



TECHNICAL CATALOG

Sandwich panels with the

- PUR/PIR core
- EPS core
- mineral wool core



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INTRODUCTION

Founded in 1989, Paneltech has been developing high-end products for the Polish construction industry. For thirty years now, Paneltech has combined reliability and highest product quality with timely services and deliveries. We have achieved this by employing our extensive experience and investing in the development of state of the art process lines. This is why, today, we are proud to say that we are one of the leaders on the Polish market of sandwich panels. We have received the support and trust of many clients, both in and outside the country. Our products are exported to nearly 30 countries from all over the world.

Paneltech offers the modern and comprehensive Light Cladding System with sandwich panels. Our regular offer includes the following sandwich panels:

- with the PUR/PIR core,
- with the EPS core,
- with the mineral wool core.

Paneltech has its own machine park, research laboratory and the experienced quality control department thank to which manufactures itself highest-quality sandwich panels, industrial doors and EPS. Apart from these, Paneltech offers also facade cassettes, PIR Soft insulation panels, EPS profiles, EPS roofing paper, XPS, aluminum and PVC joinery, stainless steel products and Hormann gates and reloading systems.



ABOUT THE PRODUCT

SANDWICH PANEL STRUCTURE

The Paneltech sandwich panel is a modern building material composed of two profiled facings made of varnished, galvanized steel sheets and an insulating core placed between them, made of rigid PUR/PIR foam, mineral wool or EPS.

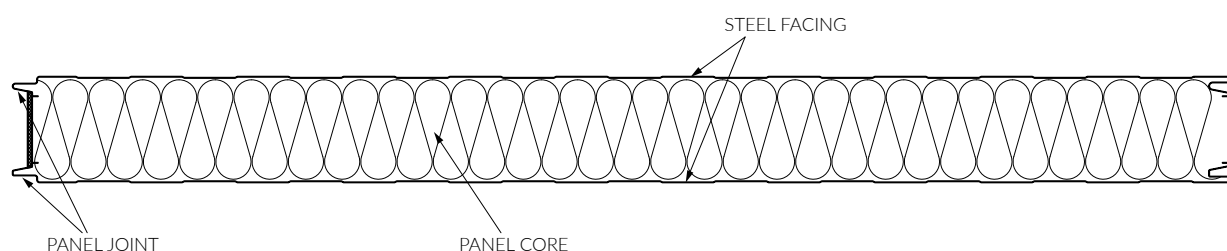
The steel facing is made of steel sheet of 0.4 to 0.6 mm thickness, covered with organic protective coatings, both sides galvanized, which complies with the requirements of PN-EN 10346. The standard panel coating is finished with 25 µm thick polyester varnish, which guarantees a 15 - 20-year period of exploitation. Other coating materials, intended for internal and external facings exposed to aggressive environments are also available. To increase their stiffness and aesthetics, facings receive their characteristic profiling, available in several patterns. Panel joints are shaped to guarantee high tightness, ease of installation and the possibility of application additional sealing mass during installation, as to prevent the infiltration of gases and improving the panel's water-tightness properties.

The core of the panel is made of an insulating and structural layer which, depending on the material used, offers different physical and mechanical properties. Polyurethane-core panels are characterized by very good thermal insulation properties and strength (PUR) as well as very high fire resistance properties (PIR). Panels with a mineral wool core have very good fire resistance properties. In turn, EPS-core panels are characterized by very good thermal insulation properties and are lighter, compared to other panels.

A sandwich panel cladding is not only an excellent thermal insulation, but also provides protection against weather conditions. Paneltech sandwich panels are offered in four types, i.e. wall panels with visible joints, wall panels with hidden joints, roof panels and coldroom panels with various thicknesses and colors, offering wide range of applications in the construction industry, both in typical and in innovative investments. Our panels are manufactured in various lengths, from 2.00 to 16.00 m and are custom-cut in a production process at a straight angle. Selecting the finishing color of the facing, the possible heating of the cladding by sun rays should always be considered as it can entail additional effects which can potentially change the load-bearing properties and the aesthetics of the product. More information about on panel parameters, available facing profiles, colors and coatings, can be found in the following catalog.

The technical documentation for the panels was drawn up in accordance with PN - EN 14509. Tests of the sandwich panels were carried out in renowned laboratories, such as the Building Research Institute, Fire Research Department in Warsaw, notification number 1488, in the Fires Batizovce Slovakia Research Facility, notification number 1396 and others. Based on the results of these tests, Paneltech as the producer using conformity assessment system No. 3, issued the declarations of performances in accordance with European norm and labeled it with CE mark.

SANDWICH PANEL CROSS-SECTION



SANDWICH PANEL APPLICATIONS

Paneltech sandwich panels can be used to build such partitions as: external walls, internal walls, ceilings and roofs. They are widely applied in the construction of, among others:

- industrial production, commercial and storage halls,
- office and service complexes,
- containers,
- agricultural and food industry facilities,
- coldrooms and freezerrooms,
- roofing.

Sandwich panels are high-quality, light and durable structural elements. The most prominent advantages of self-supporting sandwich panels are:

- high mechanical strength,
- excellent thermal insulation properties,
- high tightness of wall and roof panel joints against heavy rain,
- high air and vapor tightness of wall and roof panel joints,
- easy and quick installation,
- proportionally low investment cost, compared with classic building methods,
- high aesthetics and diversity of facing colors and textures.

Sandwich panels should meet the technical parameters of the building project, and should be selected according to their:

- intended purpose (wall, roof, lock type),
- thermal insulation properties (U_c),
- fire resistance parameters (EI, not spreading the fire, Broof)
- mechanical strength,
- anti-corrosive properties of the facing,
- other (cladding type, color, module, aesthetics).

Our wide assortment of panel thicknesses and core types fulfills the stringent requirements of current construction regulations, for instance, the U_c thermal transfer coefficient for buildings with room temperature of $t \geq 16^\circ\text{C}$ is $0.23 \text{ W/m}^2\text{K}$ for external walls and $0.18 \text{ W/m}^2\text{K}$ for roofs. Until 01.01.2017, these were, respectively 0.25 and 0.20. As of 01.01.2021 it will be respectively 0.20 and 0.15.

Panels used in food industry facilities, for orientation purposes it can be assumed that the minimal thickness of the PUR-CH panel in a freezerroom relative to a ΔT temperature difference between the temperatures inside and outside the freezerroom, maintaining the recommended thermal stream density of up to 10 W/m^2 is:

- for $\Delta T = 50^\circ\text{C}$ - 120 mm
- for $\Delta T = 70^\circ\text{C}$ - 160 mm
- for $\Delta T = 80^\circ\text{C}$ - 180 mm
- for $\Delta T = 90^\circ\text{C}$ - 200 mm

Wall panels can be installed both vertically and horizontally. Construction of the roof panels let them to be installed on roofs with a minimum slope 5%, when the panel is the one element from the eaves to the ridge, and there is a minimum slope 9%, when the panels are connected in length by transverse joint (the length of the slope is greater than the recommended production length of the panel).

We know the needs and the requirements of our clients, which is why we can provide complex consultancy and technical support services devoted to light cladding systems. We have manufactured sandwich panels for more than 25 years. In this time, we have been able to develop an expert and experienced quality control department, and obtain an ISO certificate in confirmation of our excellent quality.

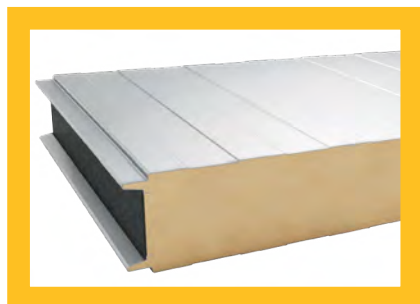
PANELTECH SANDWICH PANEL NOMENCLATURE AND TYPES

Paneltech sandwich panels are marked to the according scheme:

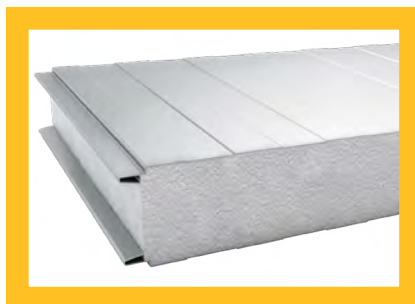
PW PUR-S 100.1130 0,5/0,4 SP25/SP25 9002/9002 MF/L

PW	PUR	S	100	1130	0,5/0,4	SP25/SP25	9002/9002	MF/L
commercial name	panel core	type	thickness	modular width	ext./int. facing thickness	ext./int. facing	ext./int. color	profile

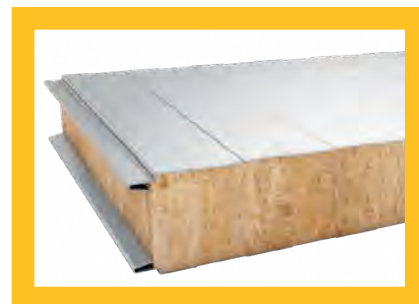
Panels are available with three core types: polyurethane/polyisocyanurate (PUR/PIR), EPS (PWS) and with mineral wool (PWW).



polyurethane/polyisocyanurate core (PUR/PIR)



EPS core (PWS)



mineral wool core (PWW)

OUR PRODUCT OFFER INCLUDES THE FOLLOWING SANDWICH PANELS:



wall sandwich panels with visible joints

PW PUR-S / PIR-S, PWW-S / PWW-S LITE, PWS-S



wall sandwich panels with hidden joints

PW PUR-SU / PIR-SU, PWW-SU / PWW-SU LITE, PWS-SU



coldroom sandwich panels

PW PUR-CH / PIR-CH



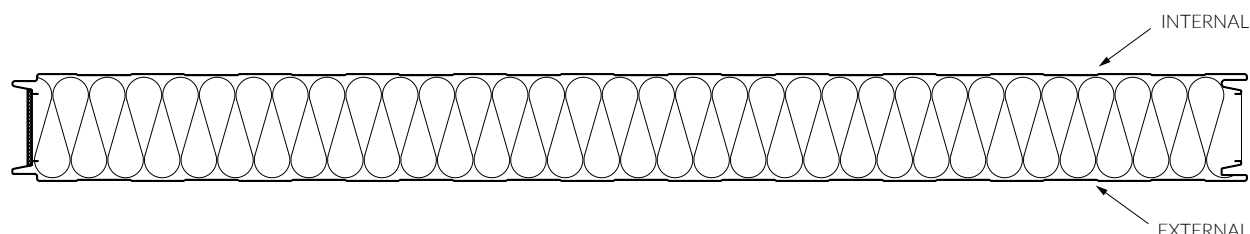
roof sandwich panels

PW PUR-D / PIR-D, PWW-D, PWS-D

AVAILABLE PROFILATION TYPES

The purpose of sandwich panel facing profilation is to improve the aesthetics of the panel and increase its stiffness. Depending on the panel type, different profilation types are available.

Profilation depth is ca. 1 mm. The exception to this is the external roof facing which has an individual trapezoidal T profilation of ca. 2 mm in total depth.



AVAILABLE EXTERNAL PROFILATION :

L	linear
MF	microwave
ML	microlinear
MR	microgroove ²⁾
G	smooth ¹⁾
T	trapezoidal (for roof panels only)

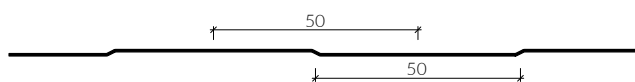
AVAILABLE INTERNAL PROFILATION:

L	linear
R	groove ¹⁾
G	smooth ¹⁾

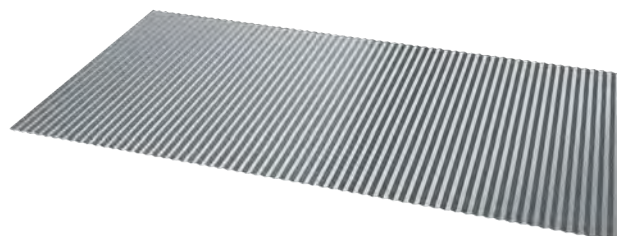
¹⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D

²⁾ applies to Paneltech sandwich panels with PUR and PIR cores. For more information concerning MR microgroove profilation, see the technical product cards

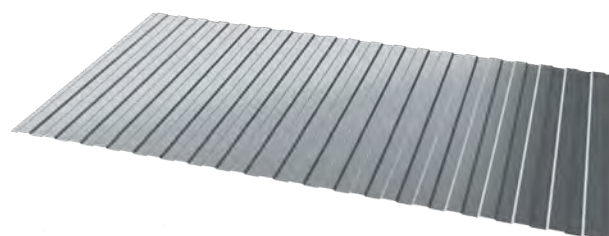
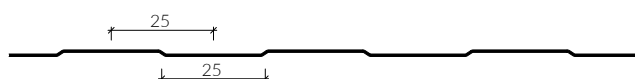
L - LINEAR



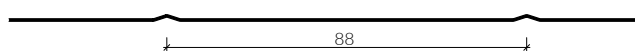
MF - MICROWAVE



ML - MIKROLINEAR



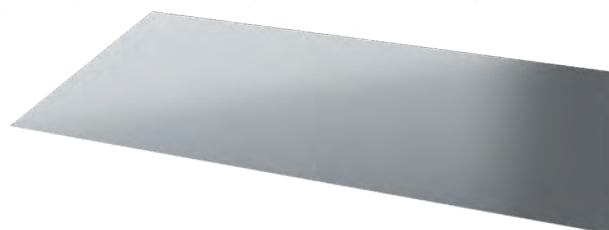
R - GROOVE



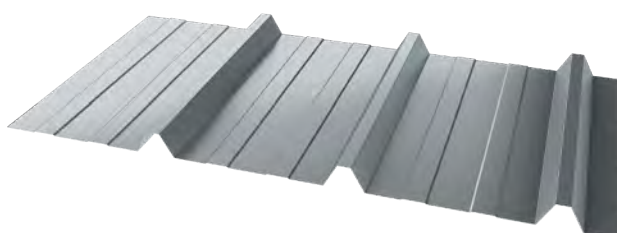
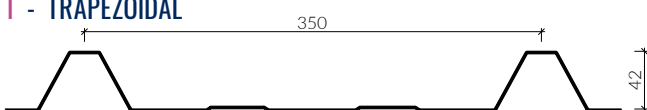
MR - MICROGROOVE



G - SMOOTH



T - TRAPEZOIDAL



AVAILABLE RAL COLORS

All external Paneltech sandwich panel facings are available in a wide palette of colors matching the RAL color standard markings. The offer of SP 25 polyester facings was divided into standard, typical and untypical. The inventory of the most popular standard colors are kept at a level which guarantees the complete and timely processing of all orders. Typical colors supplement the basic color palette. However, despite their high availability, they can extend the period to complete orders and can involve additional charges. At individual requests, we can provide panels with untypical colors. Atypical colors are however offered at individually approved commercial conditions.

The color of the external facing influences the self-heating temperature of the panel surface, when exposed to sun rays, which can result in thermal expansion properties, which, in turn, affect the strength of both the panel and the facing.

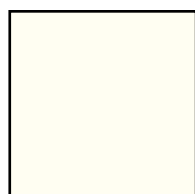
There are three groups of sandwich panel facing colors:

Group I – very bright colors,

Group II - bright colors,

Group III – dark colors.

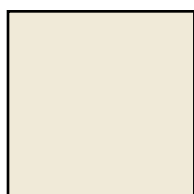
STANDARD COLORS



9010



9002



9001



7035

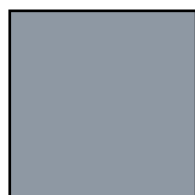


9006

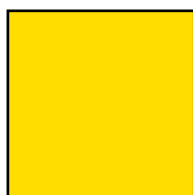


1015

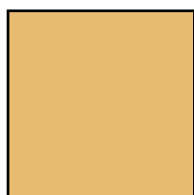
TYPICAL COLORS



7040



1021



1002



3000



3011



8017



5012



5010



6029



9007



7024



7016

The colors presented in the catalog are for reference only. Steel sheet tones may differ, depending on the material batch and the manufacturer. Paneltech Sp. z o.o. therefore admits the possibility of occurrence of color differences between the samples presented and the colors of materials supplied.

We recommend using very bright and bright colors (color groups I and II). Further we strongly advise against using wall panels with dark facing in multiple-span systems, due to the possible facing deformations. Dark sandwich panel facings have very good heat absorption properties, which can cause local facing deformations in periods of high insolation. Therefore, panels should have possibility for the thermal movements and their length should be limited. This effect

does not have influence on the performance characteristics of the panel. The general rule is that panel length should be selected depending on the color and the technological possibilities, as presented in the table below.

Internal sandwich panel facings are available in two basic colors: RAL 9002 and 9010. Other colors available on request.

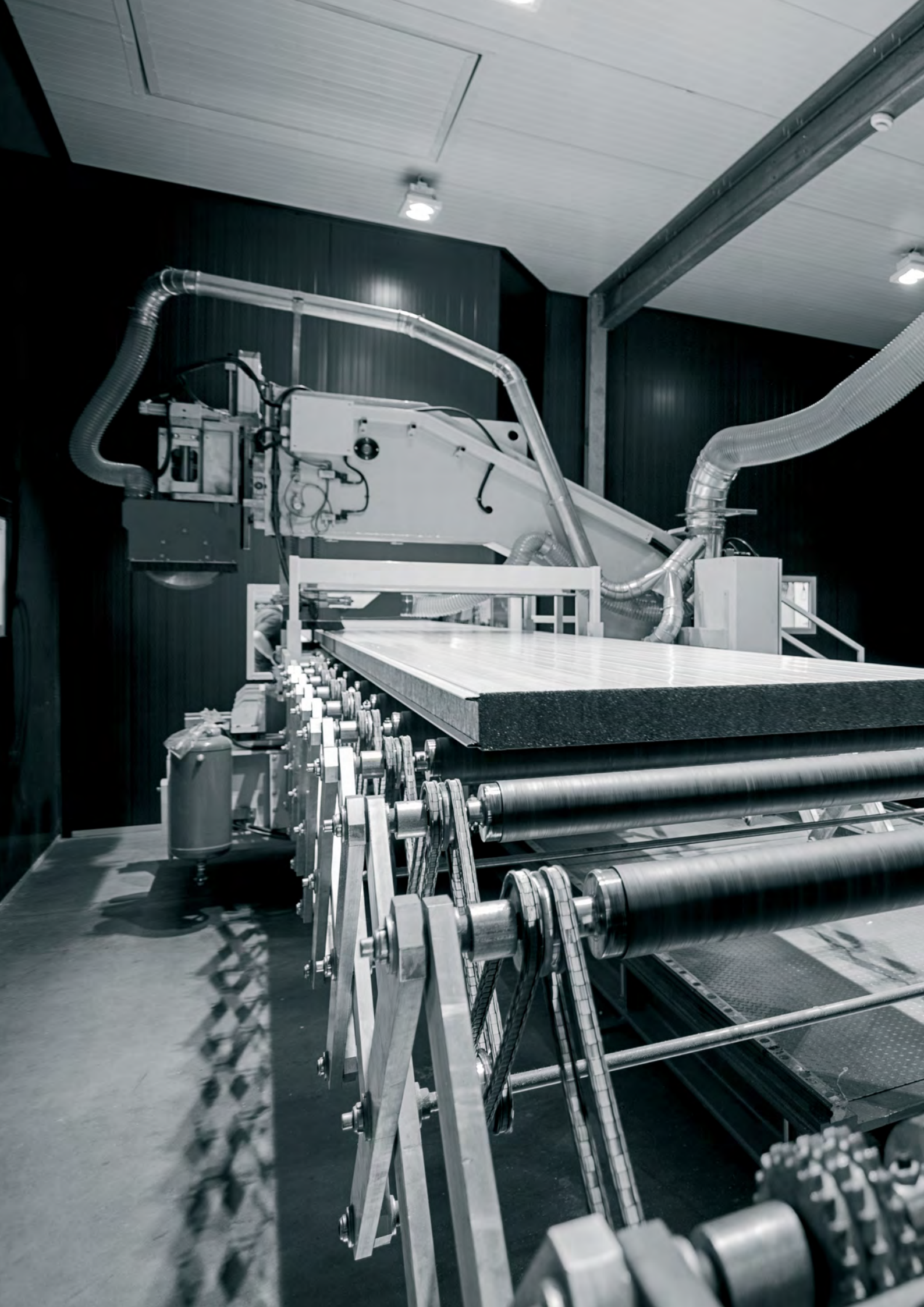
COLOR TABLE FOR SANDWICH PANEL FACINGS

Color group / surface self-heating in the summer	Color number as per the RAL system	Reflectance coefficient for the RG facing [%]
I – very bright colors, temperature up to 55°C	1015, 1018, 7035, 9001, 9002, 9010	75-90
II – bright colors, temperature up to 65°C	1002, 1007, 1021, 2008, 5012, 6011, 6018, 9006, 7040	40-74
III – dark colors, temperature up to 80°C	3000, 3005, 3011, 3016, 5010, 5011, 6003, 6005, 6011, 6029, 7016, 7024, 8017, 9007	8-39

Any colors which are not listed above should be qualified in an applicable color group based on the reflectance coefficient value.

TABLE OF RECOMMENDED PANEL LENGTHS, DEPENDING ON THE COLOR OF THE FACING AND THE TECHNOLOGICAL POSSIBILITIES

PANELTECH sandwich panel type	thickness [mm]	group I - v. bright [m]	group II - bright [m]	group III - dark [m]
PW PUR-S / PIR-S	40 ÷ 80	2 ÷ 10	2 ÷ 9	2 ÷ 7
PW PUR-S / PIR-S	100 ÷ 120	2 ÷ 15,8	2 ÷ 9	2 ÷ 7
PW PUR-SU / PIR-SU	60 ÷ 80	2 ÷ 10	2 ÷ 9	2 ÷ 7
PW PUR-SU / PIR-SU	100 ÷ 120	2 ÷ 15,8	2 ÷ 9	2 ÷ 7
PW PUR-CH / PIR-CH	120 ÷ 200	2 ÷ 15,8	2 ÷ 9	2 ÷ 7
PW PUR-D / PIR-D	40 ÷ 160	2 ÷ 16	2 ÷ 9	2 ÷ 7
PWS-S	50	2 ÷ 9	2 ÷ 7	2 ÷ 7
PWS-S	80 ÷ 200	2 ÷ 10	2 ÷ 7	2 ÷ 7
PWS-SU	80 ÷ 150	2 ÷ 10	2 ÷ 7	2 ÷ 7
PWS-D	80 ÷ 200	2 ÷ 10	2 ÷ 7	2 ÷ 7
PWW-S / PWW-S lite	60 ÷ 160	2 ÷ 10	2 ÷ 7	2 ÷ 7
PWW-S / PWW-S lite	180 ÷ 200	2 ÷ 7	2 ÷ 7	2 ÷ 7
PWW-SU / PWW-SU lite	60 ÷ 160	2 ÷ 10	2 ÷ 7	2 ÷ 7
PWW-SU / PWW-SU lite	180 ÷ 200	2 ÷ 7	2 ÷ 7	2 ÷ 7
PWW-D	80 ÷ 160	2 ÷ 10	2 ÷ 7	2 ÷ 7
PWW-D	180	2 ÷ 7	2 ÷ 7	2 ÷ 7





TRANSPORT AND STORAGE RECOMMENDATIONS

PACKING

Sandwich panels are packed during production process into packages laid on wooden pallets (mineral wool core panels) or on styrofoam bases, and wrapped in protective foil. Two documents are enclosed to each package: the product label and the unloading manual. The maximum pack dimensions are 16 x 1.20 x 1.30 m (LxWxH).

TRANSPORT TO THE CONSTRUCTION SITE

The panel delivery date will be set after considering all stages of the production process. The number of panels depends on the type and thickness. 2-3 packet layers can be transported, depending on the panel type. By standard, panels are transported by trucks: the width of flat cargo space is 2.40 m, height is 2,60 m, the cargo should be loaded on both sides and fastened using tie down straps. Individual packages should be secured using wooden or plastic pads. Packages must be loaded onto cars by Paneltech staff, with the active participation of the driver, who is responsible for fixing and securing the panels to the car and periodically controlling the cargo during transport.

UNLOADING AT THE CONSTRUCTION SITE

Unloading should be carried out for products in original, factory packaging only, using cranes and handling devices intended for horizontal lifting. Crane devices or forklifts are recommended for lifting packets. Packets of 6 m and more should be transported using two forklifts or using tie down straps and an H cross-beam, preventing the straps from clamping down on the packet. With any reservations to the cargo, the recipient or the carrier are obligated to include place a suitable note on the delivery note and on the shipping document.

STACKING AND STORAGE OF SANDWICH PANELS

Packages on factory bases should be stored on an even, slightly inclined surface, and should be secured against the weather conditions and protected from soiling. Time of storage in factory packaging should not exceeded 4 weeks, and, exposed to weather conditions, protective foil coatings should be unwrapped at +5 to 60 °C up to 2 weeks.

PW PUR / PIR SANDWICH PANEL CONTENT IN A PACKET

	S	SU	CH	D
Thickness [mm]	maximum number of panels in a package [pcs.]			
40	14	-	-	18
60	18	18	-	14
80	14	14	-	10
90	-	-	-	10
100	11	11	-	8
120	9	9	9	8
160	-	-	7	6
180	-	-	6	-
200	-	-	5	-

EPS CORE SANDWICH PANEL CONTENT IN A PACKET

	S	SU	D
Thickness [mm]	Maximum number of panels in a package [pcs.]		
50	22	-	-
80	14	14	10
100	11	11	8
120	9	9	8
150	7	7	6
200	5	-	5

MINERAL WOOL CORE SANDWICH PANEL CONTENT IN A PACKET

	S	SU	D
Thickness [mm]	Maximum number of panels in a package [pcs.]		
60	17	17	-
80	13	13	10
100	10	10	8
120	9	9	6
140	7	7	6
160	6	6	6
180	6	6	4
200	5	5	-

1. Quantity of panels in the packages may differ from the above given due to the optimal use of loading height – 2,65 m.
2. A maximum of two full packages can be loaded onto a truck.
3. Non-standard packaging is possible on client's request, after the technological possibilities are approved by a Paneltech Customer Service employee.

INSTALLATION RECOMMENDATIONS

PREPARATORY WORKS

Sandwich panels, as cladding elements, are fixed to structures in precisely determined and prepared points. This contributes to producing a highly aesthetic effect and prevents steel facings from deforming. Before proceeding to any installation works, check for: the accuracy of construction of the supporting structure and its compliance with the design, the maximum permissible support span (in accordance with Paneltech characteristic loading tables) and the condition of the panel facing. Sandwich panels with visible joints (PW PUR-S / PIR-S) have protective foil with arrows on the edges. The arrowhead points to the external facing of the panel.

