



SANDWICH PANELS CATALOG

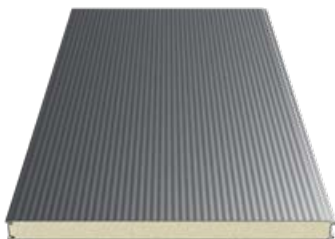
LIVMU

Live Modern and Modular

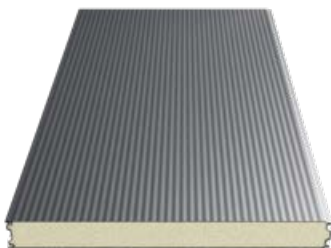
CorePIR sandwich panels

CORE^{PIR}

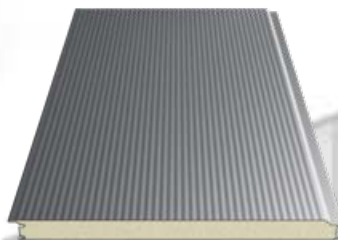
SPW-S CORE^{PIR}



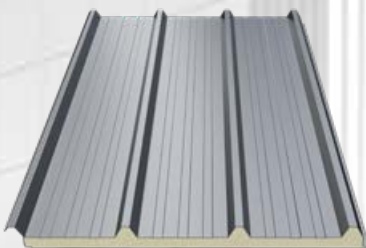
SPW-C CORE^{PIR}



SPW-H CORE^{PIR}



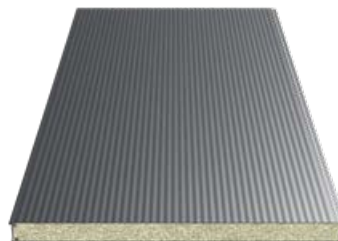
SPR CORE^{PIR}



CoreWOOL sandwich panels

CORE^{WOOL}

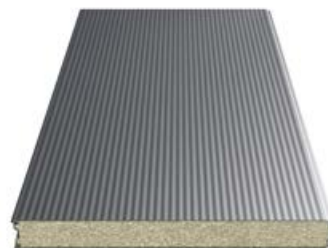
SPW-S CORE^{WOOL}



SPR CORE^{WOOL}



SPW-SM CORE^{WOOL}



Livmu
Scan the code to find out more.

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About us

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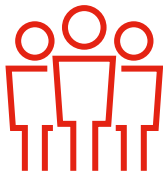
Welcome to Livmu world

Livmu is a forward-thinking company dedicated to creating innovative solutions that blend modern design with everyday functionality. We focus on delivering high-quality, customizable products that make living and working spaces more comfortable, efficient, and inspiring. At Livmu, our mission is to bring together creativity, technology, and sustainability to reinvent how people experience their environments.



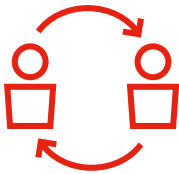
Why us?

At Livmu, we combine innovation, reliability, and forward-thinking design to deliver solutions that truly make a difference. We don't just create products—we create value by focusing on quality, efficiency, and long-term impact. Our team is driven by curiosity and a commitment to excellence, ensuring every detail is carefully crafted to meet the highest standards. Choosing Livmu means choosing a partner who listens, adapts, and delivers results you can trust.



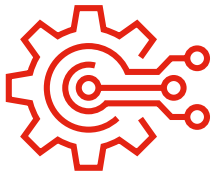
PEOPLE

The company and the positive atmosphere are created by people. We want every person on Livmu team to feel comfortable and have the best tools to do their job. To this end, we are constantly improving the management process, ensuring transparent decision-making and a clear information flow. Like wolves, we act as a team and work together to achieve success.



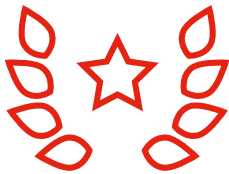
RELATIONSHIPS

At Livmu, we have been building professional relationships with our customers, suppliers and colleagues for many years. We are focused on transparent communication and open dialogue. We look after our customers by offering modern cooperation tools and support in marketing programmes. We know that the market is constantly changing, which is why we flexibly adapt to customer needs.



TECHNOLOGY

We focus on innovative solutions and modern technologies, thanks to which we can constantly optimise the production process, expand the offer, improve the quality of our products and services while maintaining the principles of sustainable development and employee safety.



QUALITY

Quality is our priority. All Livmu production plants have full control of processes and products in terms of ensuring the highest quality, which is why our company's in-house pro-quality activities are under constant supervision. Our constant attention to product quality is confirmed by the issued and annually renewable Certificate, which confirms the perfect functioning of the Plant Production Control.



Residential construction

Livmu manufactures modular and compact metal roofing tiles and matching cut-to-size sheet products. We also boast three innovative models of roof panels, as well as a wide range of trapezoidal and corrugated sheets. Our product range is completed by gutter systems and dedicated roof flashings and accessories.



Industrial engineering

Our offer includes a wide range of products intended for the implementation of investment tasks, i.e. production halls, outbuildings or commercial and sports facilities. We offer comprehensive solutions for industrial construction, such as structural trapezoidal sheets, wall cladding and facade cassettes. We also offer sandwich panels with PIR, PUR and WOOL filling. Products dedicated to industrial construction are also available in perforated versions at the Customer's request. The available solutions have high parameters enabling their use in even the most demanding industrial applications.



Livmu

It was created for customers looking for materials with specific properties and degrees of processing. We ensure constant availability and a wide selection of steel grades, thicknesses and coatings recommended by Livmu. We carry out individual orders of any parameters. Sheet metal processing includes rewinding, longitudinal and transverse cutting, and protection with protective films. We can cut sheet metal into sheets or formats with the dimensions specified by the customer. We offer perforation of sheets with metallic and organic coatings.

History



Innovative production plant

Livmu is built on four rock-solid pillars. They include quality and technology, which have contributed to reaching the next stage of development.

