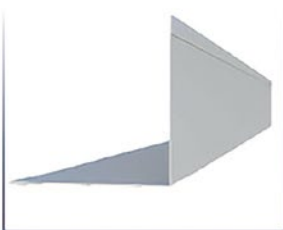
Slate Panel (6)



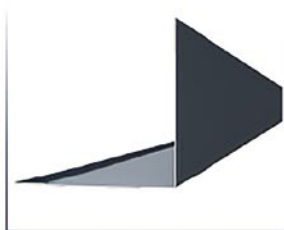
External, flat machining ridge (15)



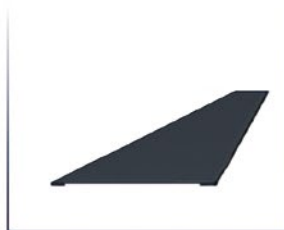
£B25 washer for BTH PLUS (7)



Internal angle color 9002 (8)



Outside corner flashing (9)



Cover strip (10)



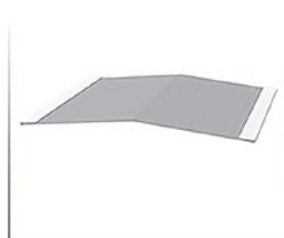
External ridge flashing with slate profile (14)



Low pressure foam (11)

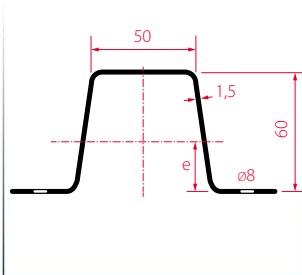


Sealing compound (12)

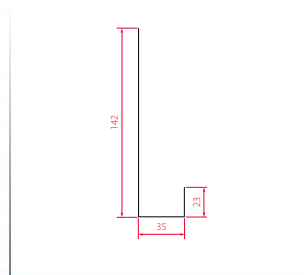


Internal ridge flashing (13)

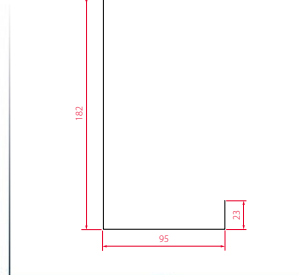
ACCESORIES



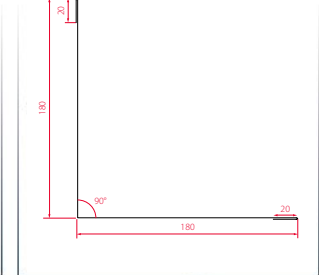
Omega profile



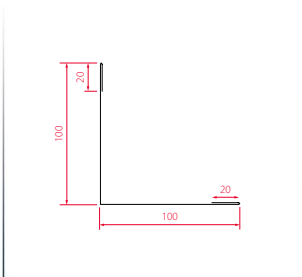
Initial processing for a panel with a thickness of 60 mm



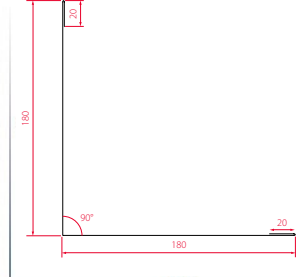
Initial processing for a panel with a thickness of 120 mm



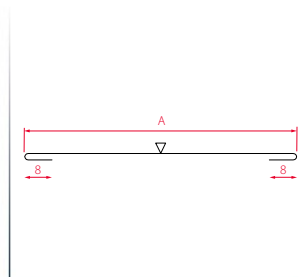
Inner angle



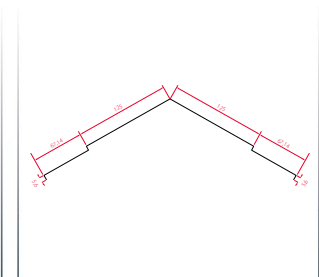
Outer angle



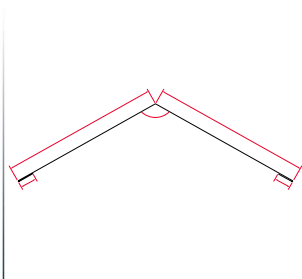
Outer angle



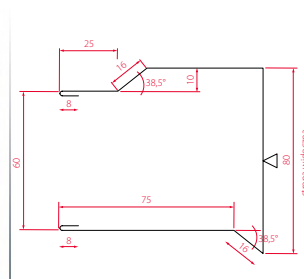
Cover strip



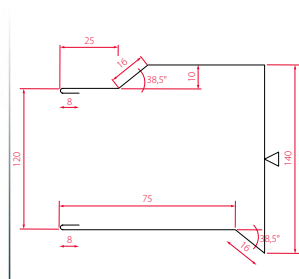
External ridge flashing with a slate profile



External flat ridge flashing



Wind bar for a panel with a thickness of 60 mm



Wind bar for a panel with a thickness of 120 mm



PES 3.0x20 self-adhesive tape

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