PANEL CUTTING

Sandwich panels are produced to a specific length. All cutting works should be carried out using fine-tooth sawing machines or circular saws for metal. Angle grinders or any other tools generating high temperatures when cutting mustn't be used, as they can destroy the organic coatings protecting sheet metal against corrosion. After cutting the panels, their surface should be cleaned out of metal filings.

SELECTION OF FASTENERS

By standard, sandwich panels are fixed to structures using steel fasteners passing through two steel facings of the panel. Location of the fasteners should be set in accordance with the current Paneltech technical catalog. The number of fasteners, the structural span and the width of the supports are defined in panel characteristic loading tables. For instance: the PW PUR-S 100 0.5/0.5 very bright panel (group I), installed in the single-span layout and with characteristic wind loading of $\pm 0.5 \text{ kN/m}^2$ should be fixed using two fasteners to each support of 40 mm in width and with a span of up to 7.49 m.

The fasteners should be selected on the basis of:

- the type and thickness of the construction, to which the sandwich panel is fixed,
- the type and the thickness of the sandwich panel in the point of the mounting,
- the mechanical, physical and chemical properties of the fastener.

Fasteners selection depending on the type and thickness of the construction, to which the sandwich panel is fixed:

- when the panel is fastened to steel profiles using a self-drilling screws in a single technological cycle, in which the hole is drilled and threaded (e.g. when installing on thin-wall, steel profiles using fasteners with a drill up to 6 mm and with a loose thread), when the panel is fastened to hot-rolled steel profiles of 3 to 12 (16) mm in thickness, using fasteners with a 12 or 16 mm drill and a tight thread,

- when the panel is fastened to steel profiles using a self-drilling screws in two technological cycles, by executing a preliminary hole in the sandwich panel and in the construction, and by placing the fastener in the preliminary hole while threading the other hole (e.g. when the panel is installed on hot-rolled steel profiles, commonly of 3 to 12 mm in thickness, using long-drill and tight thread fasteners),
- when the panel is fastened to wooden profiles using a self-tapping screws in a single technological cycle, during which the hole is drilled and threaded. When panels are installed on hard wood, a preliminary hole must be drilled,
- when the panel is directly fastened to concrete elements using a self-tapping screws in two technological cycles, by executing a preliminary hole in the sandwich panel and in the construction, and by placing the fastener in the preliminary hole while threading the other hole,
- when the panel is fastened to concrete elements using a self-drilling screws with a polyamide plug in two technological cycles, by drilling a hole in the sandwich panel and in the construction, and by placing a polyamide plug and the fastener in the element of the construction.

Fasteners selection depends on its mechanical, physical and chemical properties:

- the characteristic tensile strength of the fastener with 19 mm metal washer and EPDM gasket should be 2.20 kN or higher (the calculated strength should be 1.65 kN or higher),
- fasteners made of stainless steel or polyamide fasteners with screws made of carbon galvanized steel are characterized by lower thermal conductivity,
- fasteners made of stainless steel or polyamide fasteners with screws made of carbon galvanized steel are characterized by higher anti-corrosive properties.

GUIDELINES FOR PROPER FASTENERS ASSEMBLY

- specialized electric tools should be used for installation,
- the diameter and the depth of the preliminary hole in the substrate should meet the requirements of the fasteners manufacturer,
- each fastener should be installed perpendicularly to the construction,
- after the fastener is installed, the EPDM gasket from the washer should seal the connection – the fastener must not be screwed in too tight or too loose in order not to damage the washer,
- the minimum distance of the fastener from the cut edge of the panel should be 30 mm,
- use self-drilling Ø4.8 screws with washers with EPDM gaskets to connect the upper facings of roof panels,
- after installing all fasteners, clean the surface of the panel to remove all metal filings.

PANEL TRANSPORT AT THE CONSTRUCTION SITE

Use vacuum lifters (e.g. the Viavac vacuum lifter) or other methods which do not cause bending of the panels. Vacuum lifter should be selected according to the panel type.

ASSEMBLY ELEMENTS AND FLASHINGS

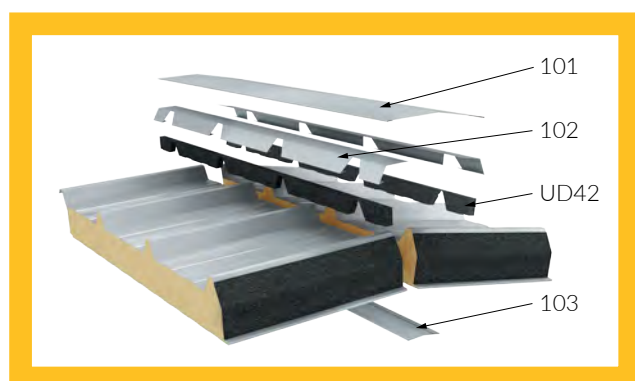
The Paneltech Light Cladding System requires the use of supplementary elements, custom-designed for roof panels and for panels with hidden joints. The correct installation of roof panels (type D) in the ridge requires the use of a UD42 roof seal, the flashing No. 102 roof ridge one for each panel. For closing of the trapeze core the Z42 roof end cap (3 pcs. per panel) should be used.

Using the SU washer is recommended in order to install wall panels with hidden joints to the construction (type SU).

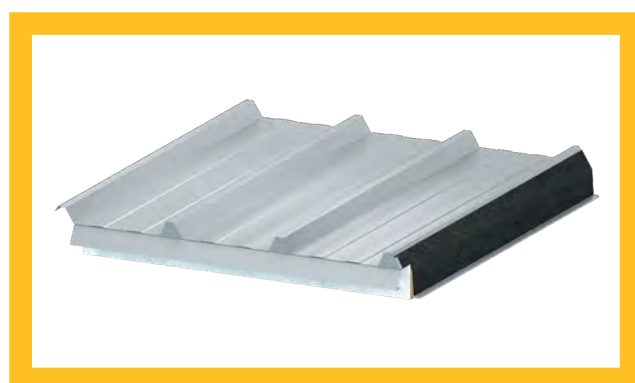
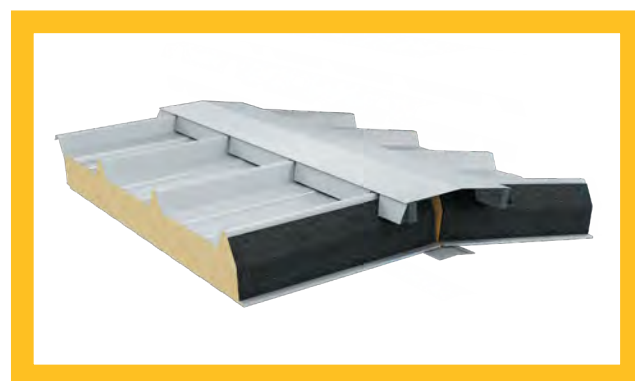
Flashings are used as aesthetic finishing to a sandwich panel cladding. Plus, they provide additional protection against the weather. Drawings of standard flashings are presented in a separate catalog. The shape of individual elements can be modified, keeping the rules of building art. Self-drilling Ø4.2 screws with flat heads, self-drilling Ø4.8 screws with a washer with an EPDM gasket (e.g. roof elements), Ø4.2 blind rivets are used to install the flashings.

To obtain higher water-tightness properties of the cladding, sealing mass or tape can be applied in between flashings and panel facings or other cladding elements. There is no possibility during production process to make additional panels cutting, such as: cutting the window/doors/gate openings, cutting slants, cutting the panels on specific width. Above mentioned are carried out at the building site by assembly company.

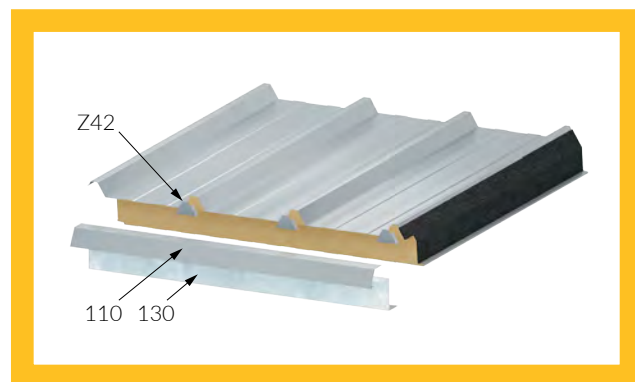
Sealant material should meet project design requirements, i.a. thermal insulation, tightness and fir resistance.



panel joint at the ridge



guttered eaves



PANELS ASSEMBLY

Installation of the panels should be carried out according to the project design, the Sandwich Panel Assembly Instruction (appendix 3 to the General Sales Conditions, available at www.paneltech.pl), drawings from the Paneltech Technical Catalog and applicable health and safety regulations. The designer of the construction is in charge of applying specific technical solutions in the light cladding systems made of sandwich panels. Technical solutions deviating from those presented above are permitted, provided that the general rules of the building art are kept.

When laying panels symmetrically (type S, CH), make sure not to confuse the external side with the internal one, since this will result in mismatched facing tones on the facade. Taking panels from different packages and different production periods to execute the cladding of a single wall can have a similar result.

The structure of the panel joint allows for applying a plastic mass at the stage of installation in between the steel parts of the lock. Depending on the panel type, its application and the type of the mass, the purpose of the seal is to limit air, water permeation and secure the desired fire resistance and hygiene parameters. Detailed information was included next to the panel types. During installation, make sure to maintain the continuity of thermal insulation at the joint of insulating cores and fill free spaces with polyurethane foam or an expanding seal. To even out the pressure between panels, use dedicated canvas belts with buckles. The opening in the lock of the steel facing should fit in the tolerance for a given panel type. Keep an dilatation joint between individual facings of ca. $10 \div 20$ mm at the joint of cutted panel edges and around walls and roofs. The roof panel installation method is presented in drawings in this catalog.

Suitable footwear which does not scratch the panel surface should be worn during installation works. All sealing works must be carried out at 4°C and higher. Installation should not be carried out in adverse weather conditions, such as rain, snow, icing, strong wind, limited visibility, and when ambient temperatures exceed 28°C, or when the panels are very hot.

SANDWICH PANELS OVERLAP CUTTING

Our production line is capable of cutting internal facings both on roof and wall panels. Overlaps can be performed at the length of 50 to 250 mm (every 10 mm). We also offer the possibility of applying additional foil on the facade facing (external), from the side of the core, to prevent the adhesion of the PUR/PIR foam to the sheet metal (thanks to the foil, to remove the core in the place of overlap cut). The summary table below presents the minimum panel lengths for overlaps cuttings.

Overlap length [mm]	Minimum panel length [mm]
50-100	2800
110-250	2800 or 4000 with antiadhesive foil

Ordering roof panels with an overlaps (PP right overlap cut or PL left overlap cut), Paneltech will cut the lower facing and will notch a part of the core. To perform the ultimate cut, remove the cutted lower part of the facing, including the notched insulating core. Perform this before installation.

MARKING AND EXAMPLES OF OVERLAP CUTTINGS

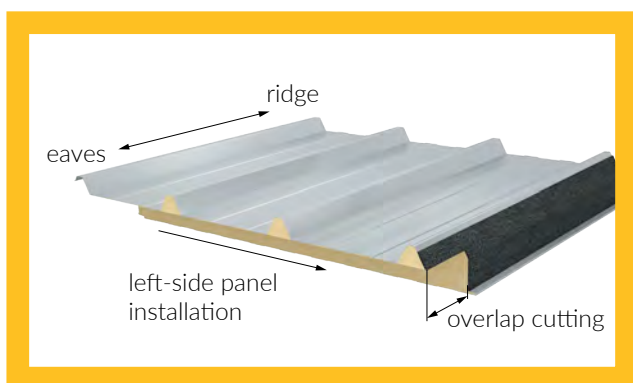
Marking of roof panels, longer than 2800 mm, is supplemented with additional information about direction and length of the overlap cutting. No additional information means that there is no overlap cutting.

Example: PW PUR-D 120.1050 0,5/0,4 SP25/SP25 9002/9002 T/L PP50, where:

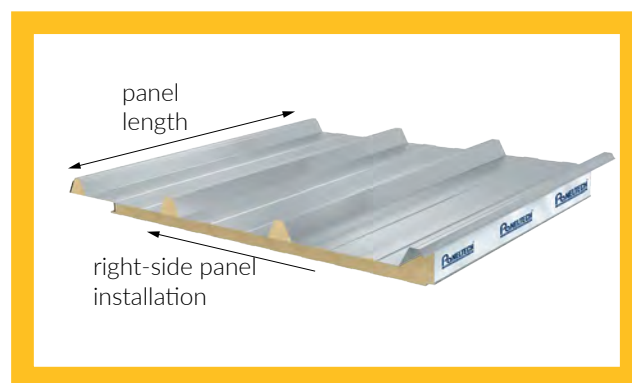
PP – right overlap cut

PL – left overlap cut

50 – 250 – length of the overlap cutting in mm



left-hand edge cut of a roof panel



right-hand edge cut of a roof panel

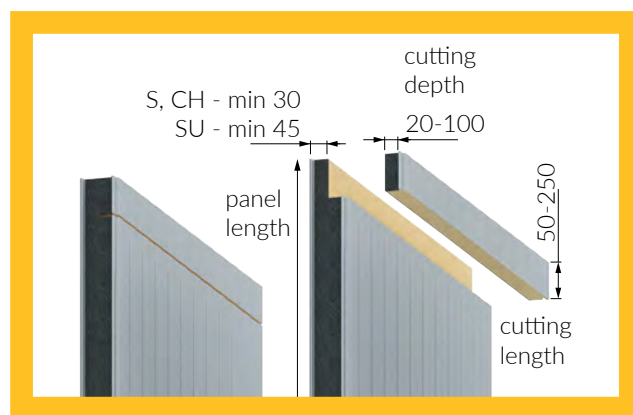
Marking of wall panels, longer than 2800 mm, may be supplemented with additional information about overlap cutting of internal facing.

Example: PW PUR-CH 200.1130 0,5/0,5 SP25/SP25 9002/9002 MF/L PS200x100, where:

PS – wall overlap cutting

First numerical value – length of the overlap cutting 50 – 250 mm

Second numerical value – depth of the overlap cutting 20 – 100 mm



wall panel overlap cutting.



PROTECTIVE COATINGS OF STEEL FACINGS

SP 25

Polyester is a universal coating used both indoors and outdoors. The coating is used in regions with hardly aggressive environments. It is intended for outdoor atmospheres with a corrosion category up to C3 and for indoor applications, when exposed to A1 environments.

PU

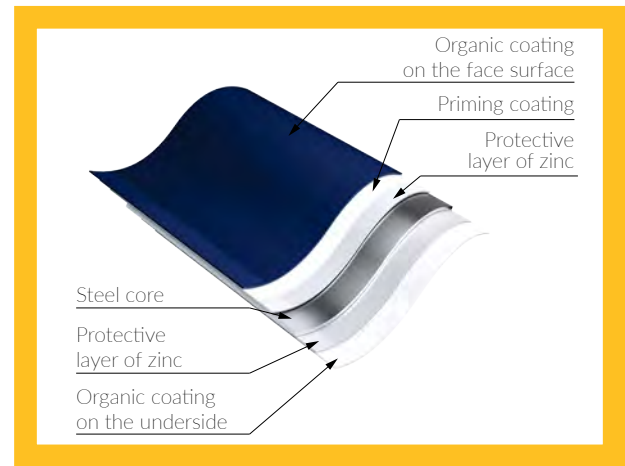
Polyurethane coatings are suitable for use in standard, aggressive and demanding environments. PU coatings can be used in atmospheres with very high corrosive properties and very high UV radiation. Buildings, for which color stability and appearance have above-average meaning. The coat is intended for outdoor atmospheres with a corrosion category up to C5* and for indoor applications, when exposed to A4* environments.

FARM

The coating is used inside agricultural and livestock buildings, particularly in buildings intended for breeding livestock or poultry and to store cereals. The coat is intended for indoor atmospheres with an environment category up to A5*.

FOOD SAFE

The coating is intended for indoor use, on surfaces entering in contact with food. Easily washable and resistant to the majority of detergents. The coat is intended for indoor atmospheres with an environment category up to A5*.



coating diagram

TABLE OF COATING PROPERTIES

COATING	SP 25	PU	FARM	FOOD SAFE
Nominal thickness [μm]	25	55	35	120
Surface finishing	smooth	grainy	smooth	smooth
Shine (Gardner 60°)	30	30	30	12
MECHANICAL RESISTANCE				
Coating elasticity	≤ 3 T	< 1,5 T	≤ 2 T	≤ 1 T
Scratch resistance	≥ 2 kg	≥ 3 kg	≥ 2 kg	≥ 4 kg
RESISTANCE TO CORROSION				
Salt spray [h]	360	700	360	500
Condensation humidity [h]	1000	1500	1500	1500
Corrosive resistance class	RC 3	RC 5*	RC 3	RC 3
Interior anti-corrosive protection category	CPI 1	CPI 5*	CPI 5*	CPI 5*

* organic coating is selected on the basis of durability and application conditions. Coating selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech.



SANDWICH PANEL TECHNICAL DATA

SANDWICH PANEL TYPES

Paneltech offers sandwich panels in three core variants:

PW PUR/PIR

The core of the panel is made of stiff polyurethane (PUR) or polyisocyanurate (PIR) foam meeting the requirements of PN-EN 13165, including for dimensional stability and thermal insulation. Sandwich panels with polyurethane cores type PW PUR-S, PW PUR-SU, PW PUR-CH, PW PUR-D and polyisocyanurate cores type PW PIR-S, PW PIR-SU, PW PIR-CH and PW PIR-D are manufactured in accordance with PN-EN 14509.

PWS

The core of this sandwich panel is made at the least of EPS 60, Paneltech production. Sandwich panels with EPS cores type PWS-S, PWS-SU i PWS-D are manufactured in accordance with PN-EN 14509.

PWW / PWW LITE

The core of the panel is made of mineral wool supplied by leading wool insulation producers. Sandwich panels with mineral wool cores type PWW-S / PWW-S lite, PWW-SU / PWW-SU lite and PWW-D are manufactured in accordance with PN-EN 14509

Each core has its own performance characteristics and parameters. The core should be selected depending on the requirements and applications. For instance, the fire rating is an important factors, as a sandwich panel with a mineral wool core has reaction to fire class A2-s1,d0, which surpasses this of a sandwich panel with a polyurethane core, which has reaction to fire class B-s2,d0, or the sandwich panel with the EPS core - with an E class reaction to fire.

Depending on their shape and their intended purpose, Paneltech products are classified into sandwich panel families:

- wall panels with visible joints,
- wall panels with hidden joints,
- wall coldroom panels,
- roof panels.

TERM EXPLANATION

Fire resistance:

R	fire load capacity
E	fire integrity
I	fire insulation

Reaction to fire:

A2-s1, d0	non-combustible, hardly no smoke, no flaming droplets;
B-s1, d0	combustible, difficult to ignite, nearly no smoke, without flaming droplets;
B-s2, d0	combustible, difficult to ignite, limited smoke, without flaming droplets;
E	combustible, easily ignited, unlimited smoking, self-extinguishing;
B _{roof} (t1)	fire-retardant roofing;

Outside corrosion categories:

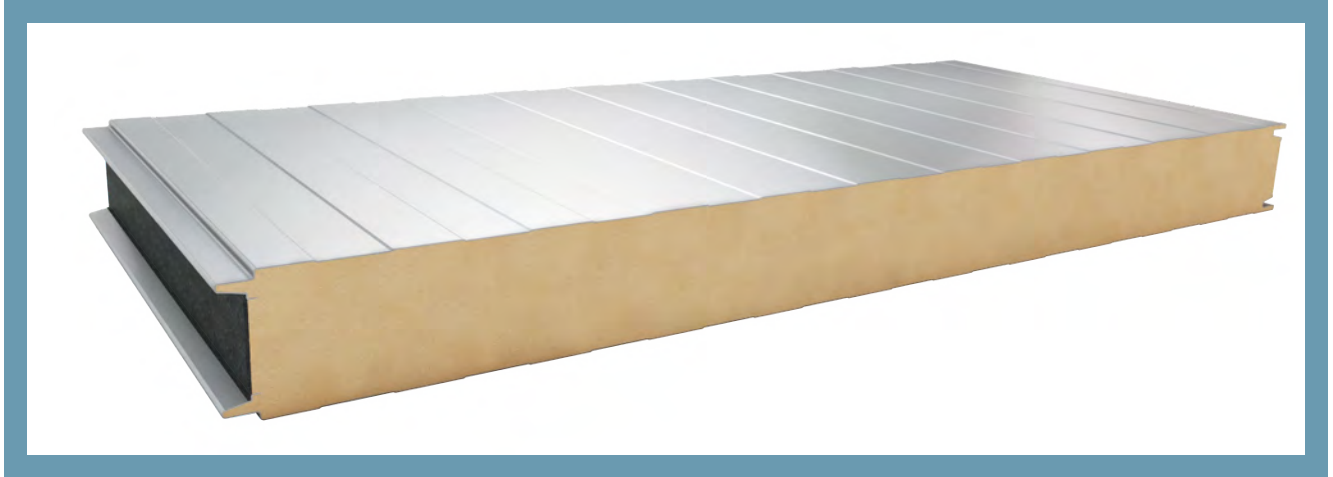
C2	Rural areas with low corrosion classes
C3	Urban and industrial areas with low SO ₂ levels, with medium corrosion classes
C4	Industrial areas with moderate SO ₂ levels, with high corrosion classes
C5-I	Industrial areas with high SO ₂ levels, with very high corrosion classes

Internal environment categories:

A1	Non-aggressive environment, occasional condensation, e.g. dry storage buildings
A2	Hardly aggressive environment, occasional condensation, e.g. coldrooms, supermarkets
A3	Moderately aggressive environment, occasional condensation, e.g. food processing and industrial buildings with dry processes carried out
A4	Very aggressive environment, occasional condensation, e.g. industrial buildings with wet processes carried out, swimming pools
A5	Strongly aggressive environment, occasional condensation, e.g. wet food processing (fish processing)

Minimum Production Quantity (MPQ) is from 200m² up to 1000m² and depends on type and thickness of the panel. In order to verify production possibilities of specific order please contact our Customer Service or Sales Representative.

PW PUR-S / PIR-S



Panels connection scheme

APPLICATION

Sandwich wall panel with visible joint PW PUR-S / PW PIR-S is used to construct external walls and internal partitions in the single- or multiple-span shell structure. The panels can be installed both vertically and horizontally. PW PUR-SU / PW PIR-SU sandwich panels are characterized by very good thermal insulation properties and strength, as well as very high fire resistance properties (PW PIR-S). The core of the panel comprises polyurethane foam (PUR) or polyisocyanurate foam (PIR) of 40 kg/m³ in total density. PW PUR-S / PIR-S panels are fully compatible with wall panels with mineral wool cores type PWW-S/PWW-S lite and with wall panels with expanded polystyrene core type PWS-S.

AVAILABLE PROFILATION TYPES

EXTERNAL PROFILATION

- L** - LINEAR
- MF** - MICROWAVE
- ML** - MICROLINEAR
- G** - SMOOTH
- MR** - MICROGROOVE

INTERNAL PROFILATION

- L** - LINEAR
- R** - GROOVE
- G** - SMOOTH

TABLE OF TECHNICAL PARAMETERS OF THE PW PUR-S / PIR-S PANELS

Parameter	Value				
thickness [mm]	40	60	80	100	120
modular width [mm]	1130 (optionally 1000 or 1050)				
length ¹⁾ [mm]	2000 ÷ 15800				
weight ²⁾ [kg/m²]	9,9	10,7	11,5	12,3	13,1
heat transfer coefficient U _c [W/m²K]	0,59	0,38	0,28	0,22	0,19
acoustic insulation Rw [dB]	26				
reaction to fire PUR	B-s2,d0				
reaction to fire PIR	B-s1,d0				
resistance to external fire ³⁾	NRO				
wall fire rating PUR ⁴⁾	NPD				
wall fire rating PIR ⁴⁾	NPD			EI 30 (o ↔ i)	
anti-corrosive protection	external C1, C2, C3 (C4 ÷ C5) ⁵⁾ , internal A1 (A2 ÷ A5) ⁵⁾				
organic coatings	SP 25, PU, AGRO, FOOD SAFE and other ⁵⁾				
external facing	galvanized steel 0,5 ÷ 0,6 mm ⁶⁾				
internal facing	galvanized steel 0,4 ÷ 0,5 mm ⁶⁾				
available profilation types	external facing L, ML, MR ⁷⁾ , G ⁸⁾ ; internal facing L, R ⁸⁾ , G ⁸⁾				
insulating core	rigid foam of 40 kg/m³ in total density and with enclosed PUR (polyurethane) / PIR (polyisocyanurate) cells				
application	non-continuous application on external walls and as wall cladding, on the structural parts of walls and ceilings				
wall application layout	vertical or horizontal				

¹⁾ length depends on the color of the external facing and the thickness of the panel

²⁾ average weight of a sandwich panel with 0.5 mm outer facing, including product tolerance

³⁾ fire rating concerning the propagation of fire by the wall when the fire acts towards the outside. This property applies to the Polish territory only and is not CE-marked

⁴⁾ for more details on the General Terms of Sale and Delivery, go to www.paneltech.pl

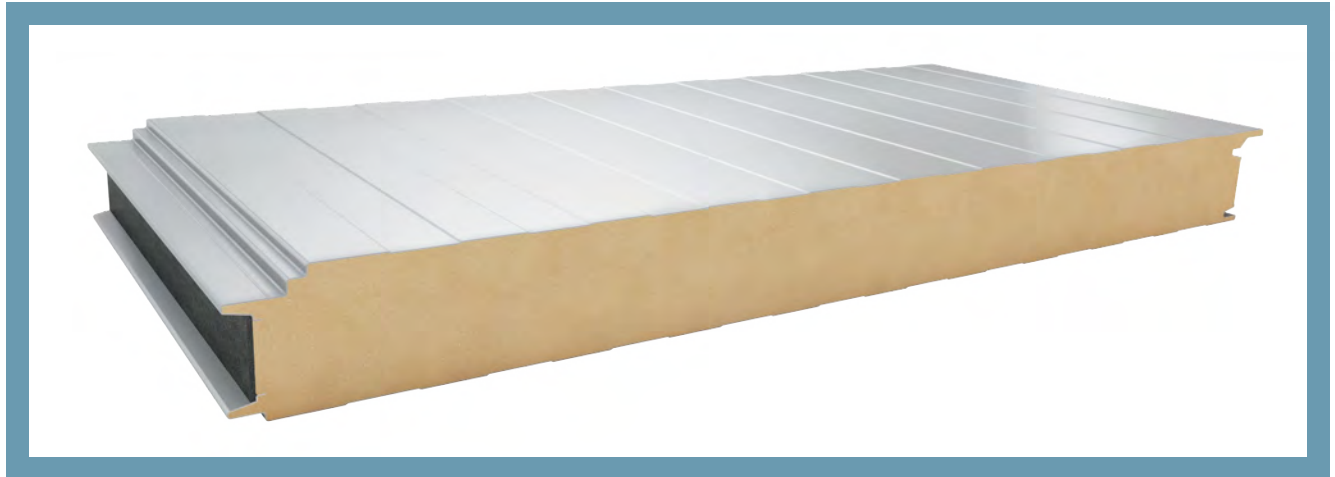
⁵⁾ organic coat selected on the basis of durability and application conditions. Coat selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech

⁶⁾ other steel types are selected according to application conditions and approved by Paneltech

⁷⁾ detailed information on the MR – microgroove profilation will be provided at individual request

⁸⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D

PW PUR-SU / PIR-SU



Panels connection scheme

APPLICATION

Sandwich wall panel with hidden joint PW PUR-SU / PW PIR-SU is used to construct external walls and internal partitions in the single- or multiple-span shell structure. The link is hidden in a suitably profiled longitudinal edge of the panel, forming a locking mechanism characteristic for this system, creating an aesthetic appearance of the facade. The panels can be installed both vertically and horizontally, however, in the horizontal layout, the system requires additional panel jointing treatment. PW PUR-SU / PW PIR-SU sandwich panels are characterized by very good thermal insulation properties and strength, as well as very high fire resistance properties (PW PIR-SU). The core of the panel comprises polyurethane foam (PUR) or polyisocyanurate foam (PIR) of 40 kg/m³ in total density. PW PUR-SU / PIR-SU panels are fully compatible with wall panels with mineral wool core type PWW-SU/PWW-SU lite and with wall panels with expanded polystyrene core type PWS-SU.