Following innovation, we started producing lightweight and energy-efficient sandwich panels, which are made on our new production line - one of the most modern in world

Successfully overcoming subsequent challenges in the industrial market, we have arrived at a place where we are able to meet the requirements of investors for the most complex constructions and provide sandwich panels with excellent performance and precision.





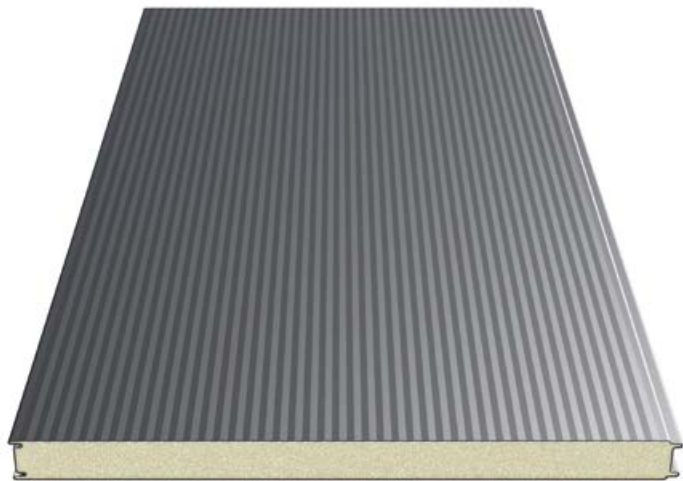
2.

Sandwich panels

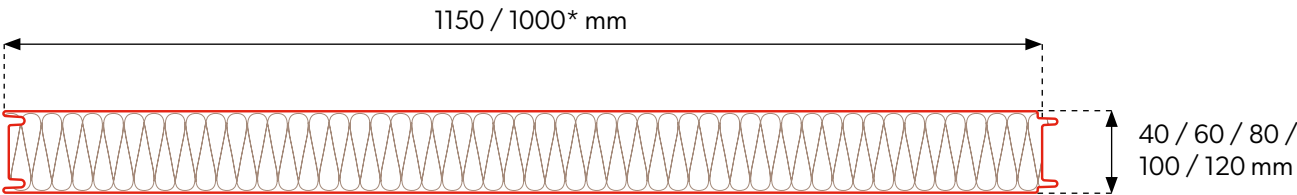
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- 36. Types of profiling
- 40. Accessories and roof skylight



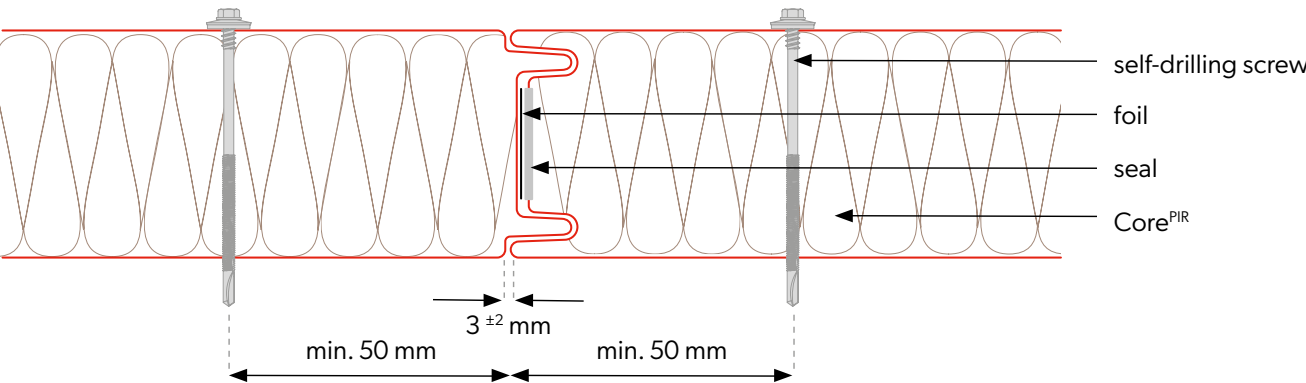
Wall panel with visible fastening



Panel cross-section



Joining the panels



Technical specifications

Core	PIR				
Density [kg/m³]	40 ± 3				
PIR panel thickness [mm]	40	60	80	100	120
Weight [kg/m²]	8,7	9,5	10,3	11,1	11,9
Effective width [mm]	1150, 1000*				
Total width [mm]	1171, 1021*				
Min. panel length [m]	2,5	2,0			
Max. panel length [m]	15,0				
Outer/inner sheet thickness [mm]	0,4-0,7 / 0,4-0,7				
U-value [W/m²K]	0,55	0,37	0,28	0,22	0,18
Fire spread degree	NRO				
Fire resistance				EI15	EI30
Type of external / internal profiling	[M], [T], [R], [F] / [M], [T], [F]				
External / internal corrosion resistance	C1, C2, C3 (C4 ÷ C5) / A1 (A2 ÷ A5)				
Standard coatings	Poliester Interior [INT], Poliester Standard [RAL], HERCULIT [HC], MULTILAYER 40 [MLT]				
Special coatings	PVDF, PUR, PVC (P), PVC (F) - FoodSafe				
Accessories	fixing system, seals, flashings, rooflight SPR-SKY				