AVAILABLE PROFILATION TYPES

EXTERNAL PROFILATION

- L** - LINEAR
- MF** - MICROWAVE
- ML** - MICROLINEAR
- G** - SMOOTH
- MR** - MICROGROOVE

INTERNAL PROFILATION

- L** - LINEAR
- R** - GROOVE
- G** - SMOOTH

TABLE OF TECHNICAL PARAMETERS OF THE PW PUR-SU / PIR-SU PANELS

Parameter	Value			
thickness [mm]	60	80	100	120
modular width [mm]	1050 (optionally 1000)			
length ¹⁾ [mm]	2000 ÷ 15800			
weight ²⁾ [kg/m ²]	11,1	11,80	12,60	13,40
heat transfer coefficient U _c [W/m ² K]	0,39	0,29	0,23	0,19
acoustic insulation Rw [dB]	26			
reaction to fire PUR	B-s2,d0			
reaction to fire PIR	B-s2,d0			
resistance to external fire ³⁾	NRO			
wall fire rating PUR ⁴⁾	NPD			
wall fire rating PIR ⁴⁾	NPD		EI 15 (o ← i)	
anti-corrosive protection	external C1, C2, C3 (C4 ÷ C5) ⁵⁾ , internal A1 (A2 ÷ A5) ⁵⁾			
organic coatings	SP 25, PU, AGRO, FOOD SAFE and other ⁵⁾			
external facing	galvanized steel 0,5 ÷ 0,6 mm ⁶⁾			
internal facing	galvanized steel 0,4 ÷ 0,5 mm ⁶⁾			
available profilation types	external facing L, ML, MF, MR ⁷⁾ , G ⁸⁾ ; internal facing L, R ⁸⁾ , G ⁸⁾			
insulating core	rigid foam of 40 kg/m ³ in total density and with enclosed PUR (polyurethane) / PIR (polyisocyanurate) cells			
application	non-continuous application on external walls and as wall cladding, on the structural parts of walls and ceilings			
wall application layout	vertical or horizontal			

¹⁾ length depends on the color of the external facing and the thickness of the panel

²⁾ average weight of a sandwich panel with 0.5 mm outer facing, including product tolerance

³⁾ fire rating concerning the propagation of fire by the wall when the fire acts towards the outside. This property applies to the Polish territory only and is not CE-marked

⁴⁾ for more details on the General Terms of Sale and Delivery, go to www.paneltech.pl

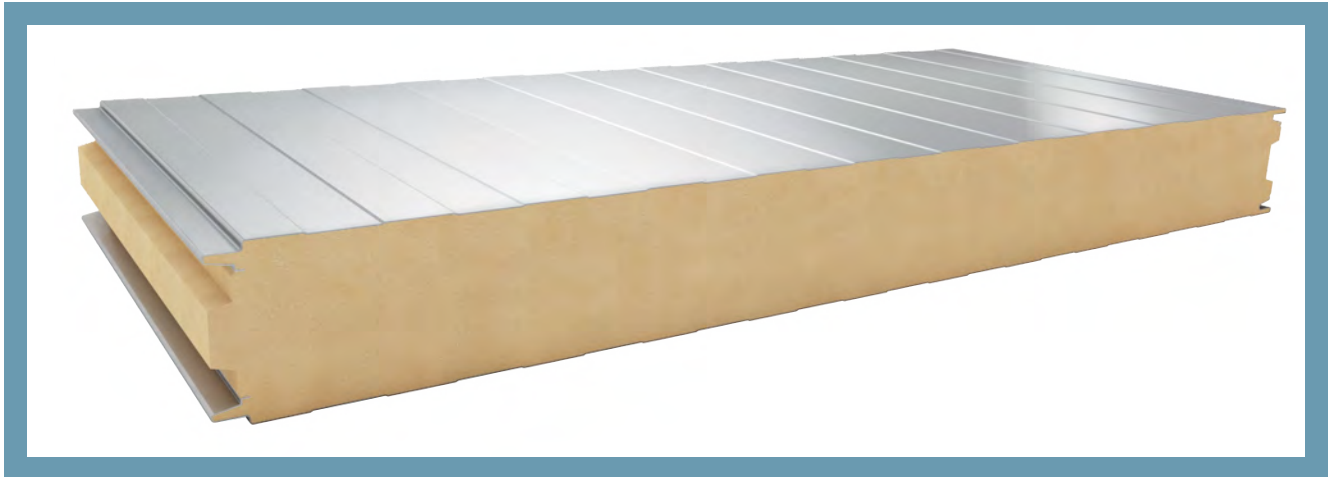
⁵⁾ organic coat selected on the basis of durability and application conditions. Coat selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech

⁶⁾ other steel types are selected according to application conditions and approved by Paneltech

⁷⁾ detailed information on the MR – microgroove profilation will be provided at individual request

⁸⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D

PW PUR-CH / PIR-CH



Panels connection scheme

APPLICATION

Coldroom PW PUR-CH / PIR-CH sandwich panels are intended for warehouse structures where internal temperatures reach minus 25°C. The panels can be installed both vertically and horizontally. Panel edges are custom-cut, and thus provide a very low coefficient of linear distribution of thermal conductivity of the joint, and thus guarantee complete water-tightness and vapor-tightness. PW PUR-CH / PIR-CH sandwich panels are characterized by very good thermal insulation properties and strength, as well as very high fire resistance properties (PW PIR-CH). The core of the panel comprises polyurethane foam (PUR) or polyisocyanurate foam (PIR) of 40 kg/m³ in total density.

AVAILABLE PROFILATION TYPES

EXTERNAL PROFILATION

- L** - LINEAR
- MF** - MICROWAVE
- ML** - MICROLINEAR
- G** - SMOOTH
- MR** - MICROGROOVE

INTERNAL PROFILATION

- L** - LINEAR
- R** - GROOVE
- G** - SMOOTH

TABLE OF TECHNICAL PARAMETERS OF THE PW PUR-CH / PIR-CH PANELS

Parameter	Value			
thickness [mm]	120	160	180	200
modular width [mm]	1130 (optionally 1000 or 1050)			
length ¹⁾ [mm]	2000 ÷ 15800			
weight ²⁾ [kg/m ²]	13,1	14,7	15,5	16,3
heat transfer coefficient U_c [W/m ² K]	0,18	0,14	0,12	0,11
acoustic insulation R_w [dB]	26			
reaction to fire PUR	B-s2,d0			
reaction to fire PIR	B-s1,d0			
resistance to external fire ³⁾	NRO			
wall fire rating PUR ⁴⁾	NPD			
wall fire rating PIR ⁴⁾	EI 30 (o ↔ i)			
anti-corrosive protection	external C1, C2, C3 (C4 ÷ C5) ⁵⁾ , internal A1 (A2 ÷ A5) ⁵⁾			
organic coatings	SP 25, PU, AGRO, FOOD SAFE and other ⁵⁾			
external facing	galvanized steel 0,5 ÷ 0,6 mm ⁶⁾			
internal facing	galvanized steel 0,4 ÷ 0,5 mm ⁶⁾			
available profilation types	external facing L, ML, MF, MR ⁷⁾ , G ⁸⁾ ; internal facing L, R ⁸⁾ , G ⁸⁾			
insulating core	rigid foam of 40 kg/m ³ in total density and with enclosed PUR (polyurethane) / PIR (polyisocyanurate) cells			
application	non-continuous application on external walls and as wall cladding, on the structural parts of walls and ceilings			
wall application layout	vertical or horizontal			

¹⁾ length depends on the color of the external facing and the thickness of the panel

²⁾ average weight of a sandwich panel with 0.5 mm outer facing, including product tolerance

³⁾ fire rating concerning the propagation of fire by the wall when the fire acts towards the outside. This property applies to the Polish territory only and is not CE-marked

⁴⁾ for more details on the General Terms of Sale and Delivery, go to www.paneltech.pl

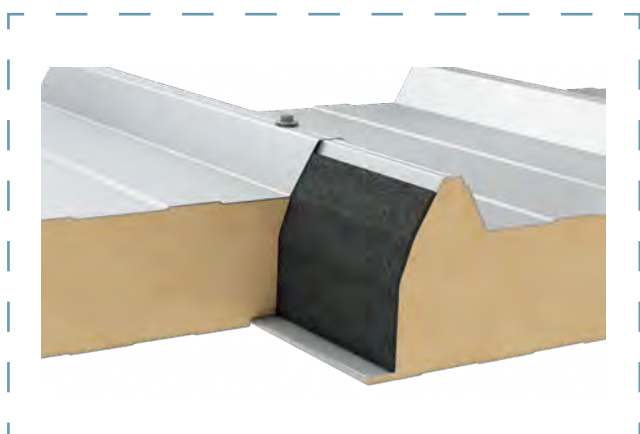
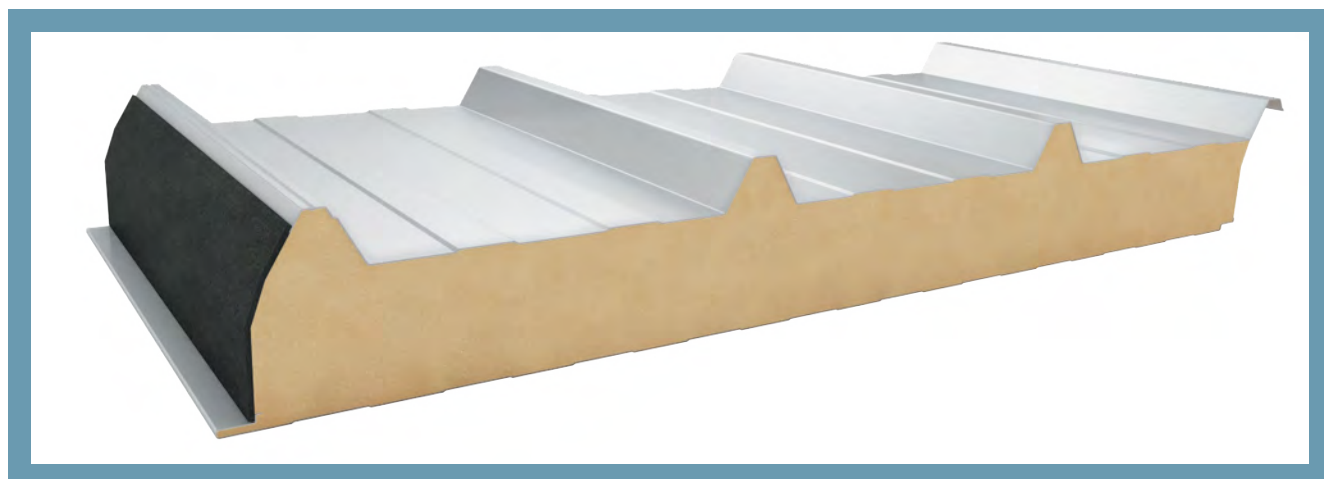
⁵⁾ organic coat selected on the basis of durability and application conditions. Coat selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech

⁶⁾ other steel types are selected according to application conditions and approved by Paneltech

⁷⁾ detailed information on the MR – microgroove profilation will be provided at individual request

⁸⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D

PW PUR-D / PIR-D



Panels connection scheme

APPLICATION

Roof sandwich panel PW PUR-D / PIR-D is applied as roofs and roof covers. The panel is characterized by very good thermal insulation properties and strength, as well as very high fire resistance properties (PW PIR-D). The core of the panel comprises polyurethane foam (PUR) or polyisocyanurate foam (PIR) of 40 kg/m³ in total density.

AVAILABLE PROFILATION TYPES

EXTERNAL PROFILATION

T - TRAPEZOIDAL

INTERNAL PROFILATION

L - LINEAR

R - GROOVE

G - SMOOTH

TABLE OF TECHNICAL PARAMETERS OF THE PW PUR-D / PIR-D PANELS

Parameter	Value						
thickness [mm]	40	60	80	90	100	120	160
modular width [mm]	1050						
length ¹⁾ [mm]	2000 ÷ 16000						
weight ²⁾ [kg/m ²]	10,2	11,0	11,8	12,2	12,6	13,4	15,0
heat transfer coefficient U _c [W/m ² K]	0,50	0,35	0,27	0,24	0,22	0,18	0,14
acoustic insulation Rw [dB]	23						
reaction to fire PUR	NPD			B-s2,d0			
reaction to fire PIR	B-s2,d0						
resistance to external fire PUR	B _{roof} (t ₁)						
resistance to external fire PIR	B _{roof} (t ₁) and B _{roof} (t ₂) and B _{roof} (t ₃)						
roof fire rating PUR ³⁾	NPD						
roof fire rating PIR ³⁾	NPD			REI 30			
anti-corrosive protection	external C1, C2, C3 (C4 ÷ C5) ⁴⁾ , internal A1 (A2 ÷ A5) ⁴⁾						
organic coatings	SP 25, PU, AGRO, FOOD SAFE and other ⁴⁾						
external facing	galvanized steel 0,5 ÷ 0,6 mm ⁵⁾						
internal facing	galvanized steel 0,4 ÷ 0,5 mm ⁵⁾						
available proffilation types	external facing T; internal facing L, R ⁶⁾ , G ⁶⁾						
insulating core	rigid foam of 40 kg/m ³ in total density and with enclosed PUR (polyurethane) / PIR (polyisocyanurate) cells						
application	non-continuous application on roofs and roof covers						

¹⁾ length depends on the color of the external facing and the thickness of the panel

²⁾ average weight of a sandwich panel with 0.5 mm outer facing, including product tolerance

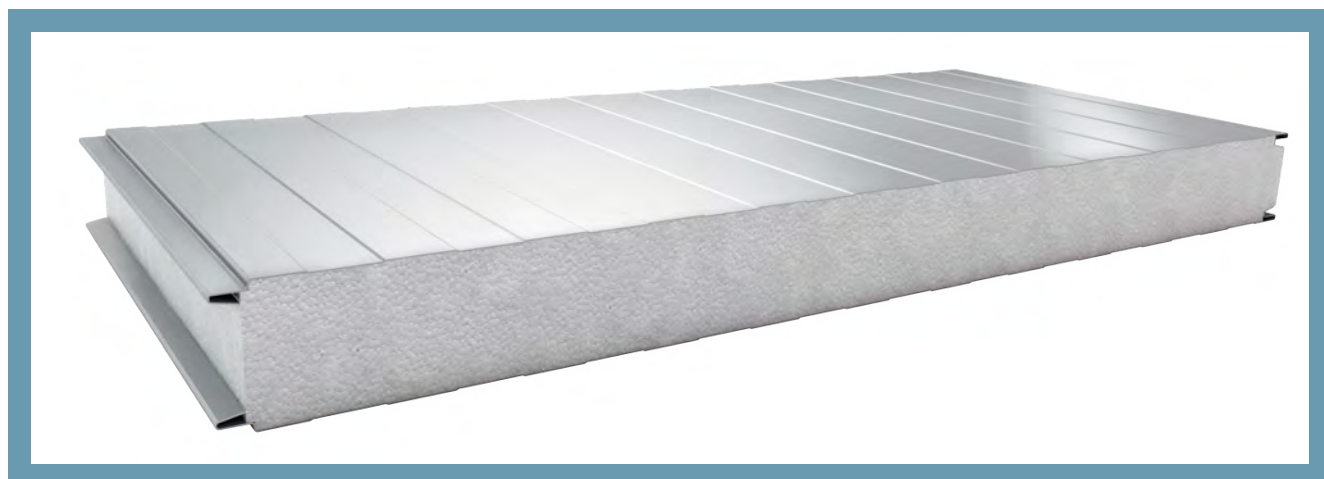
³⁾ for more details on the General Sales Conditions, go to www.paneltech.pl

⁴⁾ organic coat selected on the basis of durability and application conditions. Coat selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech

⁵⁾ other steel types are selected according to application conditions and approved by Paneltech

⁶⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D

PWS-S



Panels connection scheme

APPLICATION

Wall sandwich panel with visible joint PWS-S is used to construct external walls and internal partitions in the single- or multiple-span shell structure. The panels can be installed both vertically and horizontally. PWS-S sandwich panels are characterized by superb thermal insulation and low weight. The core of the panel comprises expanded polystyrene of 12,5 kg/m³ which is produced by our own factory. The PWS-S panels are fully compatible with wall panels with polyurethane core type PW PUR-S / PIR-S and with wall panels with mineral wool core type PWW-S / PWW-S lite.

AVAILABLE PROFILATION TYPES

EXTERNAL PROFILATION

- L** - LINEAR
- MF** - MICROWAVE
- ML** - MICROLINEAR
- G** - SMOOTH

INTERNAL PROFILATION

- L** - LINEAR
- R** - GROOVE
- G** - SMOOTH

TABLE OF TECHNICAL PARAMETERS OF THE PWS-S PANELS

Parameter	Value					
thickness [mm]	50	80	100	120	150	200
modular width [mm]	1130 (optionally 1000 or 1050)					
length ¹⁾ [mm]	2000 ÷ 10000					
weight ²⁾ [kg/m ²]	8,8	9,1	9,4	9,6	10,0	10,6
heat transfer coefficient U_c [W/m ² K]	0,77	0,48	0,39	0,32	0,26	0,20
resistance to external fire ³⁾	NRO					
anti-corrosive protection	external C1, C2, C3 (C4 ÷ C5) ⁴⁾ , internal A1 (A2 ÷ A5) ⁴⁾					
organic coatings	SP 25, PU, AGRO, FOOD SAFE and other ⁴⁾					
external facing	galvanized steel 0,5 ÷ 0,6 mm ⁵⁾					
internal facing	galvanized steel 0,4 ÷ 0,5 mm ⁵⁾					
available profilation types	external facing L, ML, MF, G ⁶⁾ ; internal facing L, R ⁶⁾ , G ⁶⁾					
insulating core	expanded polystyrene EPS of 12,5 kg/m ³					
application	non-continuous application on external walls and as wall cladding, on the structural parts of walls and ceilings					
wall application layout	vertical or horizontal					

¹⁾ length depends on the color of the external facing and the thickness of the panel

²⁾ average weight of a sandwich panel with 0,5 mm outer facing, including product tolerance

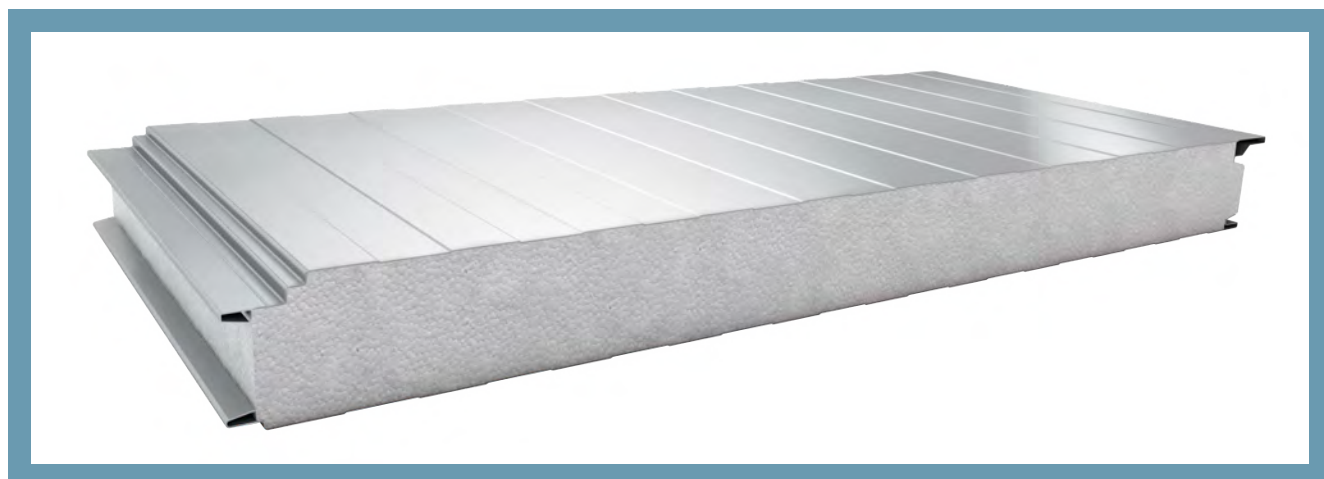
³⁾ fire rating concerning the propagation of fire by the wall when the fire acts towards the outside. This property applies to the Polish territory only and is not CE-marked

⁴⁾ organic coat selected on the basis of durability and application conditions. Coat selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech

⁵⁾ other steel types are selected according to application conditions and approved by Paneltech

⁶⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D

PWS-SU*



Panels connection scheme

APPLICATION

Sandwich wall panel with hidden joint PWS-SU is used to construct external walls and internal partitions in the single- or multiple-span shell structure. The link is hidden in a suitably profiled longitudinal edge of the panel, forming a locking mechanism characteristic for this system, creating an aesthetic appearance of the facade. The panels can be installed both vertically and horizontally, however, in the horizontal layout, the system requires additional panel jointing treatment. PWS-SU sandwich panels are characterized by superb thermal insulation and low weight. The core of the panel comprises expanded polystyrene of 12,5 kg/m³ which is produced by our own factory. The PWS-SU panels are fully compatible with wall panels with polyurethane core type PW PUR-SU / PIR-SU and with wall panels with mineral wool core type PWW-SU / PWW-SU lite.

AVAILABLE PROFILATION TYPES

EXTERNAL PROFILATION

- L** - LINEAR
- MF** - MICROWAVE
- ML** - MICROLINEAR
- G** - SMOOTH

INTERNAL PROFILATION

- L** - LINEAR
- R** - GROOVE
- G** - SMOOTH

*The product is unavailable

TABLE OF TECHNICAL PARAMETERS OF THE PWS-SU PANELS*

Parameter	Value			
thickness [mm]	80	100	120	150
modular width [mm]	1050 (optionally 1000)			
length ¹⁾ [mm]	2000 ÷ 10000			
weight ²⁾ [kg/m ²]	9,4	9,7	9,9	10,3
heat transfer coefficient U_c [W/m ² K]	0,50	0,40	0,33	0,26
resistance to external fire ³⁾	NRO			
anti-corrosive protection	external C1, C2, C3 (C4 ÷ C5) ⁴⁾ , internal A1 (A2 ÷ A5) ⁴⁾			
organic coatings	SP 25, PU, AGRO, FOOD SAFE and other ⁴⁾			
external facing	galvanized steel 0,5 ÷ 0,6 mm ⁵⁾			
internal facing	galvanized steel 0,4 ÷ 0,5 mm ⁵⁾			
available profilation types	external facing L, ML, MF, G ⁶⁾ ; internal facing L, R ⁶⁾ , G ⁶⁾			
insulating core	expanded polystyrene EPS of 12,5 kg/m ³			
application	non-continuous application on external walls and as wall cladding, on the structural parts of walls and ceilings			
wall application layout	vertical or horizontal			

¹⁾ length depends on the color of the external facing and the thickness of the panel

²⁾ average weight of a sandwich panel with 0,5 mm outer facing, including product tolerance

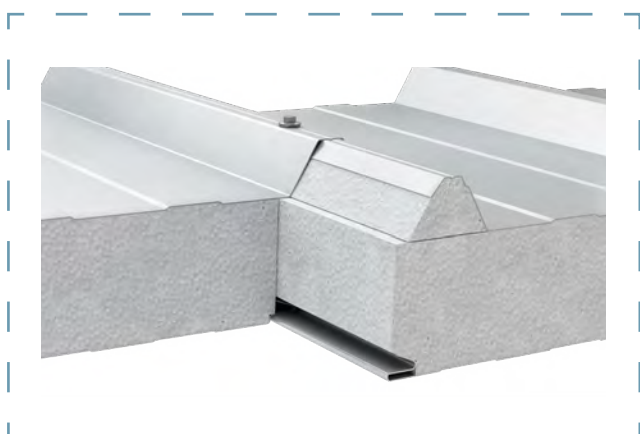
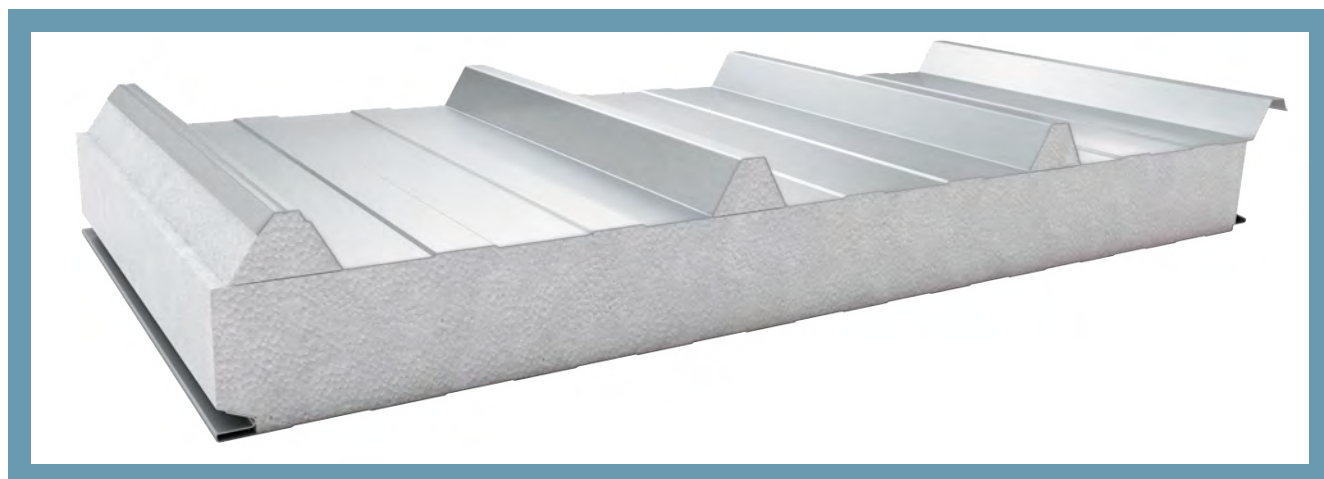
³⁾ fire rating concerning the propagation of fire by the wall when the fire acts towards the outside. This property applies to the Polish territory only and is not CE-marked

⁴⁾ organic coat selected on the basis of durability and application conditions. Coat selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech

⁵⁾ other steel types are selected according to application conditions and approved by Paneltech

⁶⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D

PWS-D



Panels connection scheme

APPLICATION

Roof sandwich panel PWS-D is applied as roofs and roof covers. The core of the panel comprises expanded polystyrene of 12,5 kg/m³ which is produced by our own factory. PWS-D sandwich panels are characterized by superb thermal insulation and low weight.

AVAILABLE PROFILATION TYPES

EXTERNAL PROFILATION

T - TRAPEZOIDAL

INTERNAL PROFILATION

L - LINEAR

R - GROOVE

G - SMOOTH

TABLE OF TECHNICAL PARAMETERS OF THE PWS-D PANELS

Parameter	Value				
thickness [mm]	80	100	120	150	200
modular width [mm]	1050				
length ¹⁾ [mm]	2000 ÷ 10000				
weight ²⁾ [kg/m ²]	9,6	9,9	10,2	10,6	11,5
heat transfer coefficient U_c [W/m ² K]	0,45	0,37	0,31	0,25	0,19
resistance to external fire	$B_{\text{roof}}(t_1)$				
anti-corrosive protection	external C1, C2, C3 (C4 ÷ C5) ³⁾ , internal A1 (A2 ÷ A5) ³⁾				
organic coatings	SP 25, PU, AGRO, FOOD SAFE and other ³⁾				
external facing	galvanized steel 0,5 ÷ 0,6 mm ⁴⁾				
internal facing	galvanized steel 0,4 ÷ 0,5 mm ⁴⁾				
available profilation types	external facing T; internal facing L, R ⁵⁾ , G ⁵⁾				
insulating core	expanded polystyrene EPS of 12,5 kg/m ³				
application	non-continuous application on roofs and roof covers				

¹⁾ length depends on the color of the external facing and the thickness of the panel

²⁾ average weight of a sandwich panel with 0,5 mm outer facing, including product tolerance

³⁾ organic coat selected on the basis of durability and application conditions. Coat selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech

⁴⁾ other steel types are selected according to application conditions and approved by Paneltech

⁵⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D

PWW-S / PWW-S LITE



Panels connection scheme

APPLICATION

Sandwich wall panel with visible joint PWW-S/PWW-S lite is used to construct external walls and internal partitions in the single- or multiple-span shell structure. The panels can be installed both vertically and horizontally. The core of the panel comprises mineral wool of 100 kg/m³ (PWW-S) or 85 kg/m³ (PWW-S lite). Thanks to their properties, i.e. high fire-resistance parameters, the panels can be used to construct buildings with high fire ratings. The PWW-S / PWW-S lite panels are fully compatible with wall panels with polyurethane core type PW PUR-S / PIR-S and with wall panels with expanded polystyrene core type PWS-S.

AVAILABLE PROFILATION TYPES

EXTERNAL PROFILATION

- L** - LINEAR
- MF** - MICROWAVE
- ML** - MICROLINEAR
- G** - SMOOTH

INTERNAL PROFILATION

- L** - LINEAR
- R** - GROOVE
- G** - SMOOTH

TABLE OF TECHNICAL PARAMETERS OF THE PWW-S / PWW-S LITE PANELS

Parameter	Value							
thickness [mm]	60	80	100	120	140	160	180	200
modular width [mm]	1130 (optionally 1000 or 1050)							
length ¹⁾ [mm]	2000 ÷ 10000							
weight ²⁾ for PWW-S [kg/m²]	14,1	16,1	18,1	20,1	22,1	24,1	26,1	28,1
weight ²⁾ for PWW-S lite [kg/m²]	13,2	14,9	16,6	18,3	20	21,7	23,4	25,1
heat transfer coefficient U _c for PWW-S [W/m²K]	0,66	0,49	0,39	0,33	0,28	0,25	0,22	0,20
heat transfer coefficient U _c for PWW-S lite [W/m²K]	0,62	0,47	0,38	0,32	0,27	0,24	0,21	0,19
acoustic insulation Rw [dB]	31		33	31				34
reaction to fire	A2-s1,d0							
resistance to external fire ³⁾	NRO							
PWW-S wall fire rating ⁴⁾	NPD		EI 60 (o ↔ i)			EI 120 (o ↔ i)		
PWW-S lite wall fire rating ⁴⁾	NPD		EI 30 (o ↔ i)					
anti-corrosive protection	external C1, C2, C3 (C4 ÷ C5) ⁵⁾ , internal A1 (A2 ÷ A5) ⁵⁾							
organic coatings	SP 25, PU, AGRO, FOOD SAFE and other ⁵⁾							
external facing	galvanized steel 0,5 ÷ 0,6 mm ⁶⁾							
internal facing	galvanized steel 0,5 ÷ 0,6 mm ⁶⁾							
available profilation types	external facing L, ML, MF, G ⁷⁾ ; internal facing L, R ⁷⁾ , G ⁷⁾							
insulating core	rock, inflammable mineral wool with a lamella fiber structure 85 kg/m3 (PWW-S Lite) and 100 kg/m³ (PWW-S)							
application	non-continuous application on external walls and as wall cladding, on the structural parts of walls and ceilings							
wall application layout	vertical or horizontal							

¹⁾ length depends on the color of the external facing and the thickness of the panel

²⁾ average weight of a sandwich panel with 0.5 mm outer facing, including product tolerance

³⁾ fire rating concerning the propagation of fire by the wall when the fire acts towards the outside. This property applies to the Polish territory only and is not CE-marked

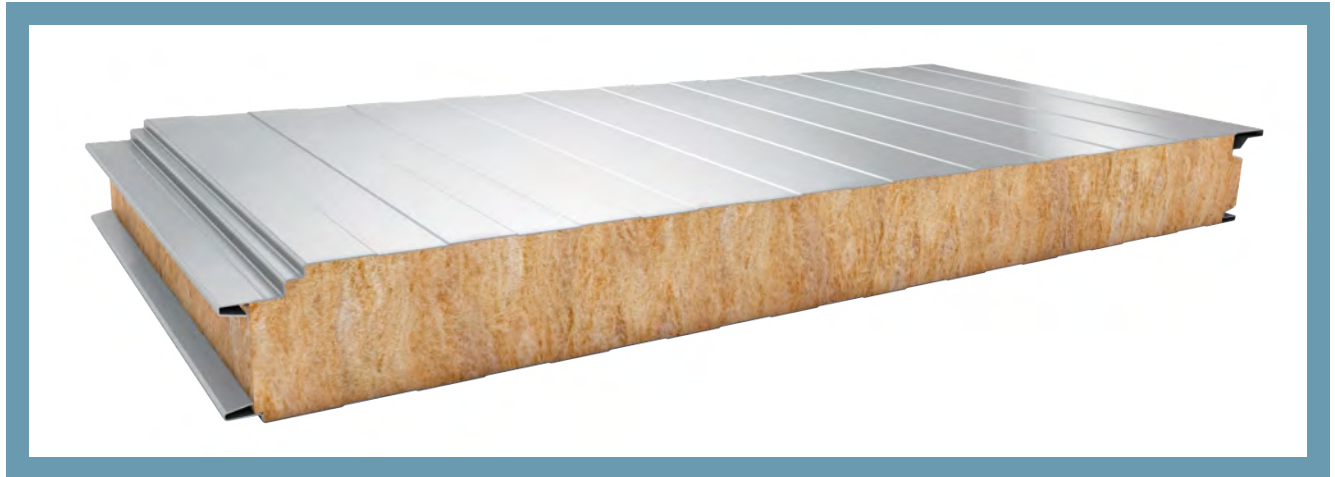
⁴⁾ for more details on the General Terms of Sale and Delivery, go to www.paneltech.pl

⁵⁾ organic coat selected on the basis of durability and application conditions. Coat selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech

⁶⁾ other steel types are selected according to application conditions and approved by Paneltech

⁷⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D

PWW-SU / PWW-SU LITE



Panels connection scheme

APPLICATION

Sandwich wall panel with hidden joint. The PWW-SU / PWW-SU lite is used to construct external walls and internal partitions in the single- or multiple-span shell structure. The panels can be installed both vertically and horizontally. The link is hidden in a suitably profiled longitudinal edge of the panel, forming a locking mechanism characteristic for this system, creating an aesthetic appearance of the facade. The panels can be installed both vertically and horizontally, however, in the horizontal layout, the system requires additional panel jointing treatment. Thanks to their properties, i.e. high fire-resistance parameters, the panels can be used to construct buildings with high fire ratings. The core of the panel comprises mineral wool of 100 kg/m³ (PWW-SU) or 85 kg/m³ (PWW-SU lite). The PWW-SU / PWW-SU lite panels are fully compatible with wall panels with polyurethane core type PW PUR-SU / PIR-SU and with wall panels with expanded polystyrene core type PWS-SU.

AVAILABLE PROFILATION TYPES

EXTERNAL PROFILATION

- L** - LINEAR
- MF** - MICROWAVE
- ML** - MICROLINEAR
- G** - SMOOTH

INTERNAL PROFILATION

- L** - LINEAR
- R** - GROOVE
- G** - SMOOTH

TABLE OF TECHNICAL PARAMETERS OF THE PWW-SU / PWW-SU LITE PANELS

Parameter	Value							
thickness [mm]	60	80	100	120	140	160	180	200
modular width [mm]	1050 (optionally 1000)							
length ¹⁾ [mm]	2000 ÷ 10000							
weight ²⁾ for PWW-SU [kg/m²]	14,4	16,4	18,4	20,4	22,4	24,4	26,4	28,4
weight ²⁾ for PWW-SU lite [kg/m²]	13,5	15,2	16,9	18,9	20,3	22,0	23,7	25,4
heat transfer coefficient U _c for PWW-SU [W/m²K]	0,74	0,51	0,41	0,34	0,29	0,25	0,23	0,20
heat transfer coefficient U _c for PWW-SU lite [W/m²K]	0,71	0,49	0,39	0,32	0,28	0,24	0,21	0,19
acoustic insulation Rw [dB]	31							
reaction to fire	A2-s1,d0							
resistance to external fire ³⁾	NRO							
PWW-SU wall fire rating ⁴⁾	NPD		EI 30 (o ↔ i)					
PWW-SU lite wall fire rating ⁴⁾	NPD							
anti-corrosive protection	external C1, C2, C3 (C4 ÷ C5) ⁵⁾ , internal A1 (A2 ÷ A5) ⁵⁾							
organic coatings	SP 25, PU, AGRO, FOOD SAFE and other ⁵⁾							
external facing	galvanized steel 0,5 ÷ 0,6 mm ⁶⁾							
internal facing	galvanized steel 0,5 ÷ 0,6 mm ⁶⁾							
available profilation types	external facing L, ML, MF, G ⁷⁾ ; internal facing L, R ⁷⁾ , G ⁷⁾							
insulating core	rock, inflammable mineral wool with a lamella fiber structure 85 kg/m³ (PWW-SU Lite) and 100 kg/m³ (PWW-SU)							
application	non-continuous application on external walls and as wall cladding, on the structural parts of walls and ceilings							
wall application layout	vertical or horizontal							

¹⁾ length depends on the color of the external facing and the thickness of the panel

²⁾ average weight of a sandwich panel with 0.5 mm outer facing, including product tolerance

³⁾ fire rating concerning the propagation of fire by the wall when the fire acts towards the outside. This property applies to the Polish territory only and is not CE-marked

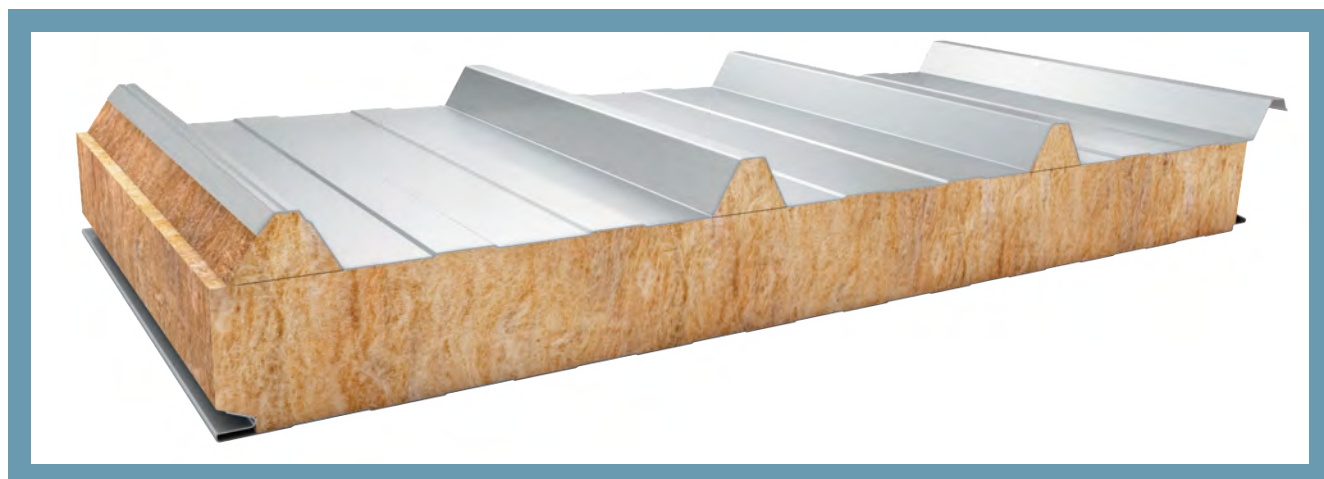
⁴⁾ for more details on the General Terms of Sale and Delivery, go to www.paneltech.pl

⁵⁾ organic coat selected on the basis of durability and application conditions. Coat selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech

⁶⁾ other steel types are selected according to application conditions and approved by Paneltech

⁷⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D

PWW-D



Panels connection scheme

APPLICATION

Roof sandwich panel PWW-D is applied as roofs and roof covers. The core of the panel comprises mineral wool of 100 kg/m^3 . Thanks to their properties, i.e. high fire-resistance parameters, the panels can be used to construct buildings with high fire ratings.

AVAILABLE PROFILATION TYPES

EXTERNAL PROFILATION

T - TRAPEZOIDAL

INTERNAL PROFILATION

L - LINEAR

R - GROOVE

G - SMOOTH

TABLE OF TECHNICAL PARAMETERS OF THE PWW-D PANELS

Parameter	Value						
thickness [mm]	80	100	120	140	160	180	200
modular width [mm]	1050						
length ¹⁾ [mm]	2000 ÷ 10000						
weight ²⁾ [kg/m²]	16,8	18,8	20,8	22,8	24,8	26,8	28,8
heat transfer coefficient U _c [W/m²K]	0,46	0,38	0,32	0,28	0,24	0,22	0,20
acoustic insulation Rw [dB]	31						
reaction to fire	A2-s1,d0						
resistance to external fire	B _{roof}						
roof fire rating ³⁾	NPD	REI 120					
anti-corrosive protection	external C1, C2, C3 (C4 ÷ C5) ⁴⁾ , internal A1 (A2 ÷ A5) ⁴⁾						
organic coatings	SP 25, PU, AGRO, FOOD SAFE and other ⁴⁾						
external facing	galvanized steel 0,5 ÷ 0,6 mm ⁵⁾						
internal facing	galvanized steel 0,5 ÷ 0,6 mm ⁵⁾						
available profilation types	external facing T; internal facing L, R ⁶⁾ , G ⁶⁾						
insulating core	rock, inflammable mineral wool with a lamella fiber structure 100 kg/m³						
application	non-continuous application on roofs and roof covers						

¹⁾ length depends on the color of the external facing and the thickness of the panel

²⁾ average weight of a sandwich panel with 0.5 mm outer facing, including product tolerance

³⁾ for more details on the General Sales Conditions, go to www.paneltech.pl

⁴⁾ organic coat selected on the basis of durability and application conditions. Coat selection is carried out through environmental assessment and basing on an environmental questionnaire completed by the Client, approved by the steel manufacturer and Paneltech

⁵⁾ other steel types are selected according to application conditions and approved by Paneltech

⁶⁾ facings with the G - smooth or R - groove profiles can include microwaves, which affect the appearance of the product classified as compliant with the requirements of EN 14509, annex D





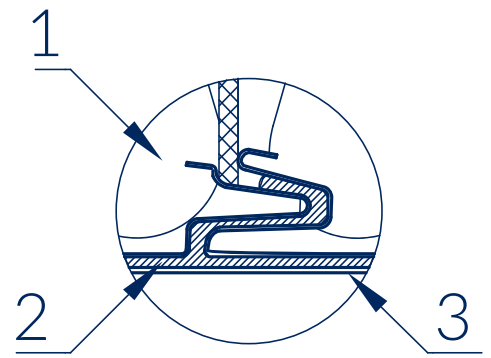
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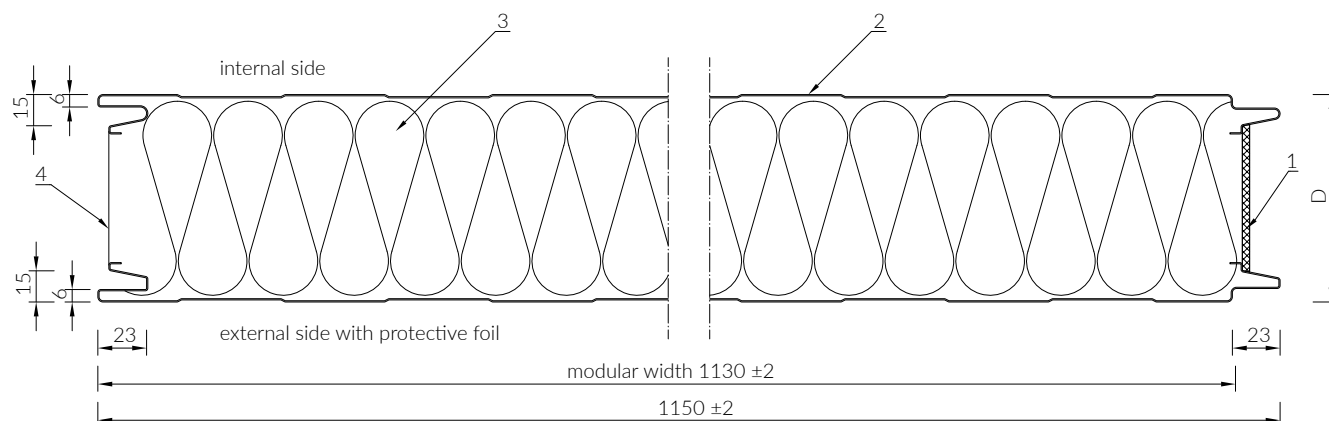
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WALL SANDWICH PANELS

WALL SANDWICH PANEL

PUR-S / PIR-S

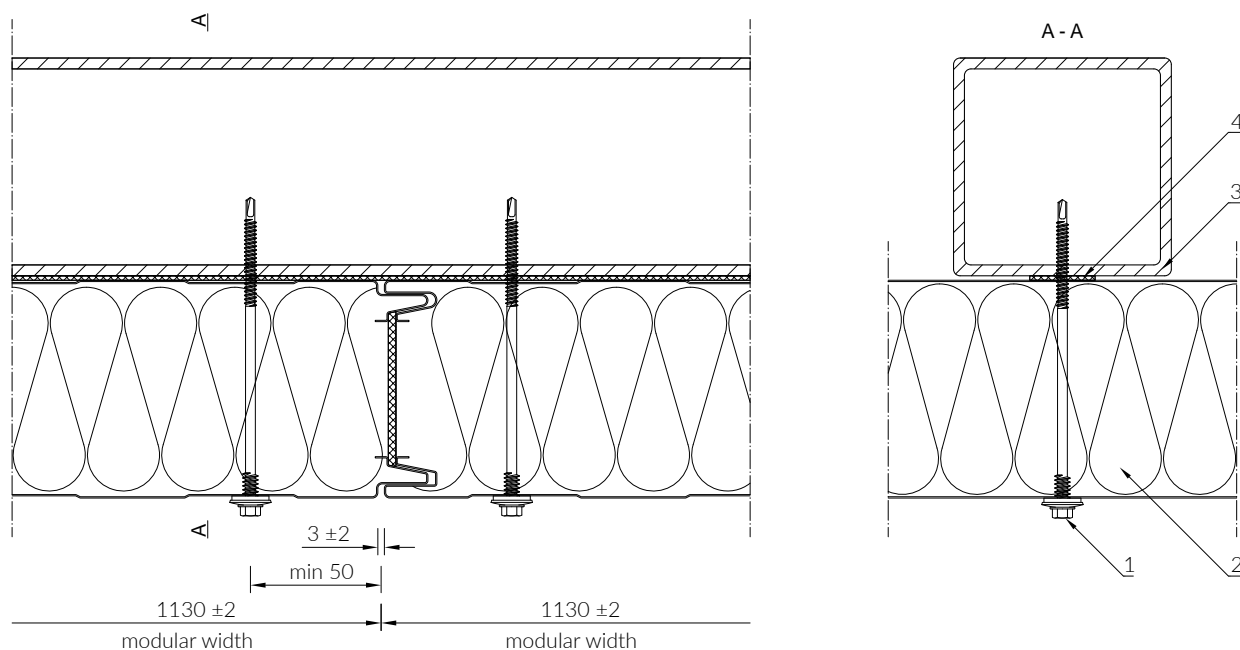


- 1 Polyurethane sealant
- 2 Steel facing
- 3 PUR or PIR core
- 4 The arrowhead on the foil points to the external side of the panel

D - panel thickness

The standard modular width of 1130 mm can be optionally changed to 1000 or 1050 mm. Dimensional tolerance ± 2 mm

WALL PANEL INSTALLATION

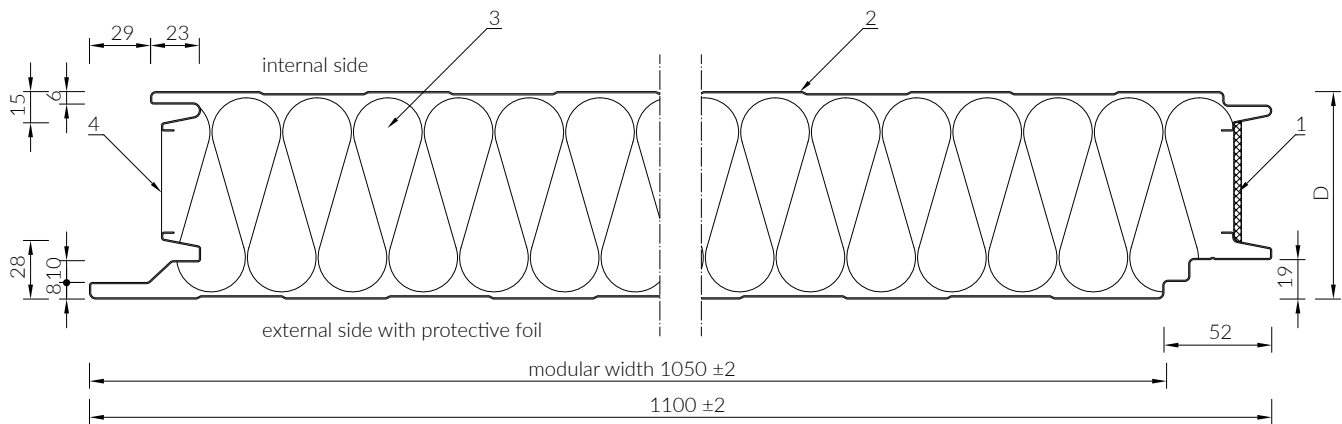


- 1 Fastener
- 2 PaNELTECH wall sandwich panel
- 3 Construction in accordance with building design
- 4 Self adhesive sealant

Select the fastener according to the type and thickness of the construction (steel, wood, reinforced concrete, etc.) and the function of the partition. The number of fasteners is specified in the characteristic loading tables.