Packaging panels

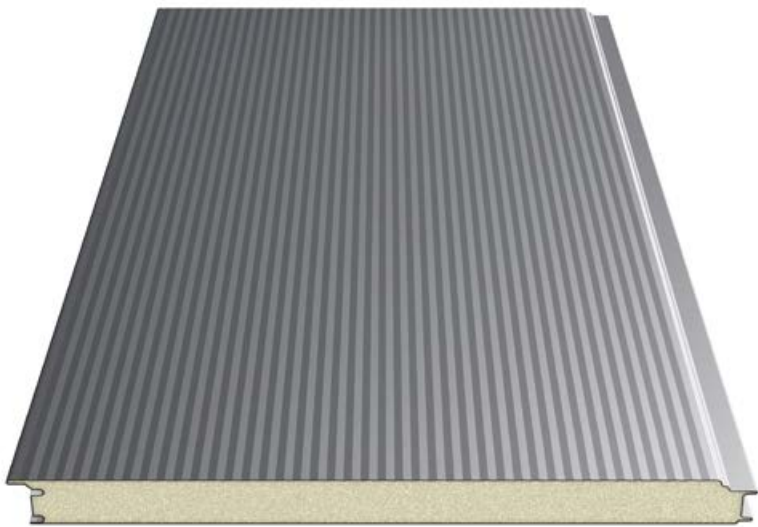
Panel thickness [mm]	Modular width [mm]	Number of panels per pack [pcs]	Number of packages on a vehicle [pcs]	Maximum package height [mm]	Package height [mm]	Panel weight [kg/m²]	Weight of 1 package [kg]	Surface area of panels [m²/car]**
40	1150	19	6	860	2580	8,7	2566,3	1769,9
60	1150	13	6	880	2640	9,5	1917,3	1211,0
80	1150	15	4	1300	2600	10,3	2398,6	931,5
100	1150	12	4	1300	2600	11,1	2067,9	745,2
120	1150	10	4	1300	2600	11,9	1847,5	621,0



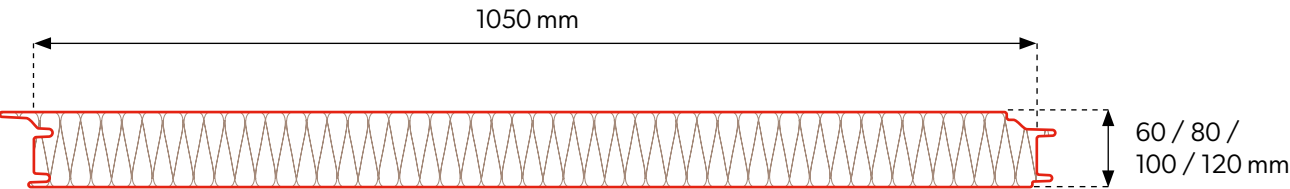
* Module availability is agreed individually with the sales department.
** Surface area of panels on car calculated for panel lengths of 13.5 m.

SPW-H CORE^{PIR}

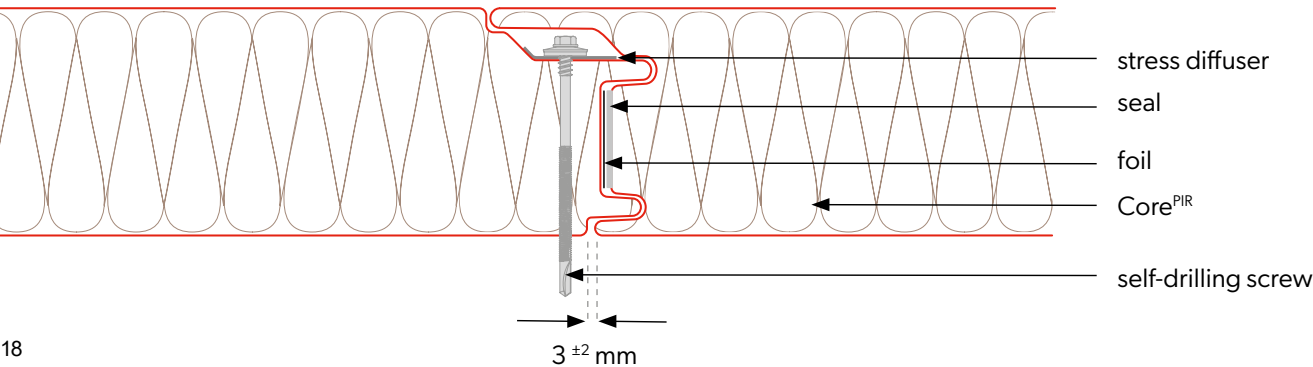
Sandwich wall panel with concealed fixing



Panel cross-section



Joining the panels



Technical specifications

Core	PIR			
Density [kg/m³]	40 ± 3			
PIR panel thickness [mm]	60	80	100	120
Weight [kg/m²]	9,5	10,3	11,1	11,9
Effective width [mm]	1050			
Total width [mm]	1102			
Min. panel length [m]	2,0			
Max. panel length [m]	15,0			
Outer/inner sheet thickness [mm]	0,4-0,7 / 0,4-0,7			
U-value [W/m²K]	0,37	0,28	0,22	0,18
Fire spread degree	NRO			
Type of external / internal profiling	[M], [T], [R], [F] / [M], [T], [F]			
External / internal corrosion resistance	C1, C2, C3 (C4 ÷ C5) / A1 (A2 ÷ A5)			
Standard coatings	Poliester Interior [INT], Poliester Standard [RAL], HERCULIT [HC], MULTILAYER 40 [MLT]			
Special coatings	PVDF, PUR, PVC (P), PVC (F) - FoodSafe			
Accessories	fixing system, seals, flashings, rooflight SPR-SKY			

Packaging panels

Panel thickness [mm]	Modular width [mm]	Number of panels per pack [pcs]	Number of packages on a vehicle [pcs]	Maximum package height [mm]	Package height [mm]	Panel weight [kg/m²]	Weight of 1 package [kg]	Surface area of panels [m²/car]**
60	1050	13	6	880	2640	9,5	1750,6	1105,7
80	1050	15	4	1300	2600	10,3	2190,0	850,5
100	1050	12	4	1300	2600	11,1	1888,1	680,4
120	1050	10	4	1300	2600	11,9	1686,8	567,0



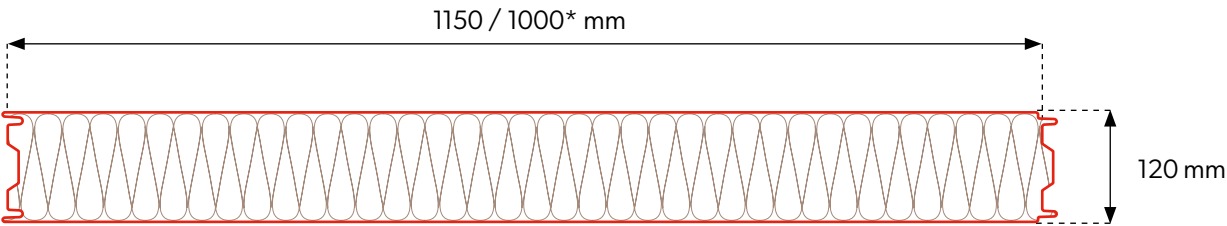
** Surface area of panels on car calculated for panel lengths of 13.5 m.