WALL SANDWICH PANEL

PUR-SU / PIR-SU

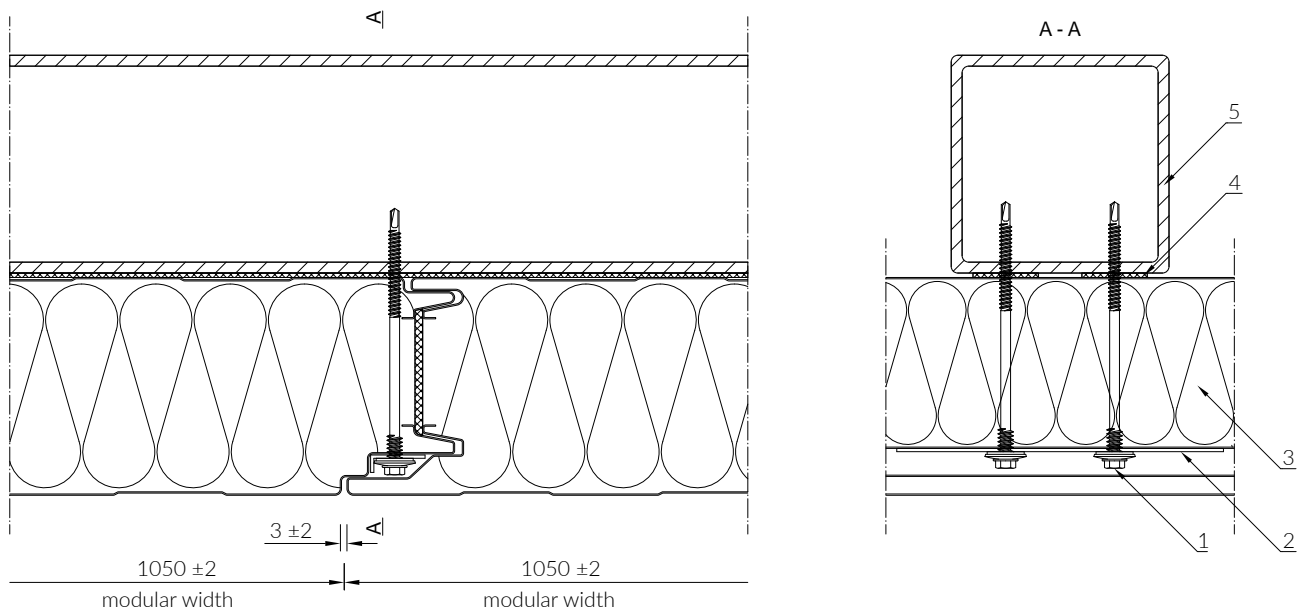


- 1 Polyurethane sealant
- 2 Steel facing
- 3 PUR or PIR core
- 4 Aluminum protective foil

D - panel thickness

The standard modular width of 1050 mm can be optionally changed to 1000 mm. Dimensional tolerance ± 2 mm

WALL PANEL INSTALLATION

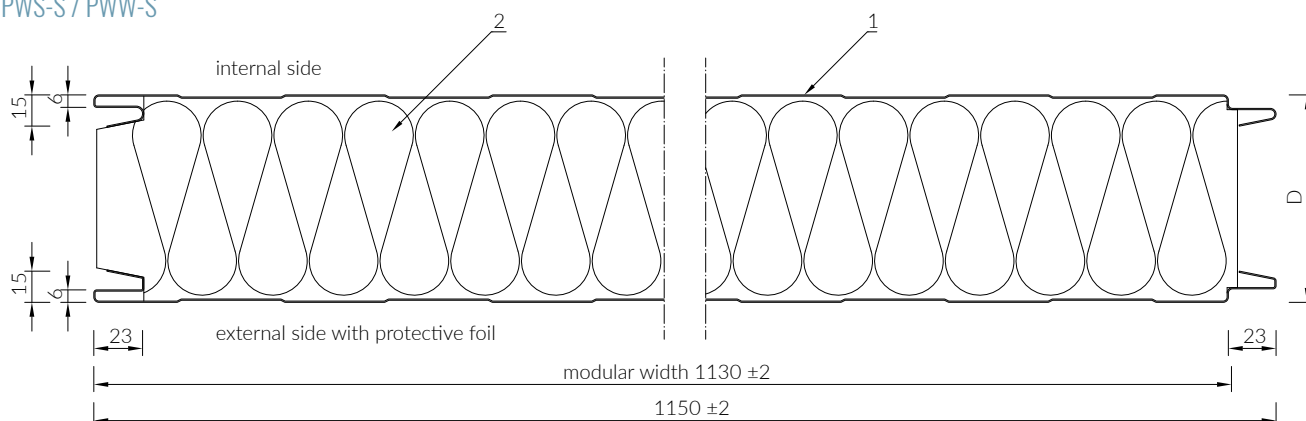


- 1 Fastener
- 2 SU washer
- 3 PaNELTECHwall sandwich panel
- 4 Self adhesive sealant
- 5 Structure as per the construction design

Select the fastener according to the type and thickness of the construction (steel, wood, reinforced concrete, etc.) and the function of the partition. The number of fasteners is specified in the characteristic loading tables .

WALL SANDWICH PANEL

PWS-S / PWW-S

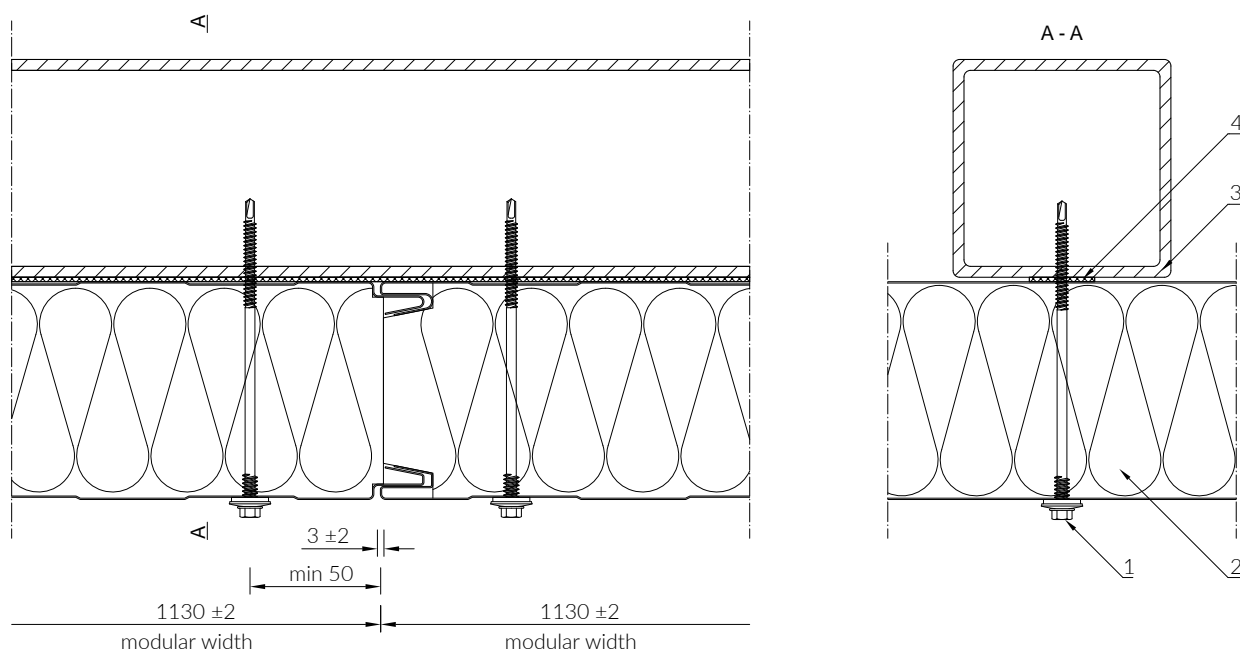


- 1 Steel facing
- 2 EPS or mineral wool core

D - panel thickness

The standard modular width of 1130 mm can be optionally changed to 1000 or 1050 mm. Dimensional tolerance ± 2 mm

WALL PANEL INSTALLATION

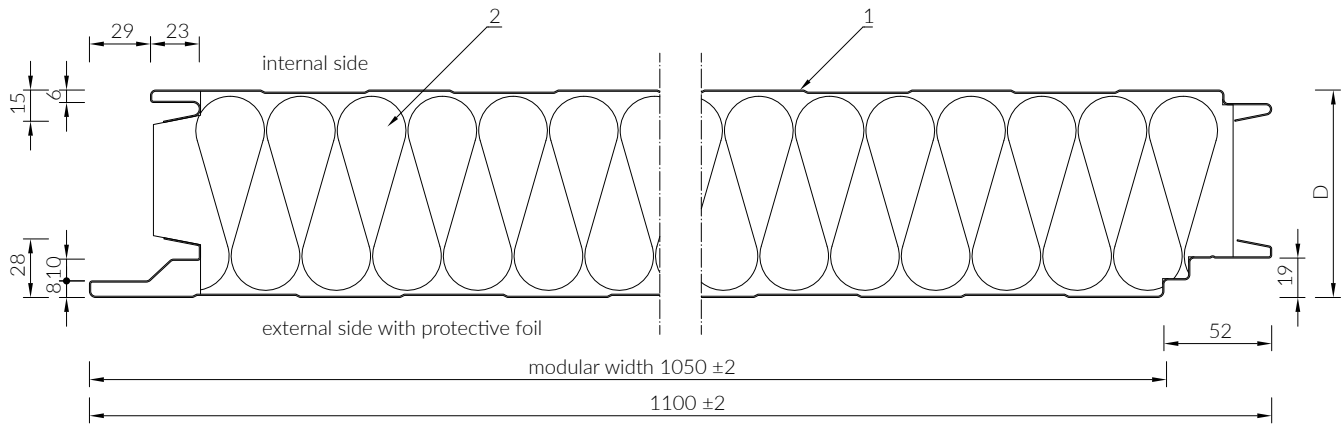


- 1 Fastener
- 2 PaNELTECHwall sandwich panel
- 3 Construction in accordance with building design
- 4 Self adhesive sealant

Select the fastener according to the type and thickness of the construction (steel, wood, reinforced concrete, etc.) and the function of the partition. The number of fasteners is specified in the characteristic loading tables.

WALL SANDWICH PANEL

PWS-SU / PWW-SU



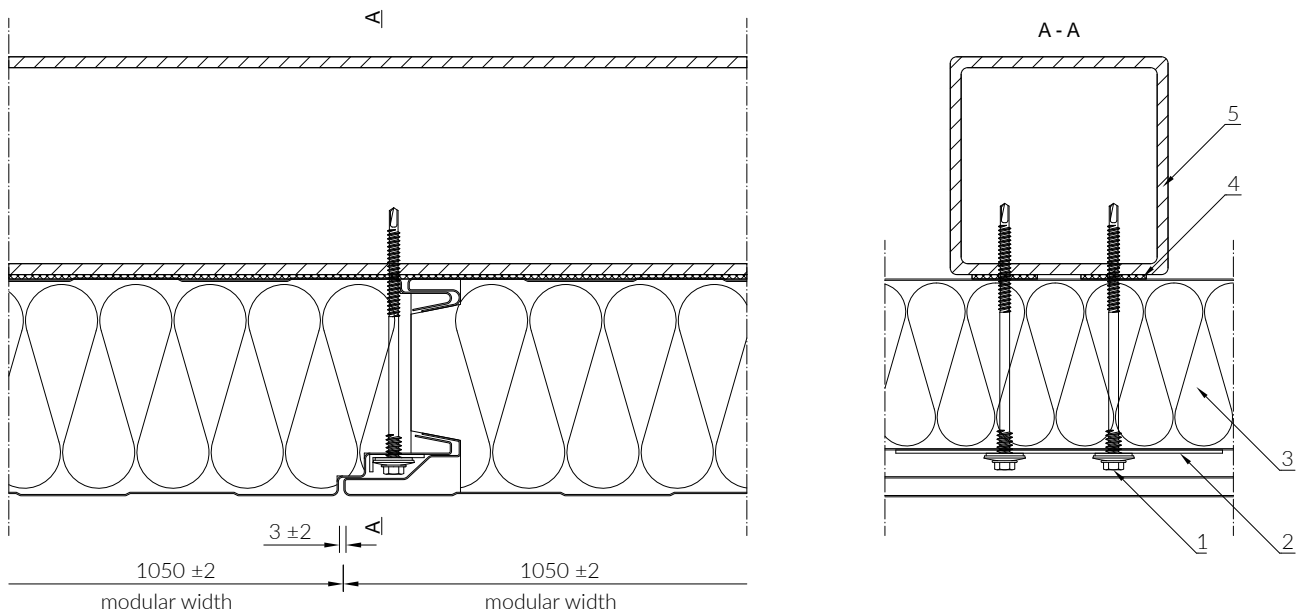
1 Steel facing

2 EPS or mineral wool core

D - panel thickness

The standard modular width of 1050 mm can be optionally changed to 1000 mm. Dimensional tolerance ± 2 mm

WALL PANEL INSTALLATION



1 Fastener

2 SU washer

3 PaNELTECH wall sandwich panel

4 Self adhesive sealant

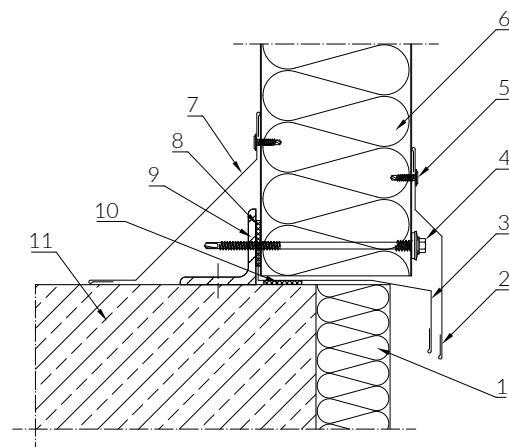
5 Construction in accordance with building design

Select the fastener according to the type and thickness of the construction (steel, wood, reinforced concrete, etc.) and the function of the partition. The number of fasteners is specified in the characteristic loading tables.

WALL PANEL AND GROUND BEAM JOINT

HORIZONTAL AND VERTICAL PANEL LAYOUT

- | | |
|----|---|
| 1 | Thermal insulation of the ground beam |
| 2 | 005 flashing * |
| 3 | 001 flashing |
| 4 | Fastener |
| 5 | Self-drilling screw or blind rivet |
| 6 | PaNELTECH wall sandwich panel |
| 7 | 010 flashing * |
| 8 | Self adhesive sealant |
| 9 | Construction in accordance with building design |
| 10 | Sealant or assembly foam |
| 11 | Ground beam |

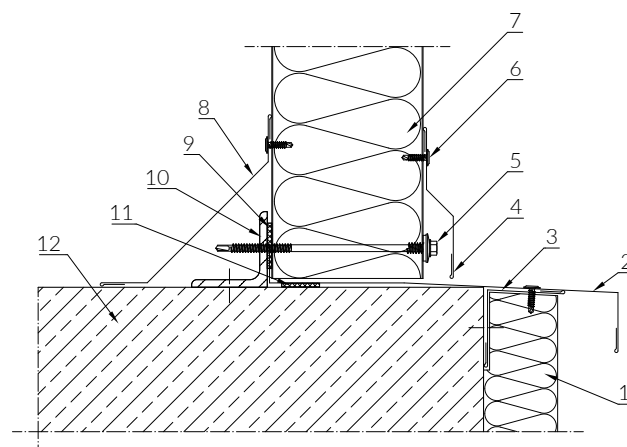


Drawing 1

WALL PANEL AND GROUND BEAM JOINT

HORIZONTAL AND VERTICAL PANEL LAYOUT

- | | |
|----|---|
| 1 | Thermal insulation of the ground beam |
| 2 | 001 flashing |
| 3 | 020 flashing * |
| 4 | 005 flashing * |
| 5 | Fastener |
| 6 | Self-drilling screw or blind rivet |
| 7 | PaNELTECH wall sandwich panel |
| 8 | 010 flashing * |
| 9 | Self adhesive sealant |
| 10 | Construction in accordance with building design |
| 11 | Sealant or assembly foam |
| 12 | Ground beam |

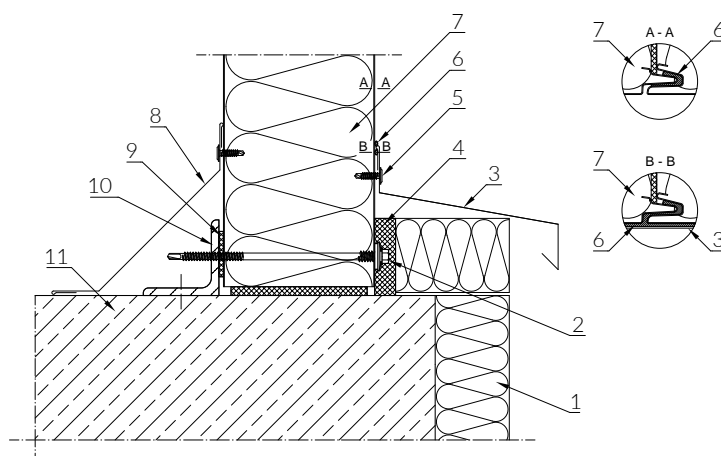


Drawing 2

WALL PANEL AND GROUND BEAM JOINT

VERTICAL PANEL LAYOUT

- | | |
|----|---|
| 1 | Thermal insulation of the ground beam |
| 2 | Fastener |
| 3 | 009 flashing |
| 4 | Sealant or assembly foam |
| 5 | Self-drilling screw or blind rivet |
| 6 | Watertight sealing mass |
| 7 | PaNELTECH wall sandwich panel |
| 8 | 010 flashing * |
| 9 | Self adhesive sealant |
| 10 | Construction in accordance with building design |
| 11 | Ground beam |



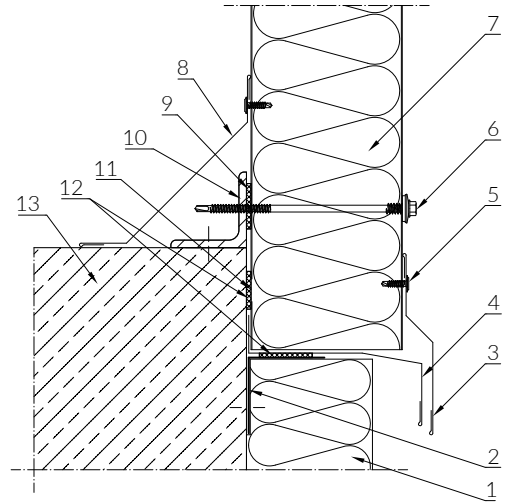
Drawing 3

* optional solution

WALL PANEL AND GROUND BEAM JOINT

HORIZONTAL AND VERTICAL PANEL LAYOUT

- 1 Thermal insulation of the ground beam
- 2 Construction in accordance with building design or 075 flashing
- 3 005 flashing *
- 4 001 flashing
- 5 Self-drilling screw or blind rivet
- 6 Fastener
- 7 PaNELTECH wall sandwich panel
- 8 010 flashing *
- 9 Self adhesive sealant
- 10 Construction in accordance with building design
- 11 Facing cutting executed at the construction site *
- 12 Sealant or assembly foam
- 13 Ground beam

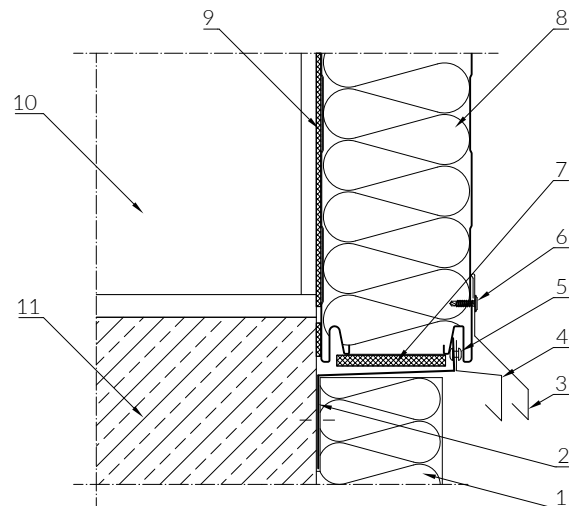


Drawing 4

WALL PANEL AND GROUND BEAM JOINT

HORIZONTAL PANEL LAYOUT

- 1 Thermal insulation of the ground beam
- 2 Construction in accordance with building design or 076 flashing
- 3 007 flashing *
- 4 003 B flashing *
- 5 Blind rivet
- 6 Self-drilling screw or blind rivet
- 7 Thermal insulation
- 8 PaNELTECH wall sandwich panel
- 9 Self adhesive sealant
- 10 Construction in accordance with building design
- 11 Ground beam

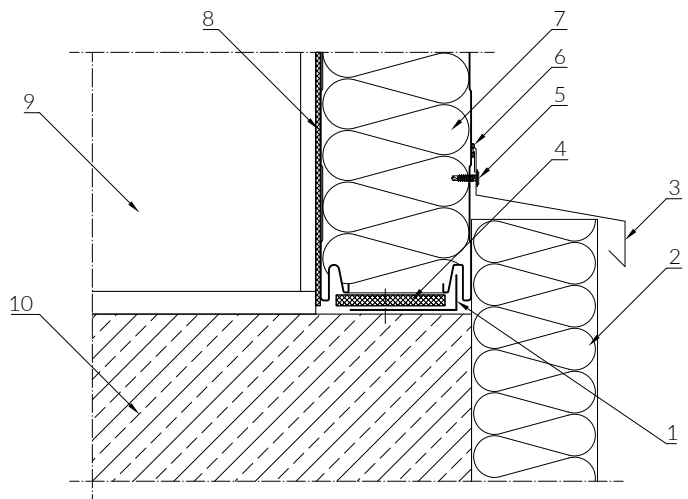


Drawing 5

WALL PANEL AND GROUND BEAM JOINT

HORIZONTAL PANEL LAYOUT

- 1 Construction in accordance with building design or 075 flashing
- 2 Thermal insulation of the ground beam
- 3 009 flashing
- 4 Thermal insulation
- 5 Self-drilling screw or blind rivet
- 6 Watertight sealing mass
- 7 PaNELTECH wall sandwich panel
- 8 Self adhesive sealant
- 9 Construction in accordance with building design
- 10 Ground beam



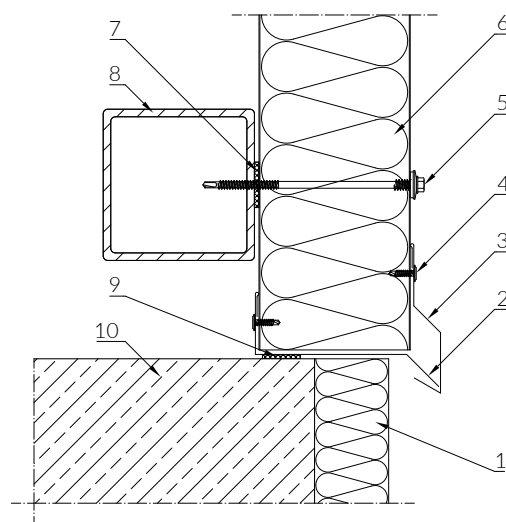
Drawing 6

* optional solution

WALL PANEL AND GROUND BEAM JOINT

HORIZONTAL AND VERTICAL PANEL LAYOUT

- | | |
|----|---|
| 1 | Thermal insulation of the ground beam |
| 2 | 004 flashing |
| 3 | 006 flashing |
| 4 | Self-drilling screw or blind rivet |
| 5 | Fastener |
| 6 | PaNELTECHwall sandwich panel |
| 7 | Self adhesive sealant |
| 8 | Construction in accordance with building design |
| 9 | Sealant or assembly foam |
| 10 | Ground beam |

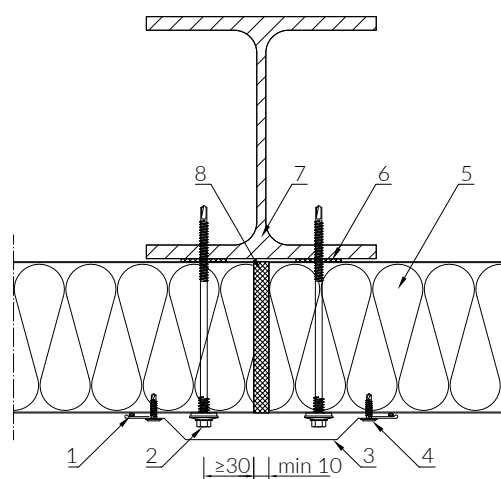


Drawing 7

WALL PANEL AND COLUMN JOINT - THE OUTERMOST SUPPORT

HORIZONTAL PANEL LAYOUT

- | | |
|---|---|
| 1 | Watertight sealing mass in the panel joint* |
| 2 | Fastener |
| 3 | 028 flashing |
| 4 | Self-drilling screw or blind rivet |
| 5 | PaNELTECH wall sandwich panel |
| 6 | Self adhesive sealant |
| 7 | Construction in accordance with building design |
| 8 | Thermal insulation |

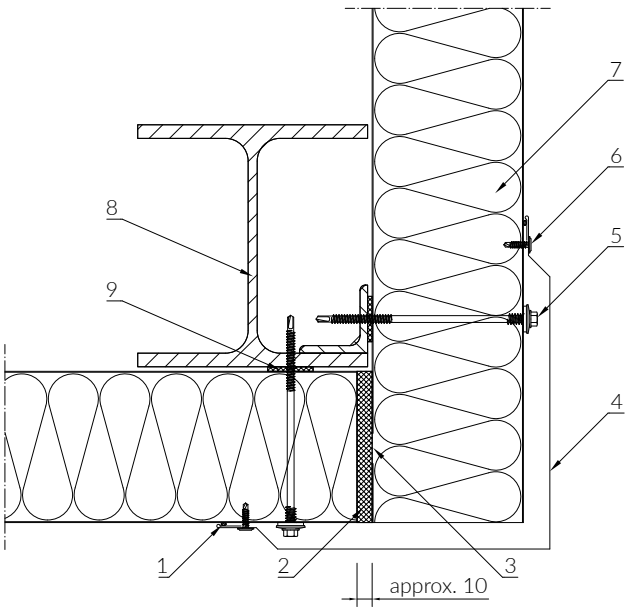


Drawing 8

* optional solution

CORNER WALL PANEL JOINT
HORIZONTAL PANEL LAYOUT

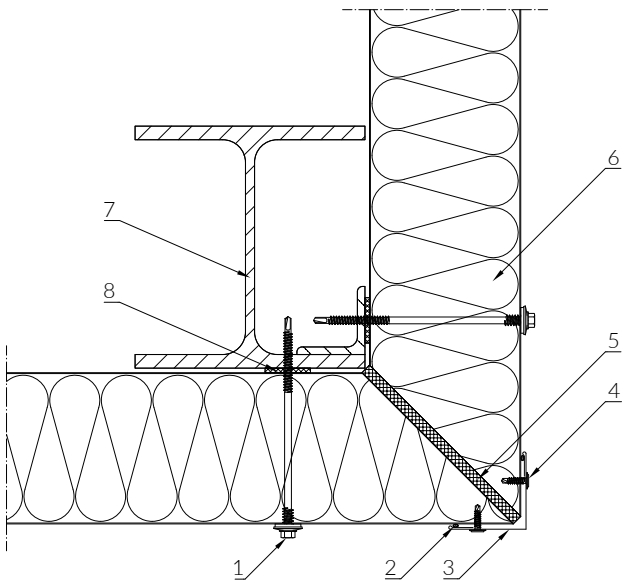
- | | |
|---|--|
| 1 | Watertight sealing mass in the joint* |
| 2 | Thermal insulation |
| 3 | Facing cutting executed at the construction site * |
| 4 | O18 flashing |
| 5 | Fastener |
| 6 | Self-drilling screw or blind rivet |
| 7 | PaNELTECH wall sandwich panel |
| 8 | Construction in accordance with building design |
| 9 | Self adhesive sealant |



Drawing 9

CORNER WALL PANEL JOINT
HORIZONTAL PANEL LAYOUT

- | | |
|---|---|
| 1 | Fastener |
| 2 | Watertight sealing mass in the panel joint* |
| 3 | O15 flashing |
| 4 | Self-drilling screw or blind rivet |
| 5 | Thermal insulation |
| 6 | PaNELTECH wall sandwich panel |
| 7 | Construction in accordance with building design |
| 8 | Self adhesive sealant |



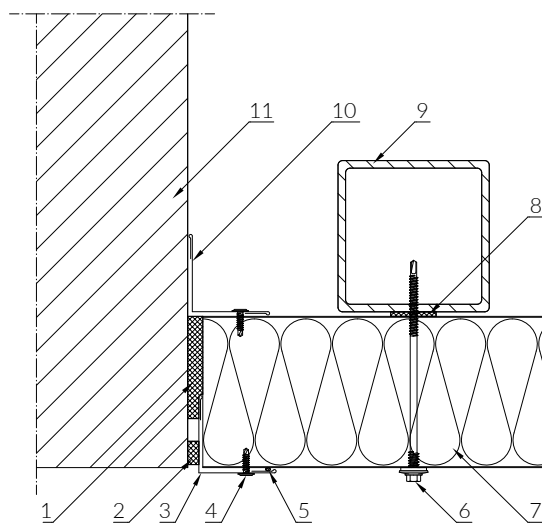
Drawing 10

* optional solution

WALL PANEL AND MASONRY WALL JOINT

HORIZONTAL PANEL LAYOUT

- | | |
|----|---|
| 1 | Thermal insulation |
| 2 | Expanding sealant |
| 3 | O15 flashing |
| 4 | Self-drilling screw or blind rivet |
| 5 | Watertight sealing mass in the panel joint* |
| 6 | Fastener |
| 7 | PaNELTECH wall sandwich panel |
| 8 | Self adhesive sealant |
| 9 | Construction in accordance with building design |
| 10 | O20 flashing |
| 11 | Masonry wall |

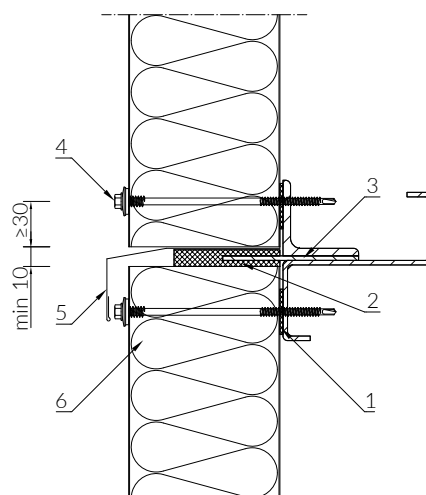


Drawing 11

EXPANDING WALL PANEL JOINT

HORIZONTAL PANEL LAYOUT

- | | |
|---|---|
| 1 | Self adhesive sealant |
| 2 | Thermal insulation |
| 3 | Construction in accordance with building design |
| 4 | Fastener |
| 5 | O01 flashing |
| 6 | PaNELTECH wall sandwich panel |



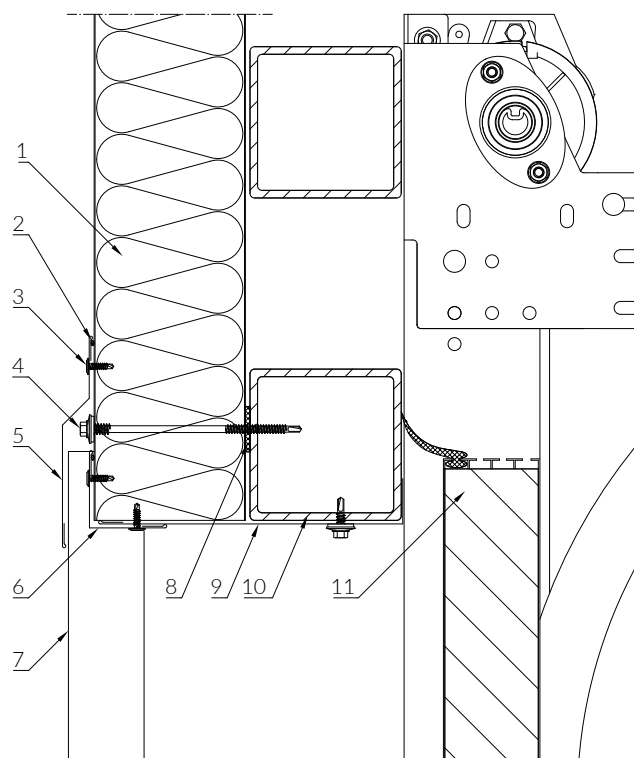
Drawing 12

* optional solution

GATE OPENING - LINTEL

HORIZONTAL AND VERTICAL PANEL LAYOUT

- 1 PaNELTECH wall sandwich panel
- 2 Watertight sealing mass
- 3 Self-drilling screw or blind rivet
- 4 Fastener
- 5 O05 flashing
- 6 O15 flashing
- 7 O47 flashing (view)
- 8 Self adhesive sealant
- 9 O46 flashing
- 10 Construction in accordance with building design
- 11 Sectional gate

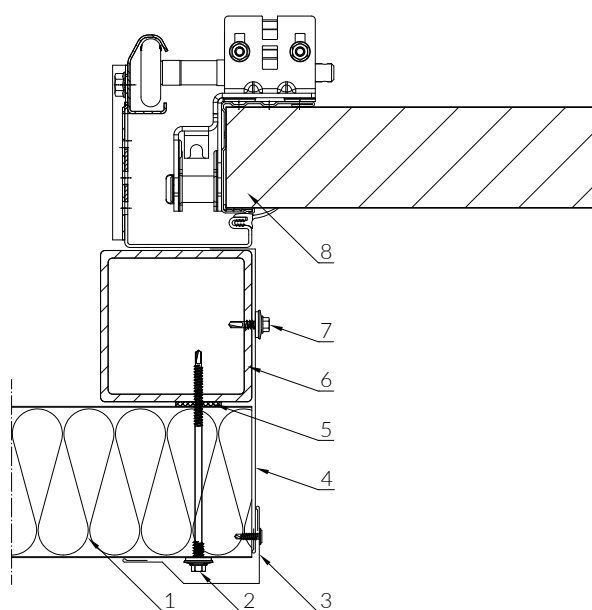


Drawing 13

GATE OPENING - SIDE

HORIZONTAL AND VERTICAL PANEL LAYOUT

- 1 PaNELTECH wall sandwich panel
- 2 Fastener
- 3 O47 flashing
- 4 O46 flashing
- 5 Self adhesive sealant
- 6 Construction in accordance with building design
- 7 Self-drilling screw or blind rivet
- 8 Sectional gate



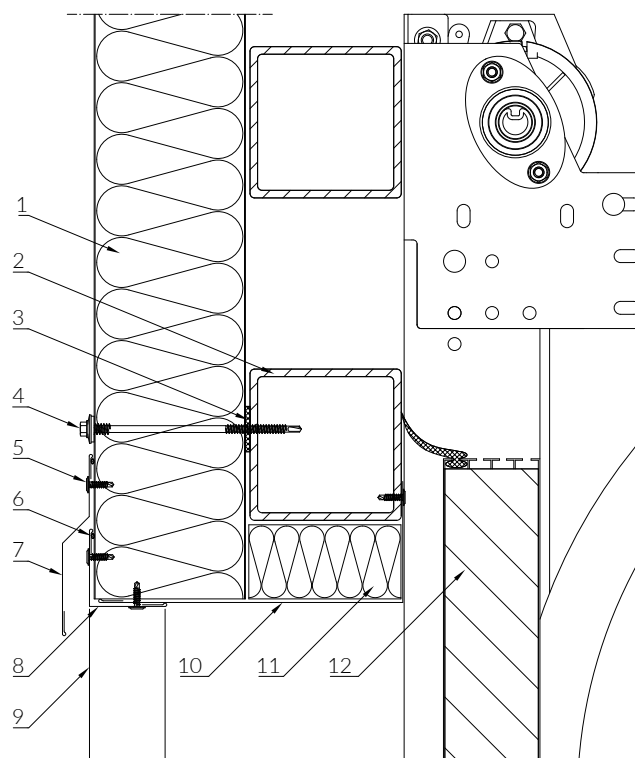
Drawing 14

* optional solution

GATE OPENING - LINTEL

HORIZONTAL AND VERTICAL PANEL LAYOUT

- | | |
|----|---|
| 1 | PaNELTECH wall sandwich panel |
| 2 | Construction in accordance with building design |
| 3 | Self adhesive sealant |
| 4 | Fastener |
| 5 | Self-drilling screw or blind rivet |
| 6 | Watertight sealing mass |
| 7 | O05 flashing |
| 8 | O15 flashing |
| 9 | O15 flashing (view) |
| 10 | O46 flashing |
| 11 | Thermal insulation |
| 12 | Sectional gate |

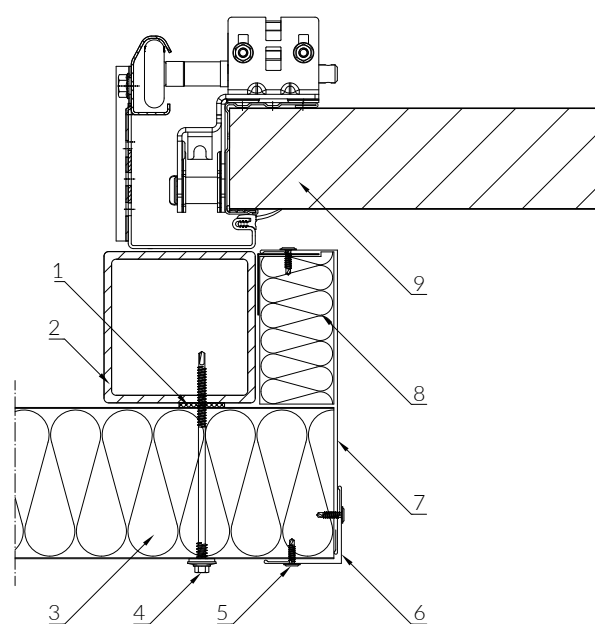


Drawing 15

GATE OPENING - SIDE

HORIZONTAL AND VERTICAL PANEL LAYOUT

- | | |
|---|---|
| 1 | Self adhesive sealant |
| 2 | Construction in accordance with building design |
| 3 | PaNELTECH wall sandwich panel |
| 4 | Fastener |
| 5 | Self-drilling screw or blind rivet |
| 6 | O15 flashing |
| 7 | O16 flashing |
| 8 | Thermal insulation |
| 9 | Sectional gate |

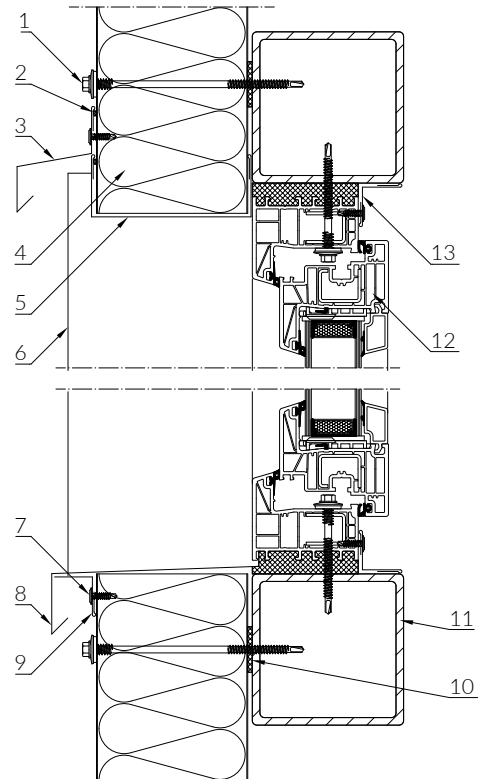


Drawing 16

* optional solution

WINDOW OPENING - VERTICAL CROSS-SECTION HORIZONTAL AND VERTICAL PANEL LAYOUT

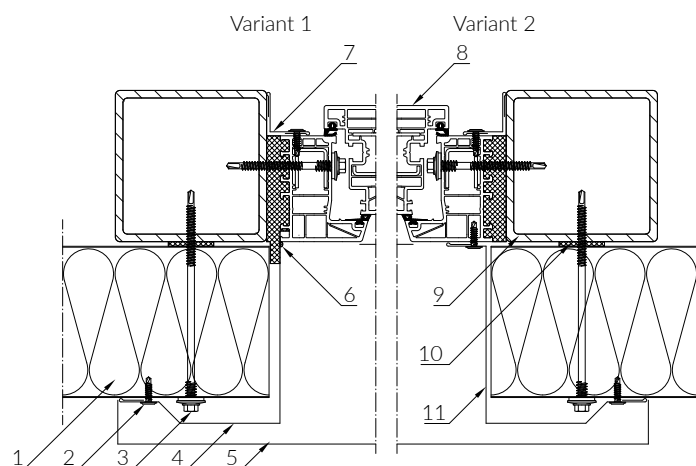
- | | |
|----|---|
| 1 | Fastener |
| 2 | Watertight sealing mass |
| 3 | O09 flashing |
| 4 | PaNELTECH wall sandwich panel |
| 5 | O25 flashing |
| 6 | O56 B, O57 B or O58 B flashing (view) |
| 7 | Self-drilling screw or blind rivet |
| 8 | O51 flashing |
| 9 | O52 flashing |
| 10 | Self adhesive sealant |
| 11 | Construction in accordance with building design |
| 12 | Window |
| 13 | O20 flashing |



Drawing 17

WINDOW OPENING - HORIZONTAL CROSS-SECTION HORIZONTAL AND VERTICAL PANEL LAYOUT

- | | |
|----|---|
| 1 | PaNELTECH wall sandwich panel |
| 2 | Self-drilling screw or blind rivet |
| 3 | Fastener |
| 4 | O58 B flashing |
| 5 | O51 flashing (view) |
| 6 | Watertight sealing mass |
| 7 | O20 flashing |
| 8 | Window |
| 9 | Construction in accordance with building design |
| 10 | Self adhesive sealant |
| 11 | O56 B flashing |

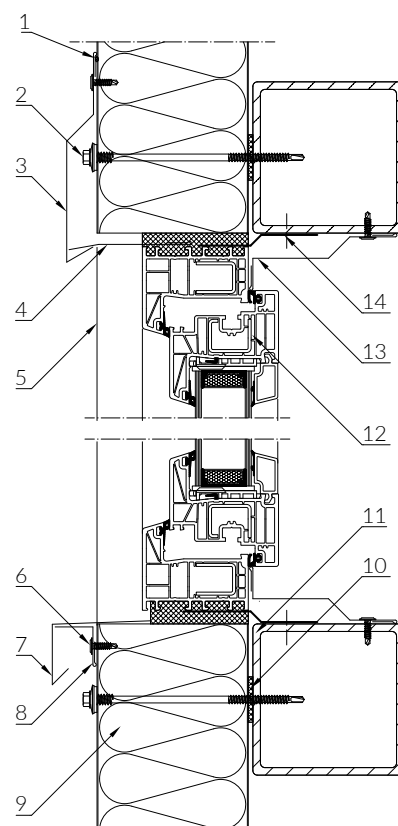


Drawing 18

WINDOW OPENING - VERTICAL CROSS-SECTION

HORIZONTAL AND VERTICAL PANEL LAYOUT

- | | |
|----|---|
| 1 | Watertight sealing mass |
| 2 | Fastener |
| 3 | O06 flashing |
| 4 | O54 B flashing |
| 5 | O16 flashing (view) |
| 6 | Self-drilling screw or blind rivet |
| 7 | O51 flashing |
| 8 | O52 flashing |
| 9 | PaNELTECH wall sandwich panel |
| 10 | Self adhesive sealant |
| 11 | Construction in accordance with building design |
| 12 | Window |
| 13 | O12 flashing |
| 14 | Anchor |



Drawing 19

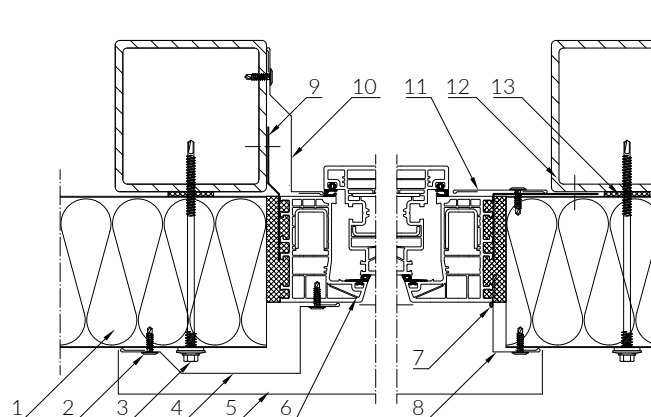
WINDOW OPENING - HORIZONTAL CROSS-SECTION

HORIZONTAL AND VERTICAL PANEL LAYOUT

- | | |
|----|---|
| 1 | PaNELTECH wall sandwich panel |
| 2 | Self-drilling screw or blind rivet |
| 3 | Fastener |
| 4 | O56 B flashing |
| 5 | O51 flashing (view) |
| 6 | Window |
| 7 | Watertight sealing mass |
| 8 | O16 flashing |
| 9 | Anchor |
| 10 | O12 flashing |
| 11 | O26 flashing |
| 12 | Construction in accordance with building design |
| 13 | Self adhesive sealant |

Variant 1

Variant 2



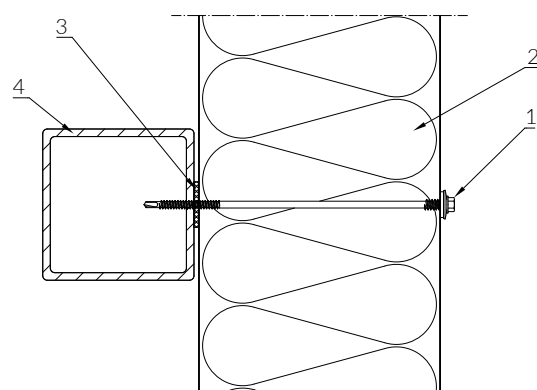
Drawing 20

COLDROOM SANDWICH PANELS

STEEL TIE FOR COLDROOM PANELS

WALL AND CEILING

- 1 Stainless steel fastener Fastener * with a 19 mm washer and an EPDM gasket
- 2 PaNELTECH coldroom sandwich panel
- 3 Self adhesive sealant
- 4 Construction in accordance with building design

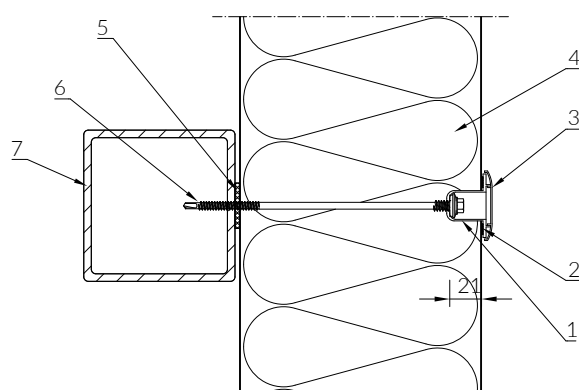


Drawing 21

SWAL LAX TIE FOR COLDROOM PANELS

WALL AND CEILING

- 1 SWAL LAX fastener
- 2 LAX EPDM gasket
- 3 LAX clip
- 4 PaNELTECH coldroom sandwich panel
- 5 Self adhesive sealant
- 6 SWAL tie with a 16 mm washer and an EPDM gasket
- 7 Construction in accordance with building design

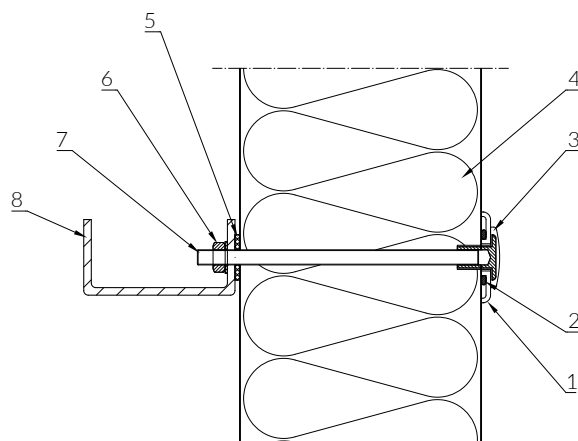


Drawing 22

CASTEL COOL SCREW FOR COLDROOM PANELS

WALL AND CEILING

- 1 CASTEL COOL washer
- 2 Watertight sealing mass
- 3 CASTEL COOL cap
- 4 PaNELTECH coldroom sandwich panel
- 5 Self adhesive sealant
- 6 Nut with washer
- 7 Steel, galvanized threaded bar
- 8 Construction in accordance with building design

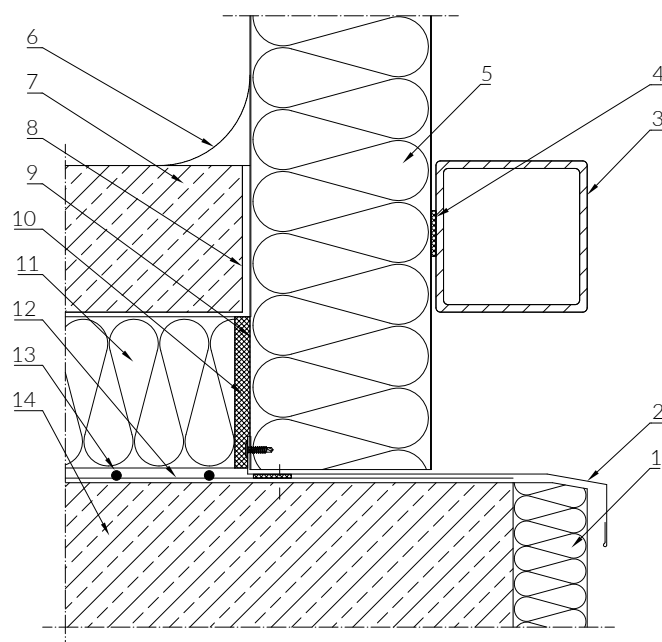


Drawing 23

* optional solution

COLDROOM EXTERNAL WALL PANEL AND FLOOR JOINT COLD AND FREEZER ROOM

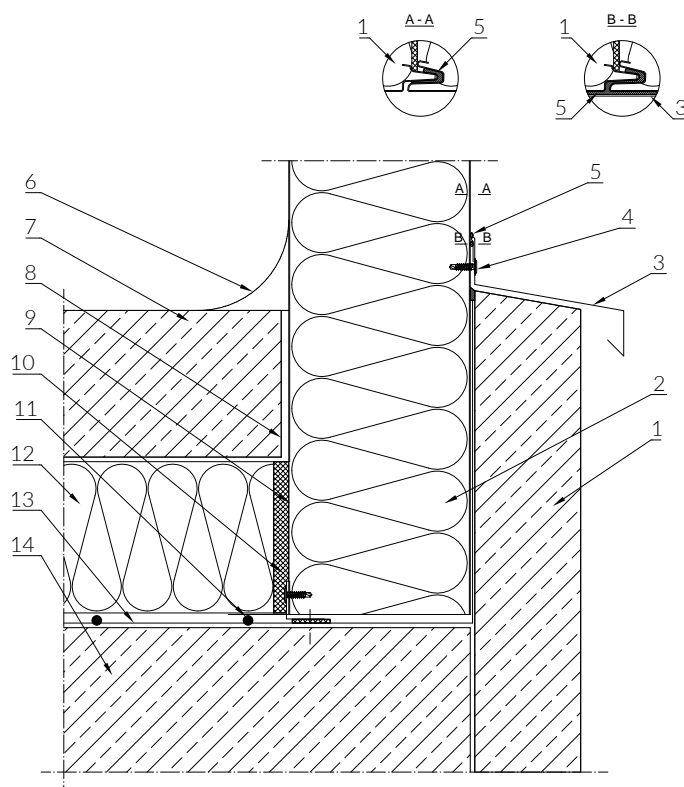
- | | |
|----|---|
| 1 | Thermal insulation of the ground beam |
| 2 | 001 flashing |
| 3 | Construction in accordance with building design |
| 4 | Self adhesive sealant |
| 5 | PaNELTECH coldroom sandwich panel |
| 6 | Rounding or finishing element |
| 7 | Floor |
| 8 | Vapor barrier |
| 9 | Facing removed on the construction site |
| 10 | Thermal insulation |
| 11 | Thermal insulation of the floor |
| 12 | Vapor barrier |
| 13 | Floor heating installation* |
| 14 | Reinforced concrete slab |



Drawing 24

COLDROOM EXTERNAL WALL PANEL AND FLOOR JOINT COLD AND FREEZER ROOM

- | | |
|----|---|
| 1 | External plinth |
| 2 | PaNELTECH coldroom sandwich panel |
| 3 | 009 flashing |
| 4 | Self-drilling screw or blind rivet |
| 5 | Watertight sealing mass |
| 6 | Rounding or finishing element |
| 7 | Floor |
| 8 | Vapor barrier |
| 9 | Facing removed on the construction site |
| 10 | Thermal insulation |
| 11 | Floor heating installation* |
| 12 | Thermal insulation of the floor |
| 13 | Vapor barrier |
| 14 | Reinforced concrete slab |



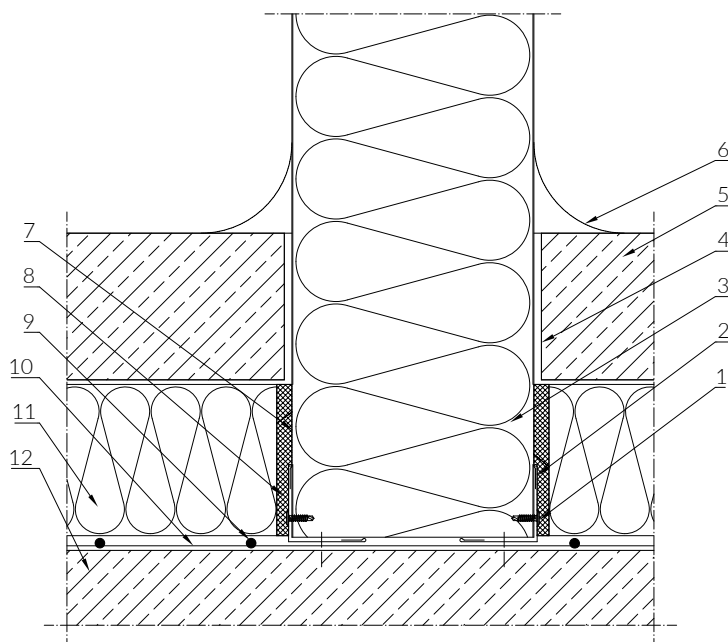
Drawing 25

* optional solution

COLDROOM INTERNAL WALL PANEL AND FLOOR JOINT

COLD AND FREEZER ROOM

- 1 Self-drilling screw or blind rivet
- 2 O15 flashing
- 3 PaNELTECH coldroom sandwich panel
- 4 Vapor barrier
- 5 Floor
- 6 Rounding or finishing element
- 7 Facing removed on the construction site
- 8 Thermal insulation
- 9 Floor heating installation*
- 10 Vapor barrier
- 11 Thermal insulation of the floor
- 12 Reinforced concrete slab