SPW-C CORE^{PIR}

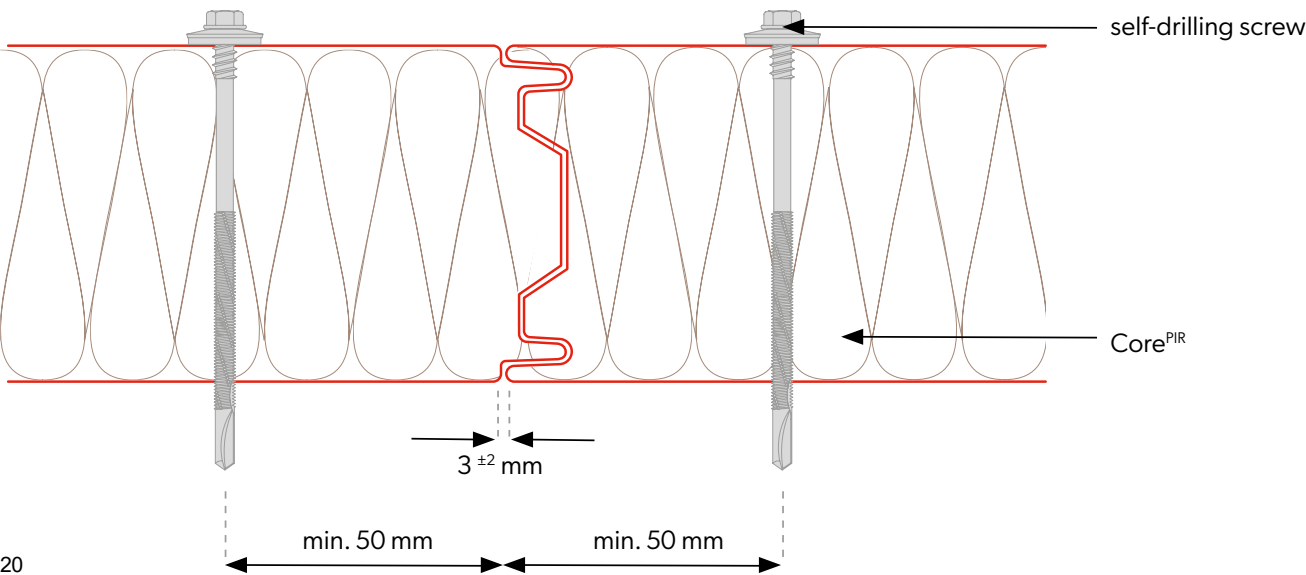
Cooling sandwich panel



Panel cross-section



Joining the panels



Technical specifications

Core	PIR
Density [kg/m³]	40 ± 3
PIR panel thickness [mm]	120
Weight [kg/m²]	11,9
Effective width [mm]	1150, 1000*
Total width [mm]	1171, 1021*
Min. panel length [m]	2,0
Max. panel length [m]	15,0
Outer/inner sheet thickness [mm]	0,4-0,7 / 0,4-0,7
U-value [W/m²K]	0,18
Fire spread degree	NRO
Type of external / internal profiling	[M], [T], [R], [F] / [M], [T], [F]
External / internal corrosion resistance	C1, C2, C3 (C4 ÷ C5) / A1 (A2 ÷ A5)
Standard coatings	Poliester Interior [INT], Poliester Standard [RAL], HERCULIT [HC], MULTILAYER 40 [MLT]
Special coatings	PVDF, PUR, PVC (P), PVC (F) - FoodSafe
Accessories	fixing system, seals, flashings, rooflight SPR-SKY

Packaging panels

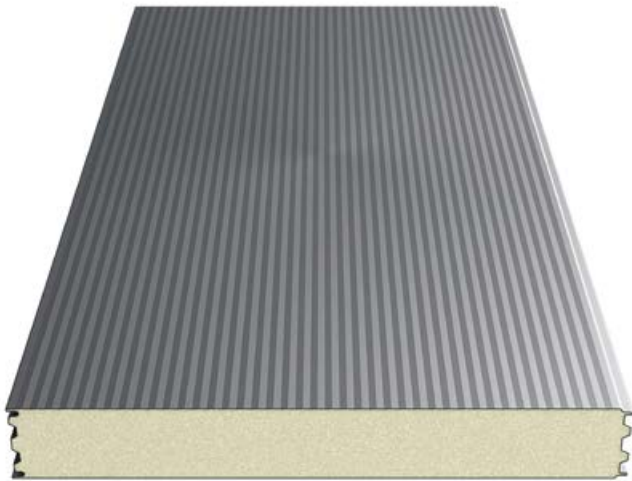
Panel thickness [mm]	Modular width [mm]	Number of panels per pack [pcs]	Number of packages on a vehicle [pcs]	Maximum package height [mm]	Package height [mm]	Panel weight [kg/m2]	Weight of 1 package [kg]	Surface area of panels [m2/car]**
120	1150	10	4	1300	2600	11,9	1847,5	621,0



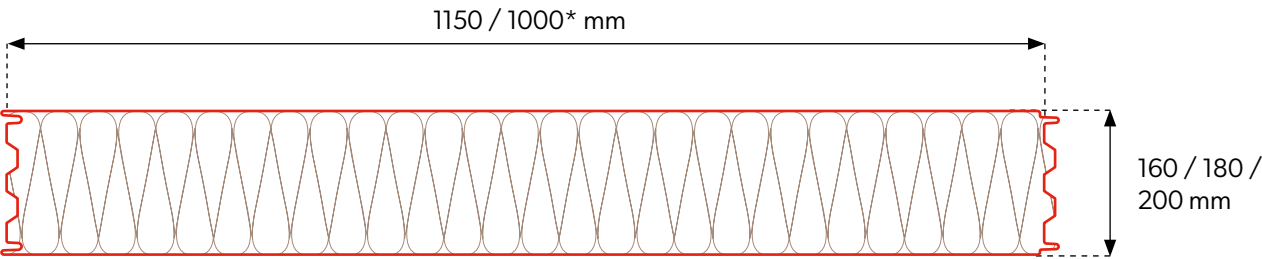
* Module availability is agreed individually with the sales department.
** Surface area of panels on car calculated for panel lengths of 13.5 m.