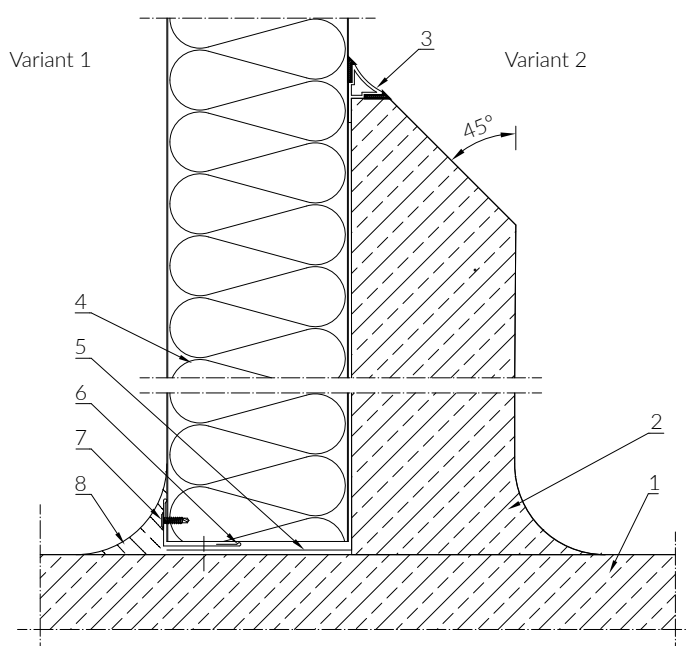


Drawing 26

COLDROOM PANEL AND FLOOR JOINT FINISH

COLDROOM

- 1 Reinforced concrete slab
- 2 Concrete plinth in accordance with building design
- 3 CASTEL COOL finishing profile
- 4 PaNELTECH coldroom sandwich panel
- 5 Vapor barrier
- 6 O16 flashing
- 7 Self-drilling screw or blind rivet
- 8 Floor rounding

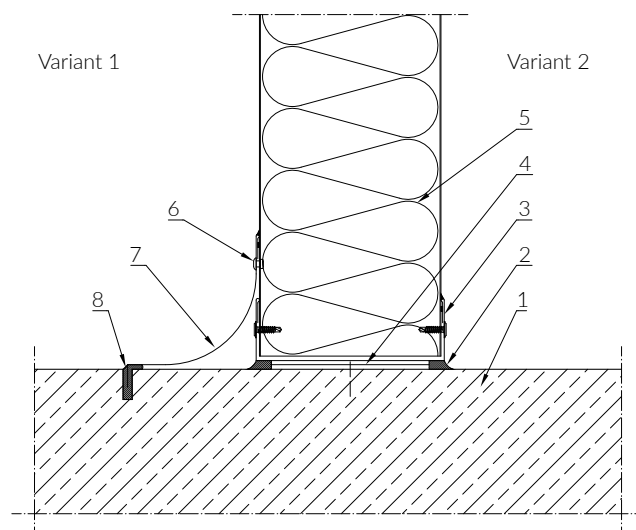


Drawing 27

* optional solution

COLDROOM PANEL AND FLOOR JOINT FINISH

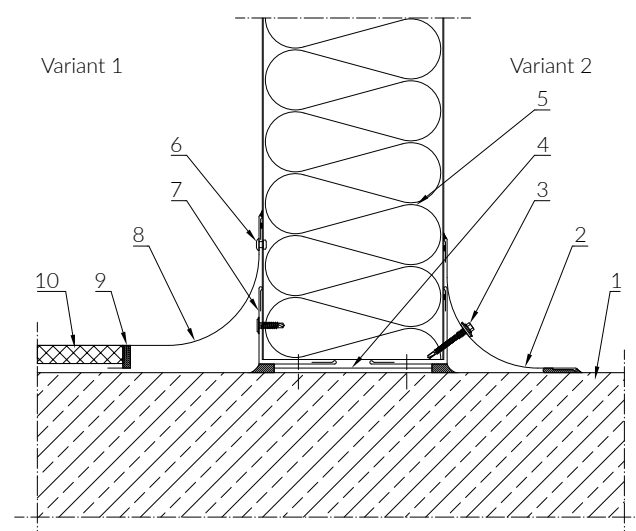
- 1 Reinforced concrete slab
- 2 Watertight sealing mass
- 3 025 flashing
- 4 Vapor barrier
- 5 PaNELTECH coldroom sandwich panel
- 6 Self-drilling screw or blind rivet
- 7 024 flashing
- 8 Watertight sealing mass



Drawing 28

COLDROOM PANEL AND FLOOR JOINT FINISH

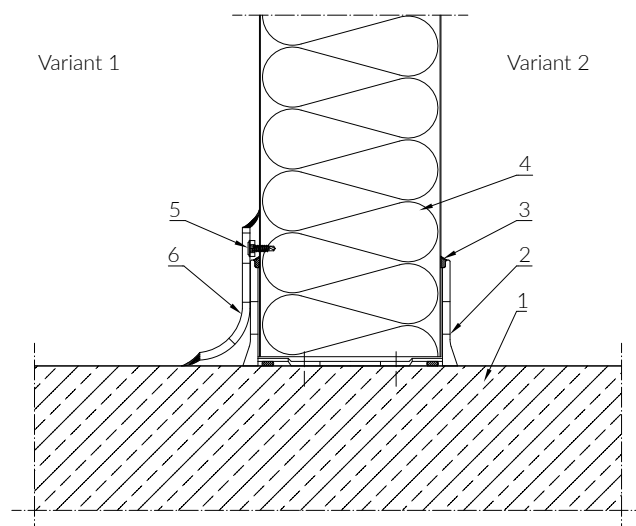
- 1 Reinforced concrete slab
- 2 022 flashing
- 3 Stainless self-drilling screw
- 4 Vapor barrier
- 5 PaNELTECH coldroom sandwich panel
- 6 Self-drilling screw or blind rivet
- 7 015 flashing
- 8 023 flashing
- 9 Watertight sealing mass
- 10 Ceramic tiles



Drawing 29

COLDROOM PANEL AND FLOOR JOINT FINISH

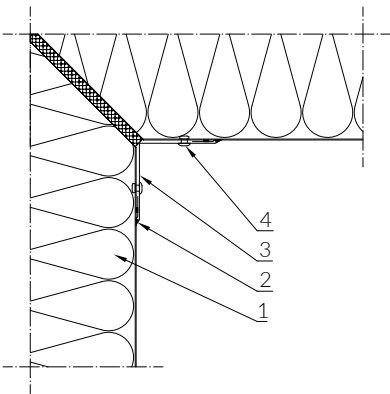
- 1 Reinforced concrete slab
- 2 PVC starting profile, type U
- 3 Watertight sealing mass
- 4 PaNELTECH coldroom sandwich panel
- 5 Self-drilling screw or blind rivet
- 6 PVC plinth profile



Drawing 30

INTERNAL CORNER FINISHING

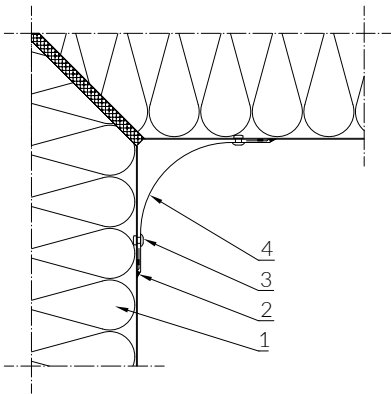
- | | |
|---|------------------------------------|
| 1 | PaNELTECH coldroom sandwich panel |
| 2 | Watertight sealing mass |
| 3 | O20 flashing |
| 4 | Self-drilling screw or blind rivet |



Drawing 31

INTERNAL CORNER FINISHING

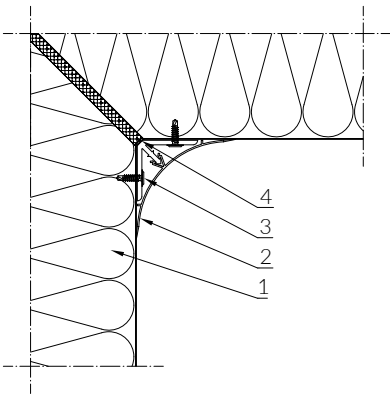
- | | |
|---|------------------------------------|
| 1 | PaNELTECH coldroom sandwich panel |
| 2 | Watertight sealing mass |
| 3 | Self-drilling screw or blind rivet |
| 4 | O22 flashing |



Drawing 32

INTERNAL CORNER FINISHING

- | | |
|---|------------------------------------|
| 1 | PaNELTECH coldroom sandwich panel |
| 2 | Rounded PVC corner profile |
| 3 | Self-drilling screw or blind rivet |
| 4 | Watertight sealing mass |

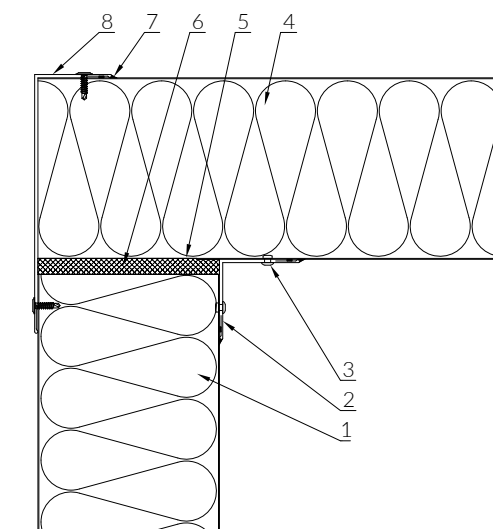


Drawing 33

WALL AND CEILING JOINT

COLD AND FREEZER ROOM

- 1 Wall - PaNELTECH sandwich panel
- 2 O20 flashing
- 3 Self-drilling screw or blind rivet
- 4 Ceiling - PaNELTECH sandwich panel
- 5 Facing removed on the construction site
- 6 Thermal insulation
- 7 Watertight sealing mass
- 8 O16 flashing

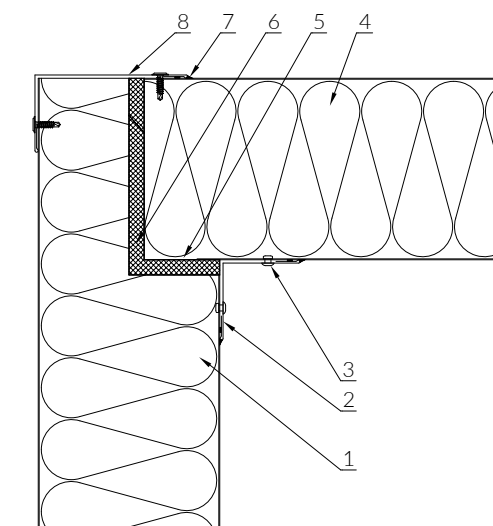


Drawing 34

WALL AND CEILING JOINT

COLD AND FREEZER ROOM

- 1 Wall - PaNELTECH sandwich panel
- 2 O20 flashing
- 3 Self-drilling screw or blind rivet
- 4 Ceiling - PaNELTECH sandwich panel
- 5 Facing removed on the construction site
- 6 Thermal insulation
- 7 Watertight sealing mass
- 8 O16 flashing

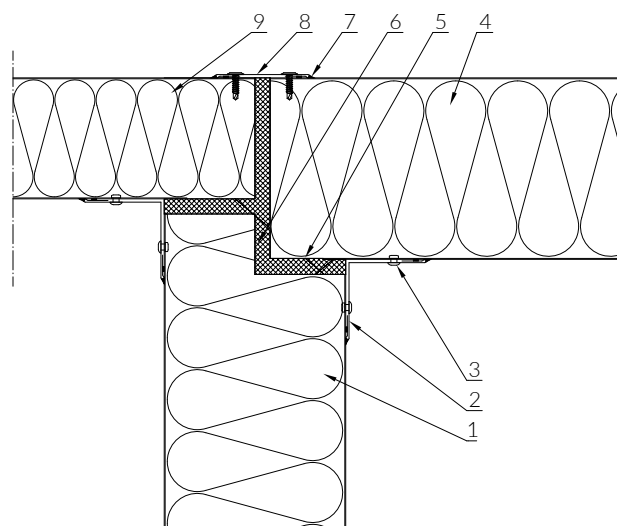


Drawing 35

WALL AND CEILING JOINT

COLD AND FREEZER ROOM

- 1 Wall - PaNELTECH sandwich panel
- 2 O20 flashing
- 3 Self-drilling screw or blind rivet
- 4 Ceiling - PaNELTECH sandwich panel
- 5 Facing removed on the construction site
- 6 Thermal insulation
- 7 Watertight sealing mass
- 8 O26 flashing
- 9 Ceiling - PaNELTECH sandwich panel

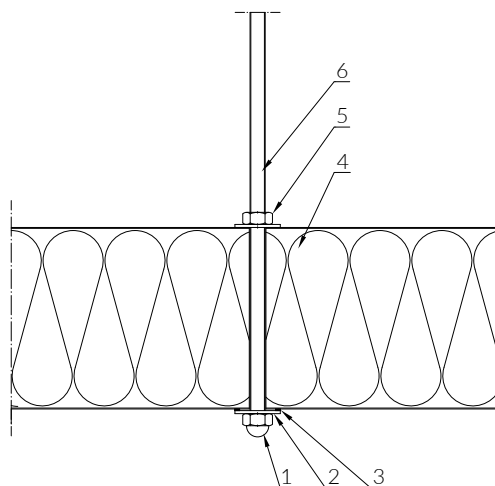


Drawing 36

CEILING SUSPENDED ON A WALL PANEL

COLD AND FREEZERROOM

- 1 Stainless steel acorn cap
- 2 Stainless steel washer
- 3 Watertight sealing mass
- 4 Ceiling - PaNELTECH sandwich panel
- 5 Nut
- 6 Threaded rod made of stainless steel

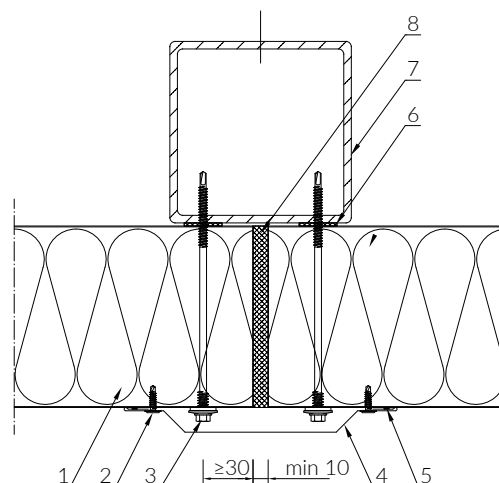


Drawing 37

CEILING SUSPENDED ON A WALL PANEL

COLD AND FREEZERROOM

- 1 Ceiling - PaNELTECH sandwich panel
- 2 Self-drilling screw or blind rivet
- 3 Stainless steel fastener * with a 19 mm washer and an EPDM seal
- 4 O28 flashing
- 5 Watertight sealing mass
- 6 Self adhesive sealant
- 7 Construction in accordance with building design
- 8 Thermal insulation

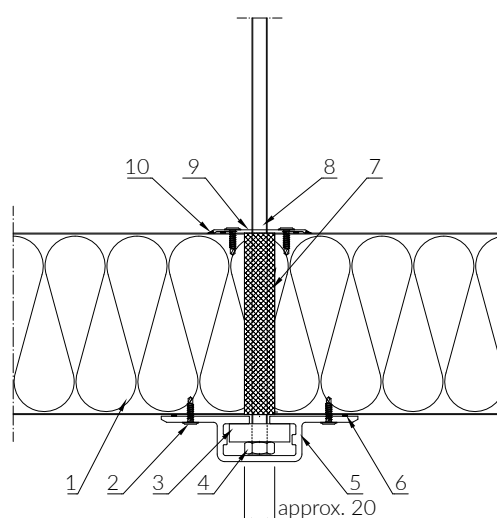


Drawing 38

CEILING SUSPENDED ON A WALL PANEL

COLD AND FREEZERROOM

- 1 Ceiling - PaNELTECH sandwich panel
- 2 Self-drilling screw or blind rivet
- 3 Omega-profiled washer
- 4 Cap
- 5 Omega profile
- 6 Watertight sealing mass
- 7 Thermal insulation
- 8 Threaded bar
- 9 O26 flashing
- 10 Watertight sealing mass



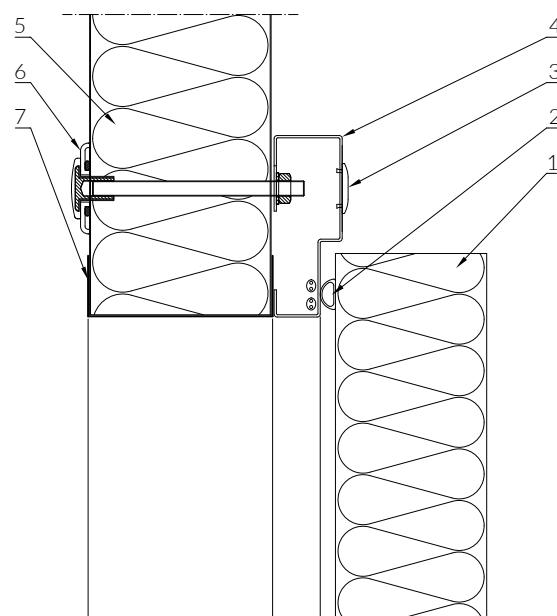
Drawing 39

* optional solution

COLDROOM DOOR INSTALLED IN A WALL PANEL

LINTEL AND SIDE

- | | |
|---|----------------------------------|
| 1 | Coldroom door leaf |
| 2 | Coldroom door leaf seal |
| 3 | Masking clip |
| 4 | Door frame with a heating cable* |
| 5 | PaNELTECH wall sandwich panel |
| 6 | CASTEL COOL fastener |
| 7 | Door opening flashing |

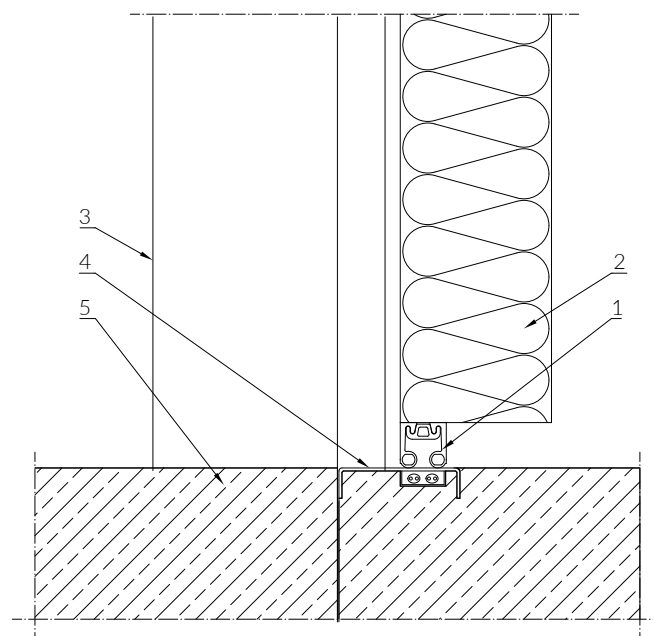


Drawing 40

COLDROOM DOOR INSTALLED IN A WALL PANEL

THRESHOLD

- | | |
|---|---------------------------------|
| 1 | Coldroom door leaf seal |
| 2 | Coldroom door leaf |
| 3 | Door opening flashing view |
| 4 | Threshold with a heating cable* |
| 5 | Cold store floor |



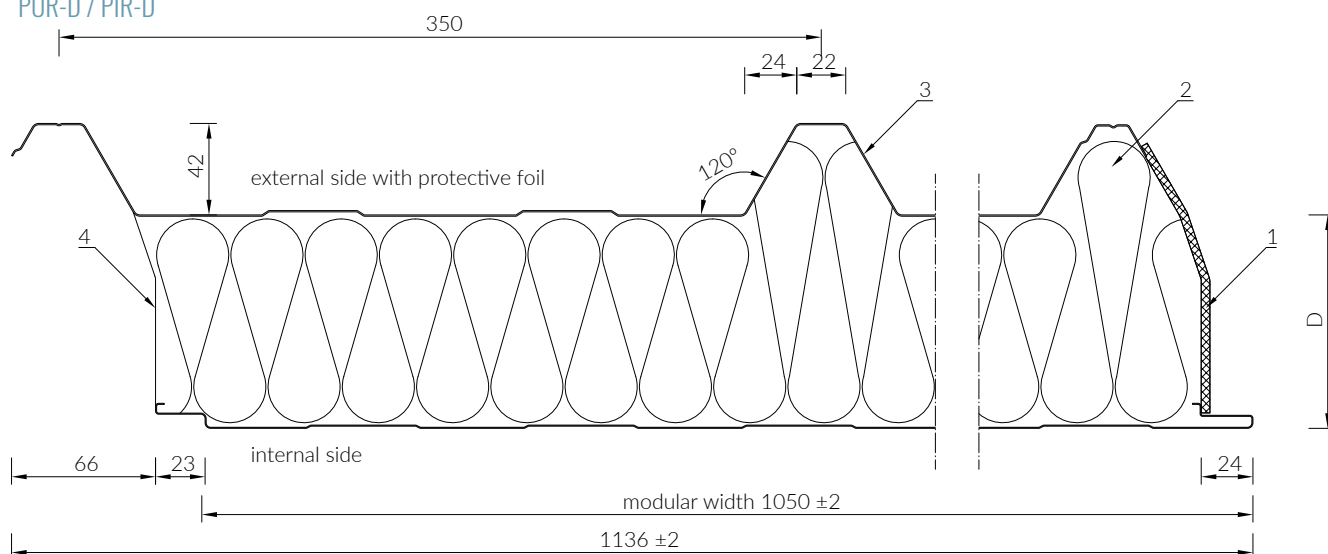
Drawing 41

* optional solution

ROOF SANDWICH PANELS

ROOF SANDWICH PANEL

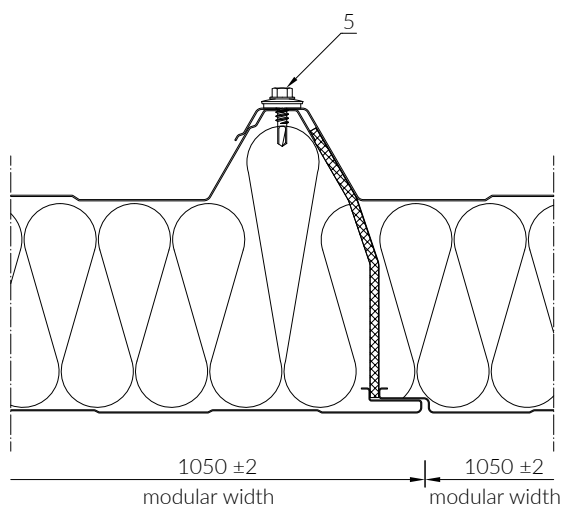
PUR-D / PIR-D



- 1 Polyurethane seal
- 2 PUR or PIR core
- 3 Steel facing
- 4 Aluminum protective foil

D - panel thickness
Dimensional tolerance ± 2 mm

ROOF PANEL INSTALLATION

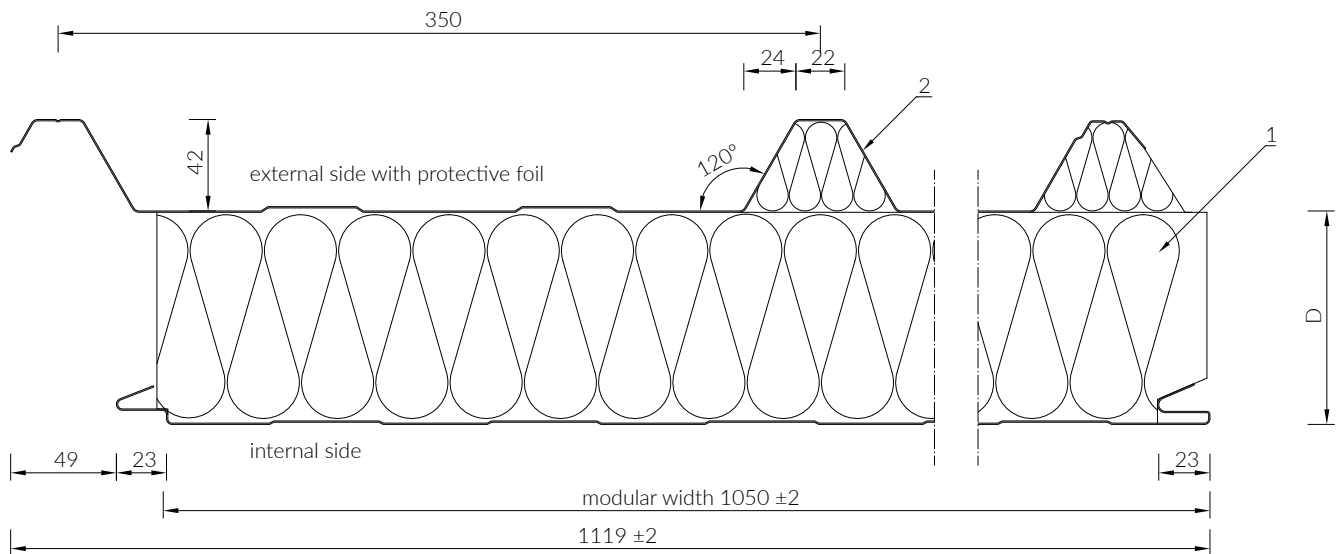


- 1 Construction in accordance with building design
- 2 Self adhesive sealant
- 3 PaNELTECH roof sandwich panel
- 4 fastener
- 5 Self-drilling screw with a seal every ca. 300-400 mm

Select the tie according to the type and thickness of the underlying structure (steel, wood, reinforced concrete, etc.)
The number of fasteners is specified in the characteristic loading tables.