SPW-C CORE^{PIR}

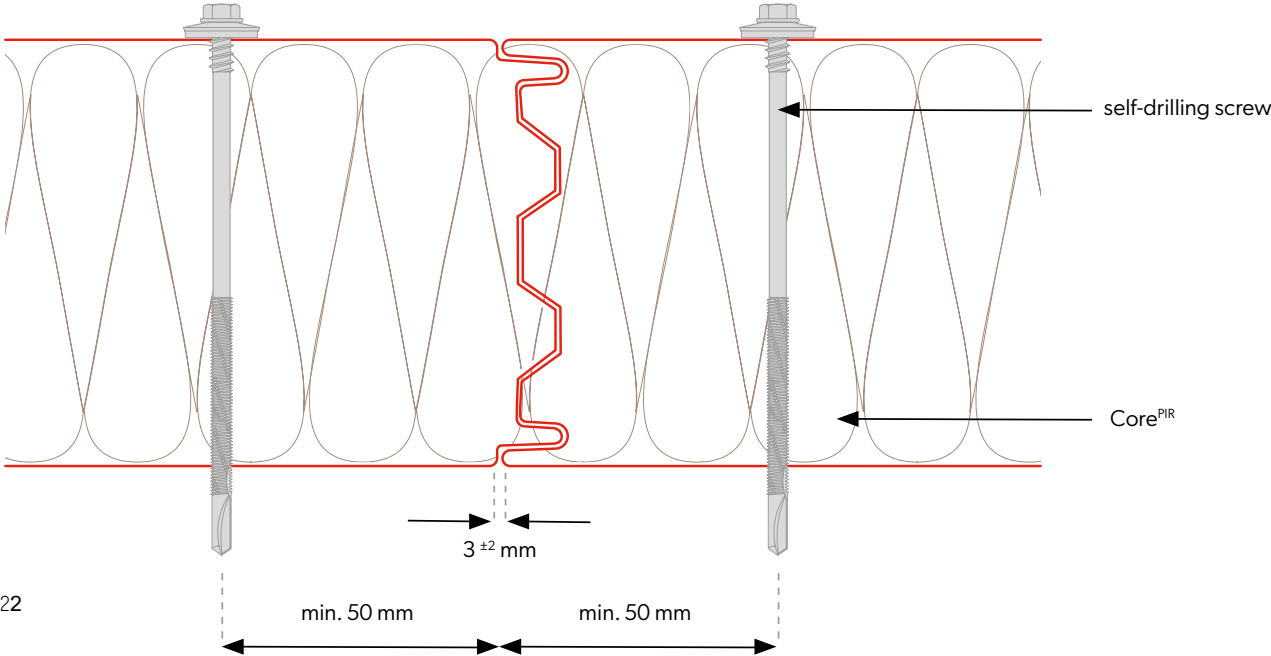
Cooling sandwich panel



Panel cross-section



Joining the panels



Technical specifications

Core	PIR		
Density [kg/m³]	40 ± 3		
PIR panel thickness [mm]	160	180	200
Weight [kg/m²]	13,5	14,3	15,1
Effective width [mm]	1150, 1000*		
Total width [mm]	1171, 1021*		
Min. panel length [m]	2,0		
Max. panel length [m]	15,0		
Outer/inner sheet thickness [mm]	0,4-0,7 / 0,4-0,7		
U-value [W/m²K]	0,14	0,12	0,11
Fire spread degree	NRO		
Type of external / internal profiling	[M], [T], [R], [F] / [M], [T], [F]		
External / internal corrosion resistance	C1, C2, C3 (C4 ÷ C5) / A1 (A2 ÷ A5)		
Standard coatings	Poliester Interior [INT], Poliester Standard [RAL], HERCULIT [HC], MULTILAYER 40 [MLT]		
Special coatings	PVDF, PUR, PVC (P), PVC (F) - FoodSafe		
Accessories	fixing system, seals, flashings, rooflight SPR-SKY		

Packaging panels

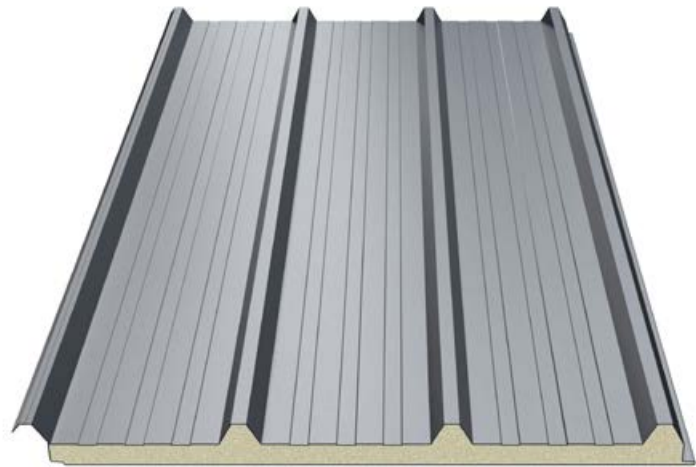
Panel thickness [mm]	Modular width [mm]	Number of panels per pack [pcs]	Number of packages on a vehicle [pcs]	Maximum package height [mm]	Package height [mm]	Panel weight [kg/m2]	Weight of 1 package [kg]	Surface area of panels [m2/car]**
160	1150	7	4	1220	2440	13,5	1467,1	434,7
180	1150	6	4	1180	2360	14,3	1332,0	372,6
200	1150	6	4	1300	2600	15,1	1406,6	372,6