ROOF SANDWICH PANEL

PWS-D / PWW-D



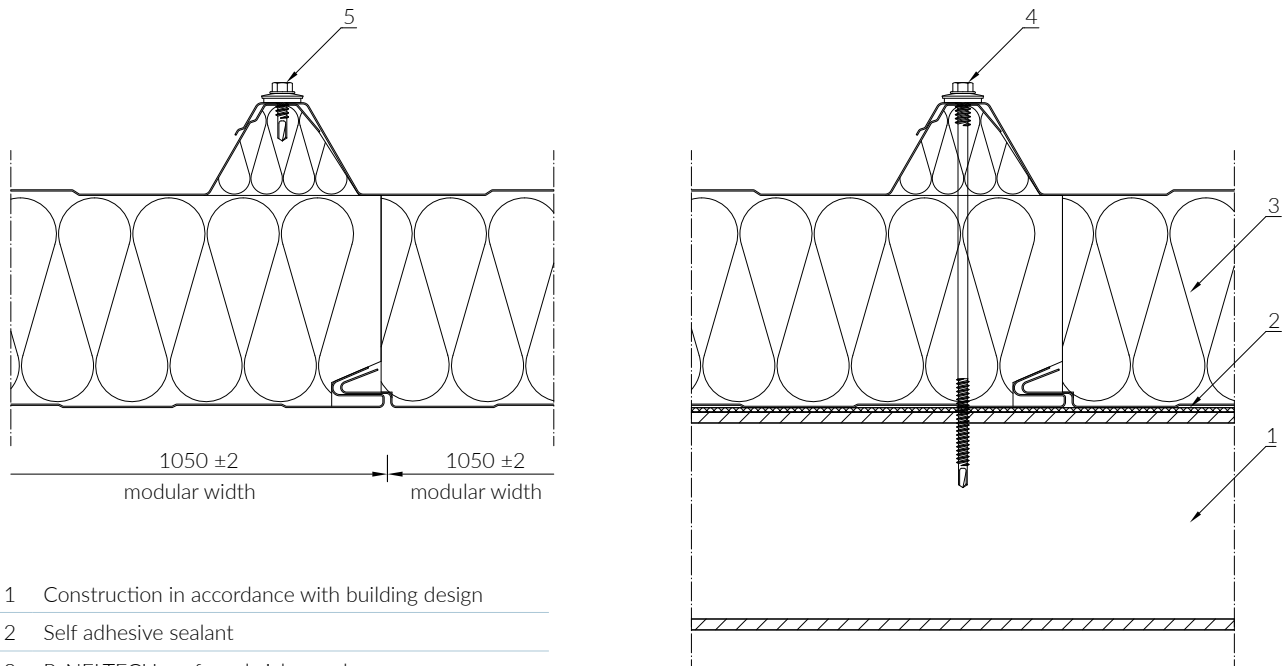
1 EPS or mineral wool core

2 Steel facing

D - panel thickness

Dimensional tolerance ±2 mm

ROOF PANEL INSTALLATION



1 Construction in accordance with building design

2 Self adhesive sealant

3 PaNELTECH roof sandwich panel

4 fastener

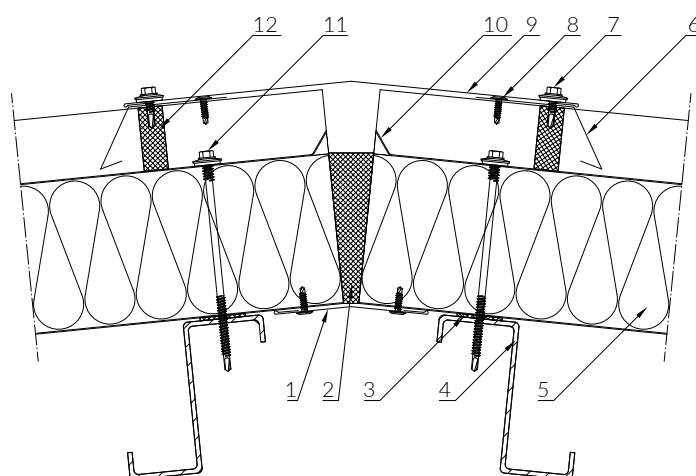
5 Self-drilling screw with a seal every ca. 300-400 mm

Select the tie according to the type and thickness of the underlying structure (steel, wood, reinforced concrete, etc.).
The number of ties is specified in the load tables.

ROOF PANEL JOINT

RIDGE

- 1 103 flashing
- 2 Thermal insulation
- 3 Self adhesive sealant
- 4 Construction in accordance with building design
- 5 PaNELTECH roof sandwich panel
- 6 102 flashing
- 7 Self-drilling screw with a seal
- 8 Self-drilling screw or blind rivet
- 9 101 flashing
- 10 Facing bending executed at the construction site *
- 11 fastener
- 12 UD42 seal

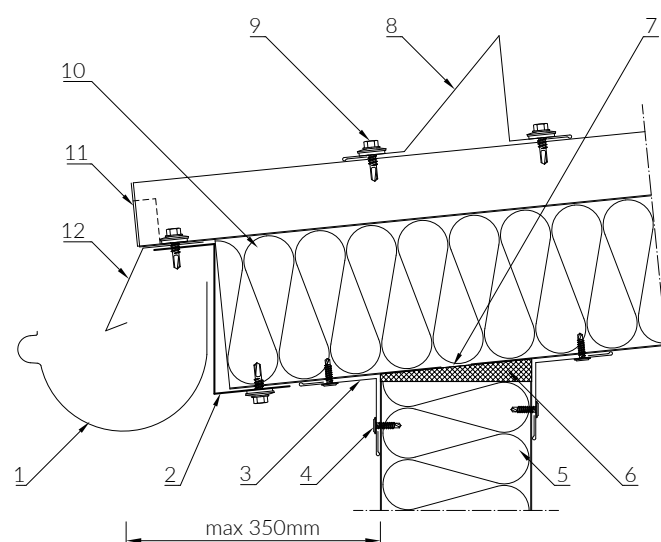


Drawing 42

ROOF PANEL AND WALL PANEL JOINT

GUTTERED EAVES

- 1 Gutter system
- 2 130 flashing
- 3 O20 flashing
- 4 Self-drilling screw or blind rivet
- 5 PaNELTECH wall sandwich panel
- 6 Thermal insulation
- 7 Facing cutting executed at the construction site *
- 8 111 flashing *
- 9 Self-drilling screw with a seal
- 10 PaNELTECH roof sandwich panel
- 11 Z42 roof end cap *
- 12 110 flashing

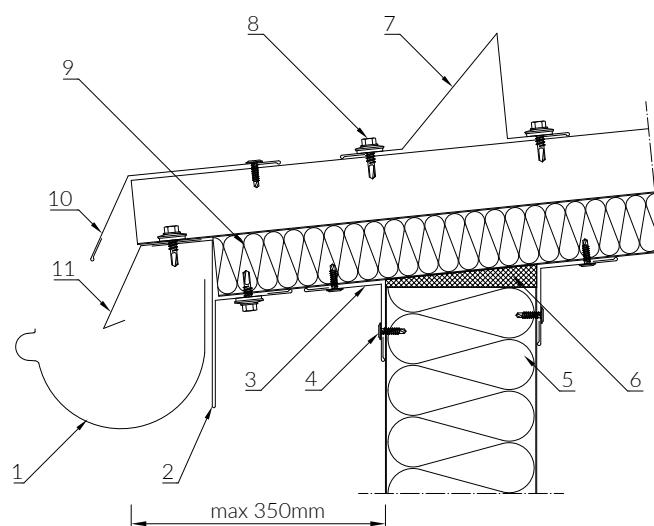


Drawing 43

ROOF PANEL AND WALL PANEL JOINT

GUTTERED EAVES - RECOMMENDED SOLUTION FOR 40-90 MM THICK PANELS

- 1 Gutter system
- 2 131 flashing
- 3 O20 flashing
- 4 Self-drilling screw or blind rivet
- 5 PaNELTECH wall sandwich panel
- 6 Thermal insulation
- 7 111 flashing *
- 8 Self-drilling screw with a seal
- 9 PaNELTECH roof sandwich panel
- 10 109 flashing *
- 11 110 flashing



Drawing 44

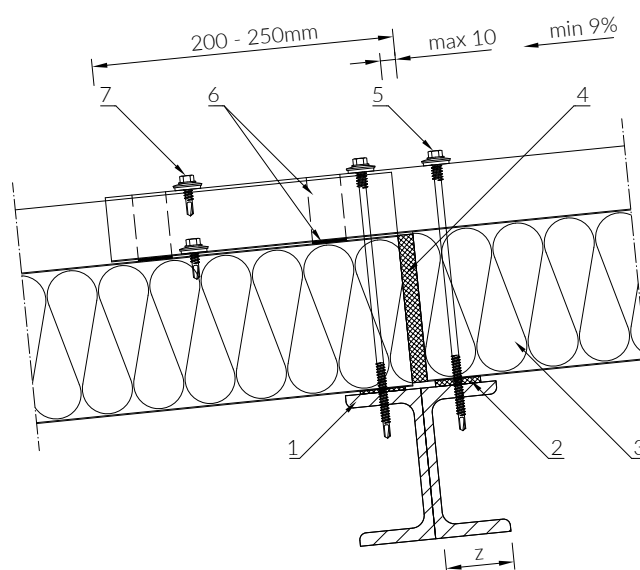
* optional solution

EXPANDING ROOF PANEL JOINT

CROSSWISE JOINT

- 1 Construction in accordance with building design
- 2 Self adhesive sealant
- 3 PaNELTECH roof sandwich panel
- 4 Thermal insulation
- 5 fastener
- 6 Watertight sealing mass
- 7 Self-drilling screw with a seal (every ca. 120mm)

z - minimum width of the outermost support

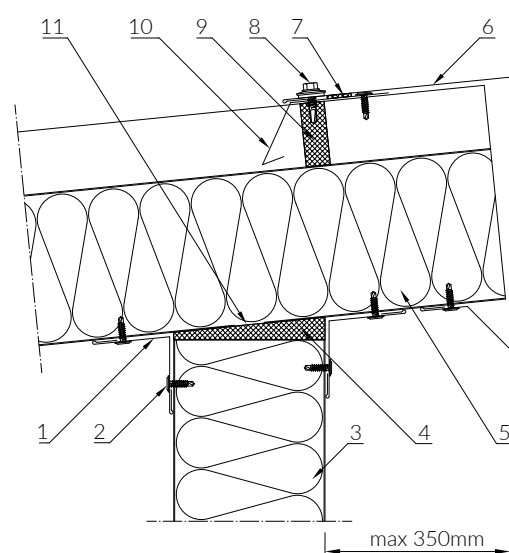


Drawing 45

ROOF PANEL AND WALL PANEL JOINT

SINGLE-SLOPED ROOF EAVES

- 1 O20 flashing
- 2 Self-drilling screw or blind rivet
- 3 PaNELTECH wall sandwich panel
- 4 Thermal insulation
- 5 PaNELTECH roof sandwich panel
- 6 106 flashing
- 7 Watertight sealing mass *
- 8 Self-drilling screw with a seal
- 9 UD42 seal
- 10 102 flashing
- 11 Facing cutting executed at the construction site *

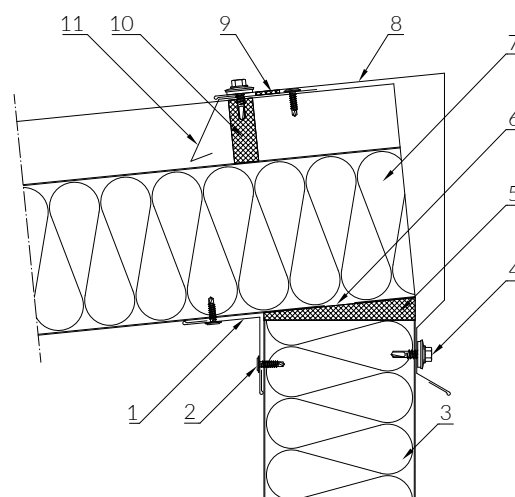


Drawing 46

ROOF PANEL AND WALL PANEL JOINT

EAVELESS SINGLE-SLOPED ROOF

- 1 O20 flashing
- 2 Self-drilling screw or blind rivet
- 3 PaNELTECH wall sandwich panel
- 4 Self-drilling screw with a seal
- 5 Thermal insulation
- 6 Facing cutting executed at the construction site *
- 7 PaNELTECH roof sandwich panel
- 8 104 flashing
- 9 Watertight sealing mass *
- 10 UD42 seal
- 11 102 flashing



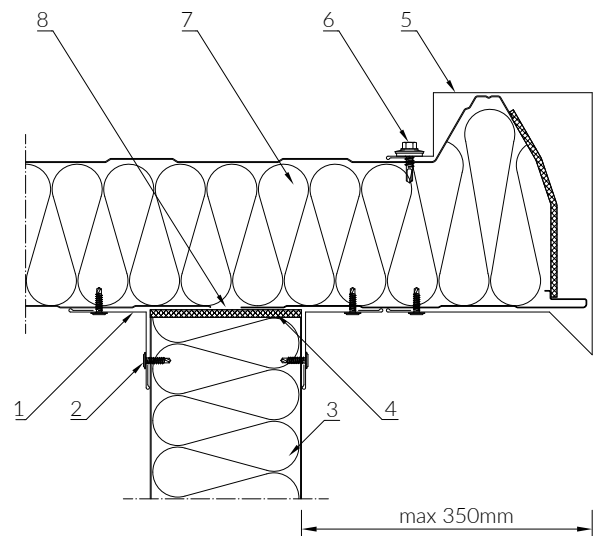
Drawing 47

* optional solution

ROOF PANEL AND WALL PANEL JOINT

GABLE EAVES

- | | |
|---|--|
| 1 | O20 flashing |
| 2 | Self-drilling screw or blind rivet |
| 3 | PaNELTECH wall sandwich panel |
| 4 | Thermal insulation |
| 5 | 107 flashing |
| 6 | Self-drilling screw with a seal |
| 7 | PaNELTECH roof sandwich panel |
| 8 | Facing cutting executed at the construction site * |

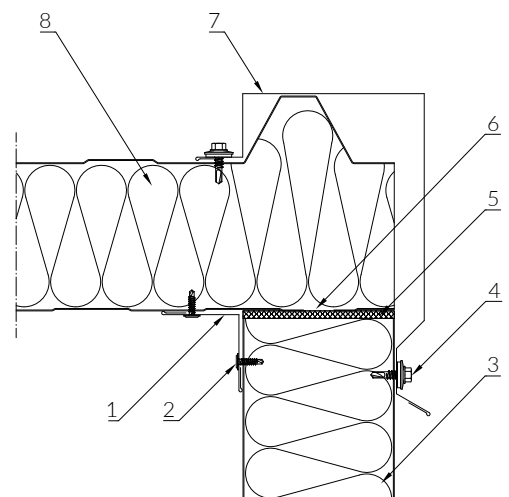


Drawing 48

ROOF PANEL AND WALL PANEL JOINT

EAVELESS GABLE

- | | |
|---|--|
| 1 | O20 flashing |
| 2 | Self-drilling screw or blind rivet |
| 3 | PaNELTECH wall sandwich panel |
| 4 | Self-drilling screw with a seal |
| 5 | Thermal insulation |
| 6 | Facing cutting executed at the construction site * |
| 7 | 105 flashing |
| 8 | PaNELTECH roof sandwich panel |



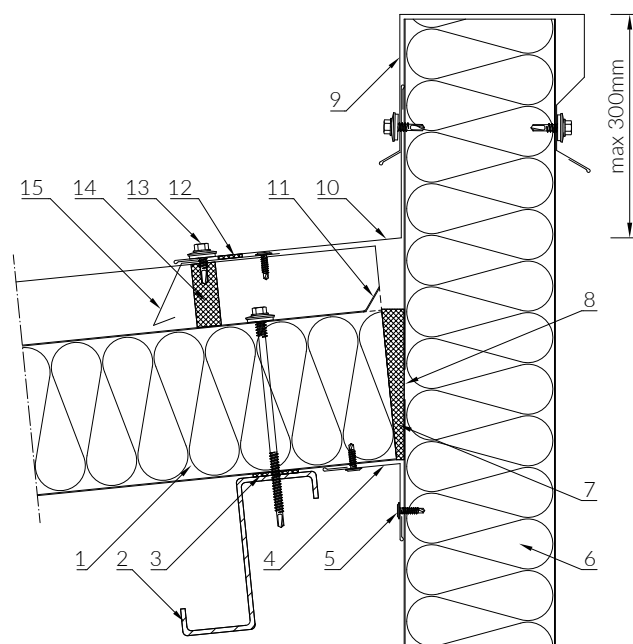
Drawing 49

* optional solution

ROOF PANEL AND WALL PANEL JOINT

SINGLE-SLOPED ROOF - ATTIC

- | | |
|----|--|
| 1 | PaNELTECH roof sandwich panel |
| 2 | Construction in accordance with building design |
| 3 | Self adhesive sealant |
| 4 | O20 flashing |
| 5 | Self-drilling screw or blind rivet |
| 6 | PaNELTECH wall sandwich panel |
| 7 | Thermal insulation |
| 8 | Facing cutting executed at the construction site * |
| 9 | 113 flashing |
| 10 | 114 flashing |
| 11 | Facing bending executed at the construction site * |
| 12 | Watertight sealing mass * |
| 13 | Self-drilling screw with a seal |
| 14 | UD42 seal |
| 15 | 102 flashing |

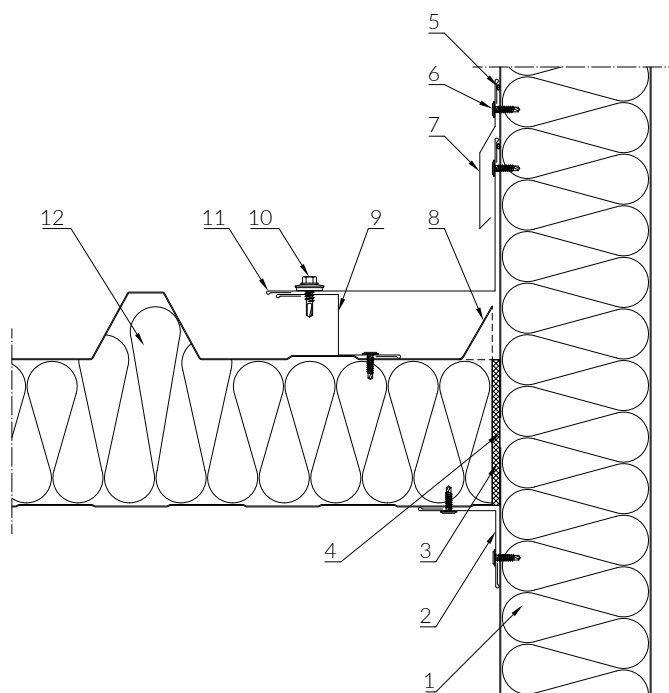


Drawing 50

ROOF PANEL AND WALL PANEL JOINT

ROOF SIDE - WALL

- | | |
|----|--|
| 1 | PaNELTECH wall sandwich panel |
| 2 | O20 flashing |
| 3 | Thermal insulation |
| 4 | Facing cutting executed at the construction site * |
| 5 | Watertight sealing mass * |
| 6 | Self-drilling screw or blind rivet |
| 7 | 118 flashing |
| 8 | Facing bending executed at the construction site |
| 9 | 121 flashing |
| 10 | Self-drilling screw with a seal |
| 11 | 114 flashing |
| 12 | PaNELTECH roof sandwich panel |



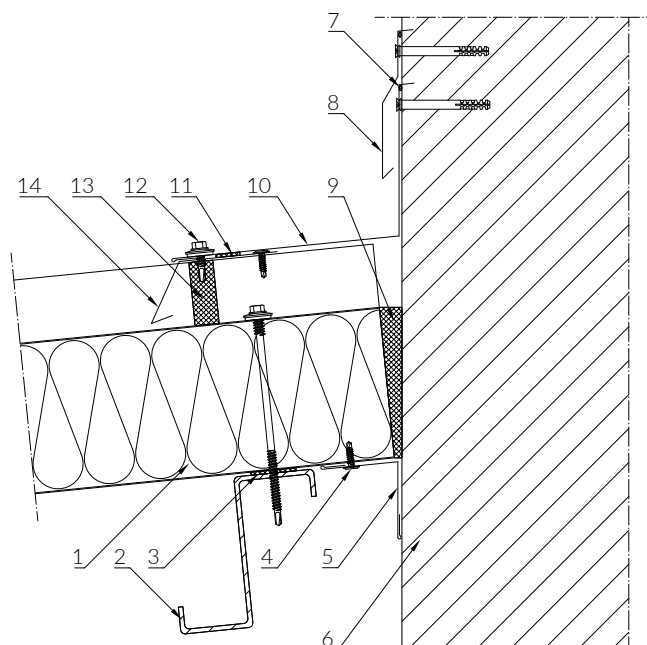
Drawing 51

* optional solution

ROOF PANEL AND WALL JOINT

SINGLE-SLOPED ROOF - MASONRY WALL

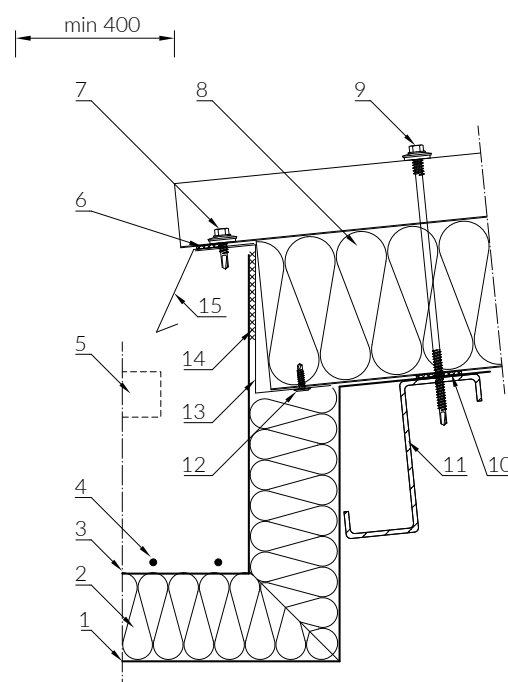
- 1 PaNELTECH roof sandwich panel
- 2 Construction in accordance with building design
- 3 Self adhesive sealant
- 4 Self-drilling screw or blind rivet
- 5 O20 flashing
- 6 Masonry wall
- 7 Watertight sealing mass
- 8 119 flashing
- 9 Thermal insulation
- 10 115 flashing
- 11 Watertight sealing mass *
- 12 Self-drilling screw with a seal
- 13 UD42 seal
- 14 102 flashing



Drawing 52

ROOF DRAINAGE GUTTER

- 1 External load-bearing profile
- 2 Thermal insulation of the drainage gutter
- 3 Watertight insulation (e.g. PVC membrane or EPDM)
- 4 Drainage gutter heating installation*
- 5 Overflow outlet
- 6 Watertight sealing mass
- 7 Self-drilling screw with a seal
- 8 PaNELTECH roof sandwich panel
- 9 Fastener
- 10 Self adhesive sealant
- 11 Construction in accordance with building design
- 12 Self-drilling screw or blind rivet
- 13 Flashing with PVC coating
- 14 Watertight insulation weld
- 15 110 flashing

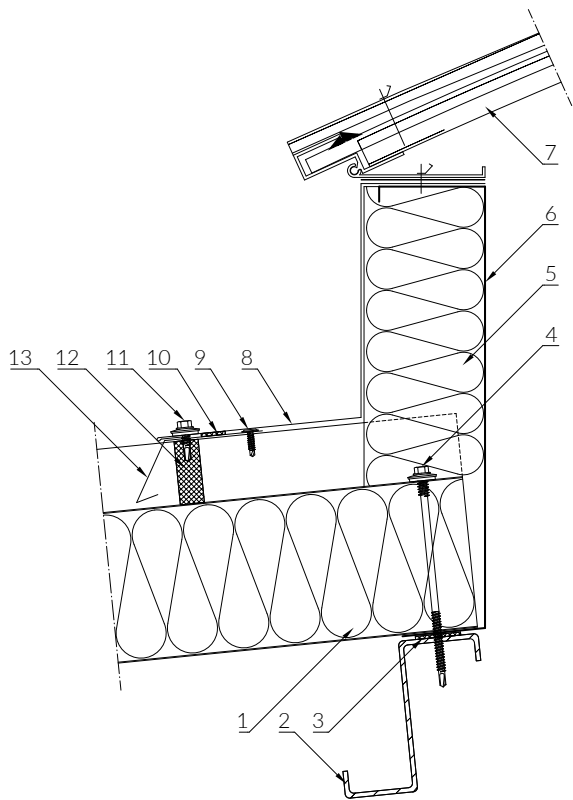


Drawing 53

* optional solution

ROOF PANEL AND SKYLIGHT JOINT

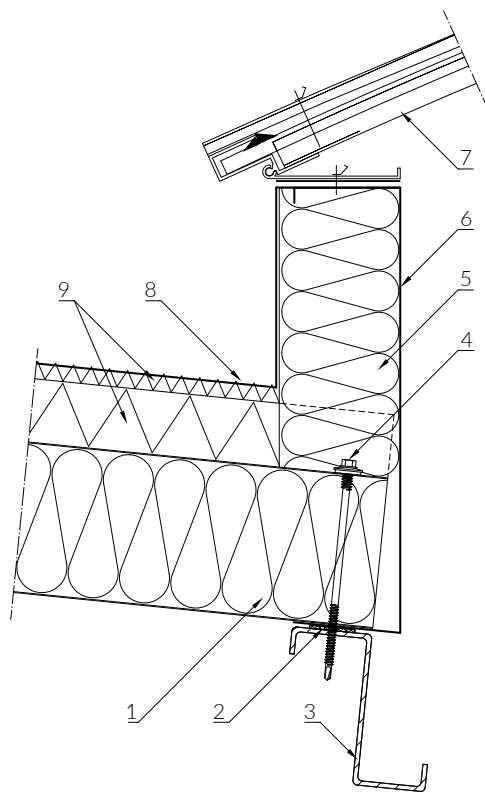
- | | |
|----|---|
| 1 | PaNELTECH roof sandwich panel |
| 2 | Construction in accordance with building design |
| 3 | Self adhesive sealant |
| 4 | Fastener |
| 5 | Skylight base thermal insulation |
| 6 | Skylight base |
| 7 | Roof skylight |
| 8 | Skylight flashing |
| 9 | Self-drilling screw or blind rivet |
| 10 | Watertight sealing mass * |
| 11 | Self-drilling screw with a seal |
| 12 | UD42 seal |
| 13 | 102 flashing |



Drawing 54

ROOF PANEL AND SKYLIGHT JOINT

- | | |
|---|---|
| 1 | PaNELTECH roof sandwich panel |
| 2 | Self adhesive sealant |
| 3 | Construction in accordance with building design |
| 4 | Fastener |
| 5 | Skylight base thermal insulation |
| 6 | Skylight base |
| 7 | Roof skylight |
| 8 | Watertight insulation (PVC membrane or EPDM) |
| 9 | Leveling element (e.g. PIR SOFT) |



Drawing 55

* optional solution

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