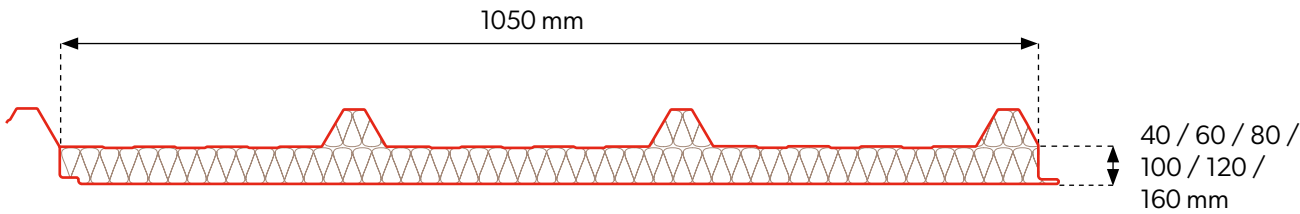
* Module availability is agreed individually with the sales department.
** Surface area of panels on car calculated for panel lengths of 13.5 m.



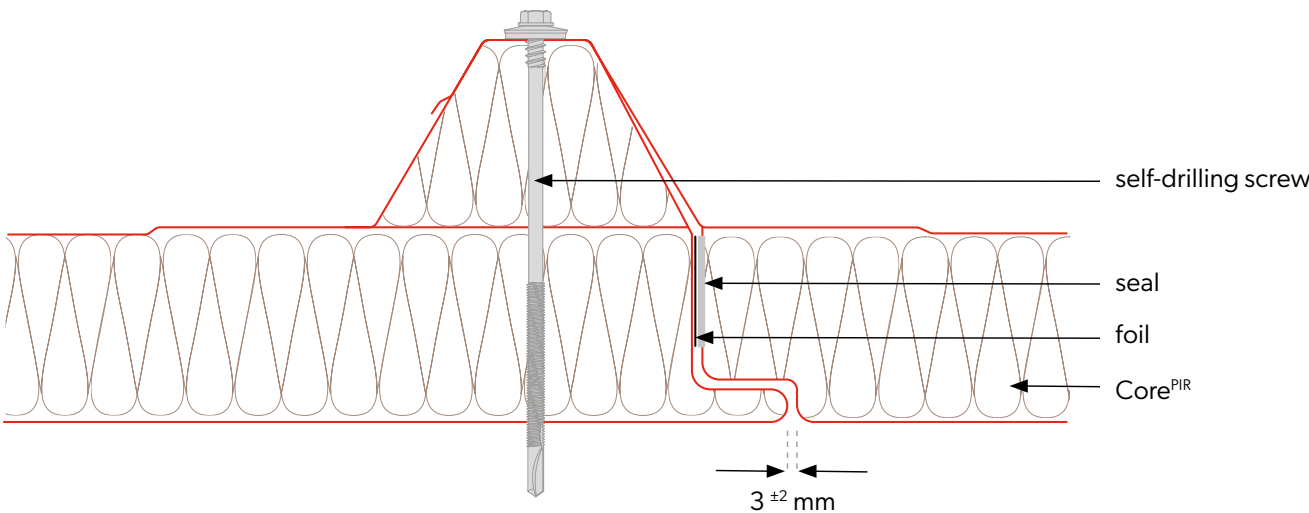
Roof sandwich panel



Panel cross-section



Joining the panels



Technical specifications

Core	PIR					
Density [kg/m³]	40 ± 3					
PIR panel thickness [mm]	40	60	80	100	120	160
Weight [kg/m²]	9,6	10,4	11,2	12,0	12,8	14,8
Effective width [mm]	1050					
Total width [mm]	1127					
Min. panel length [m]	2,0					
Max. panel length [m]	15,0					
Outer/inner sheet thickness [mm]	0,4-0,7 / 0,4-0,7					
U-value [W/m²K]	0,55	0,37	0,28	0,22	0,18	0,14
Fire spread degree	NRO					
Type of external / internal profiling	[T40] / [M], [T] , [F]					
External / internal corrosion resistance	C1, C2, C3 (C4 ÷ C5) / A1 (A2 ÷ A5)					
Standard coatings	Poliester Interior [INT], Poliester Standard [RAL], HERCULIT [HC], MULTILAYER 40 [MLT]					
Special coatings	PVDF, PUR, PVC (P), PVC (F) - FoodSafe					
Accessories	fixing system, seals, flashings, rooflight SPR-SKY					

Packaging panels

Panel thickness [mm]	Modular width [mm]	Number of panels per pack [pcs]	Number of packages on a vehicle [pcs]	Maximum package height [mm]	Package height [mm]	Panel weight [kg/m2]	Weight of 1 package [kg]	Surface area of panels [m2/car]**
40	1050	20	4	1300	2600	9,6	2721,6	1134,0
60	1050	10	6	900	2700	10,4	1474,2	850,5
80	1050	12	4	1300	2600	11,2	1905,1	680,4
100	1050	10	4	1300	2600	12	1701,0	567,0
120	1050	8	4	1220	2440	12,8	1451,5	453,6
160	1050	6	4	1180	2360	14,8	1258,7	340,2



** Surface area of panels on car calculated for panel lengths of 13.5 m.

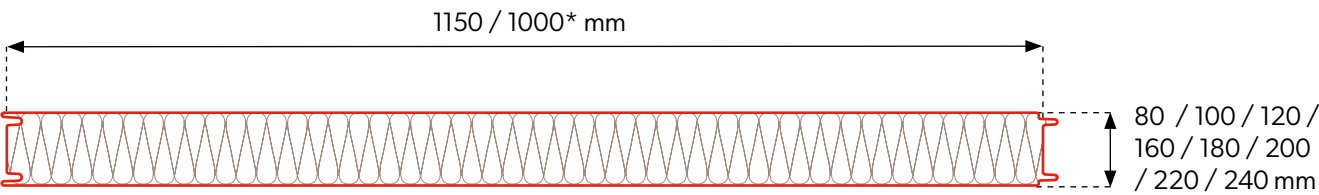




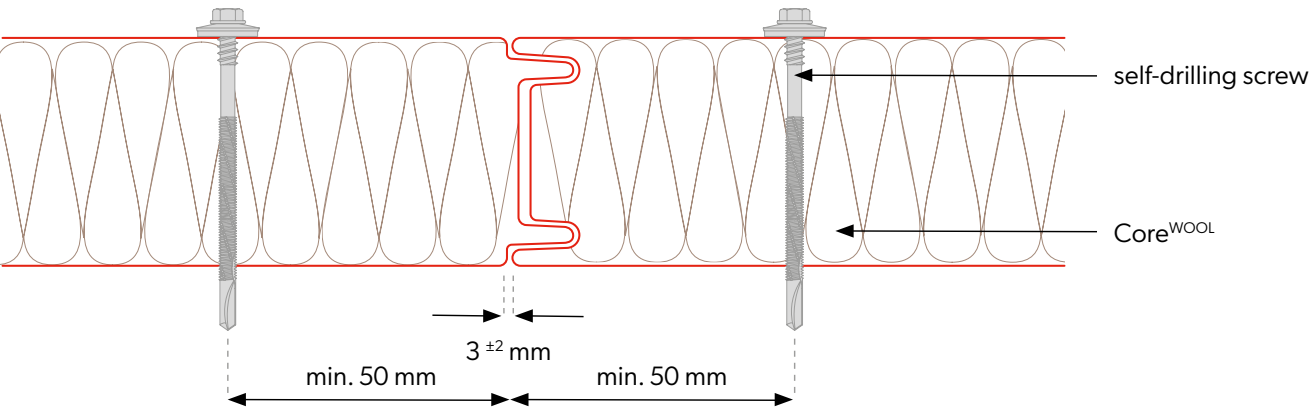
Wall panel with visible fastening



Panel cross-section



Joining the panels



Technical specifications

Core	wool							
Density [kg/m³]	100 ± 10							
WOOL panel thickness [mm]	80	100	120	160	180	200	220	240
Weight [kg/m²]	16,6	18,6	20,6	24,6	26,6	28,6	30,6	32,6
Effective width [mm]	1150, 1000*							
Total width [mm]	1171, 1021*							
Min. panel length [m]	2,0							
Max. panel length [m]	15,0							
Outer/inner sheet thickness [mm]	0,5-0,7 / 0,5-0,7							
U-value [W/m²K]	0,54	0,43	0,36	0,27	0,24	0,22	0,20	0,18
Fire spread degree	NRO							
Type of external / internal profiling	[M], [T], [R], [F] / [M], [T], [F]							
External / internal corrosion resistance	C1, C2, C3 (C4 ÷ C5) / A1 (A2 ÷ A5)							
Standard coatings	Poliester Interior [INT], Poliester Standard [RAL], HERCULIT [HC], MULTILAYER 40 [MLT]							
Special coatings	PVDF, PUR, PVC (P), PVC (F) - FoodSafe							
Accessories	fixing system, seals, flashings, rooflight							

Packaging panels

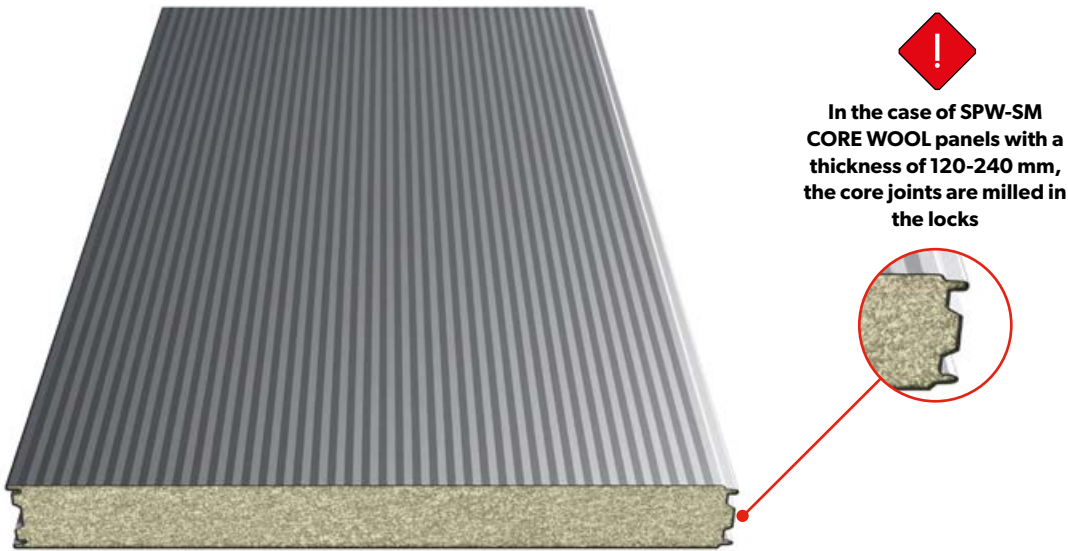
Panel thickness [mm]	Modular width [mm]	Number of panels per pack [pcs]	Number of packages on a vehicle [pcs]	Maximum package height [mm]	Package height [mm]	Panel weight [kg/m²]	Weight of 1 package [kg]	Surface area of panels [m²/car]**
80	1150	15	4	1300	2600	17,9	2779,0	621,0
100	1150	12	4	1300	2600	19,9	2471,6	496,8
120	1150	10	4	1300	2600	21,9	2266,7	414,0
160	1150	7	4	1220	2440	25,9	1876,5	289,8
180	1150	6	4	1180	2360	27,9	1732,6	248,4
200	1150	6	4	1300	2600	29,9	1856,8	248,4
220	1150	5	4	1200	2400	31,9	1650,8	207,0
240	1150	5	4	1300	2600	33,9	1754,3	207,0



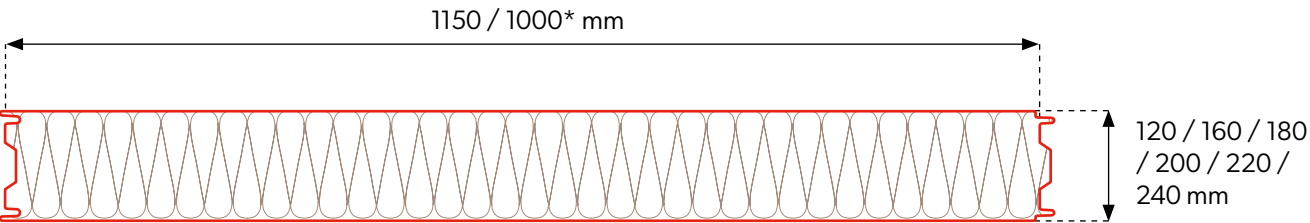
* Module availability is agreed individually with the sales department.
** Surface area of panels on car calculated for panel lengths of 9 m.

SPW-SM CORE WOOL

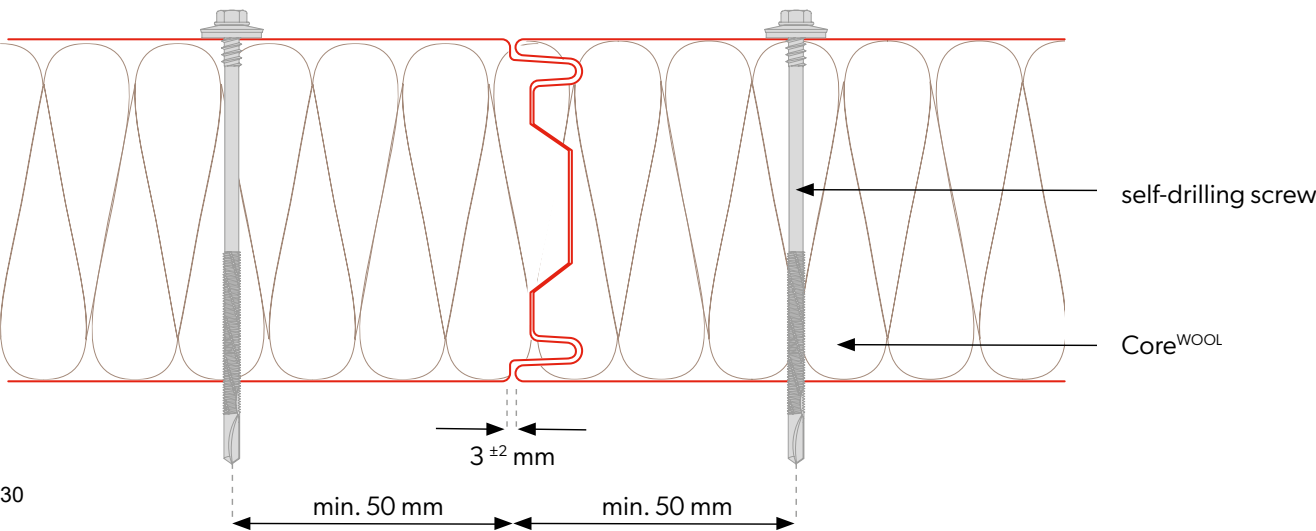
Wall panel with visible fastening



Panel cross-section



Joining the panels



Technical specifications

Core	weina					
Density [kg/m³]	100 ± 10					
PIR panel thickness [mm]	120	160	180	200	220	240
Weight [kg/m²]	20,6	24,6	26,6	28,6	30,6	32,6
Effective width [mm]	1150, 1000*					
Total width [mm]	1171, 1021*					
Min. panel length [m]	2,0					
Max. panel length [m]	15,0					
Outer/inner sheet thickness [mm]	0,5-0,7 / 0,5-0,7					
U-value [W/m²K]	0,36	0,27	0,24	0,22	0,20	0,18
Fire spread degree	NRO					
Type of external / internal profiling	[M], [T], [R], [F] / [M], [T], [F]					
External / internal corrosion resistance	C1, C2, C3 (C4 ÷ C5) / A1 (A2 ÷ A5)					
Standard coatings	Poliester Interior [INT], Poliester Standard [RAL], HERCULIT [HC], MULTILAYER 40 [MLT]					
Special coatings	PVDF, PUR, PVC (P), PVC (F) - FoodSafe					
Accessories	fixing system, seals, flashings, rooflight					

Packaging panels

Panel thickness [mm]	Modular width [mm]	Number of panels per pack [pcs]	Number of packages on a vehicle [pcs]	Maximum package height [mm]	Package height [mm]	Panel weight [kg/m2]	Weight of 1 package [kg]	Surface area of panels [m2/car]**
120	1150	10	4	1300	2600	21,9	2266,7	414,0
160	1150	7	4	1220	2440	25,9	1876,5	289,8
180	1150	6	4	1180	2360	27,9	1732,6	248,4
200	1150	6	4	1300	2600	29,9	1856,8	248,4
220	1150	5	4	1200	2400	31,9	1650,8	207,0
240	1150	5	4	1300	2600	33,9	1754,3	207,0



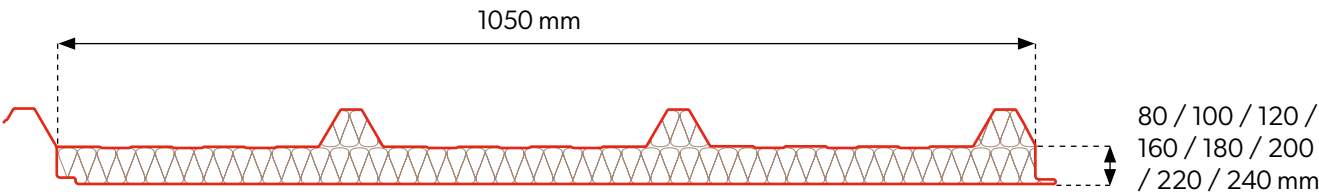
* Module availability is agreed individually with the sales department.
** Surface area of panels on car calculated for panel lengths of 9 m.



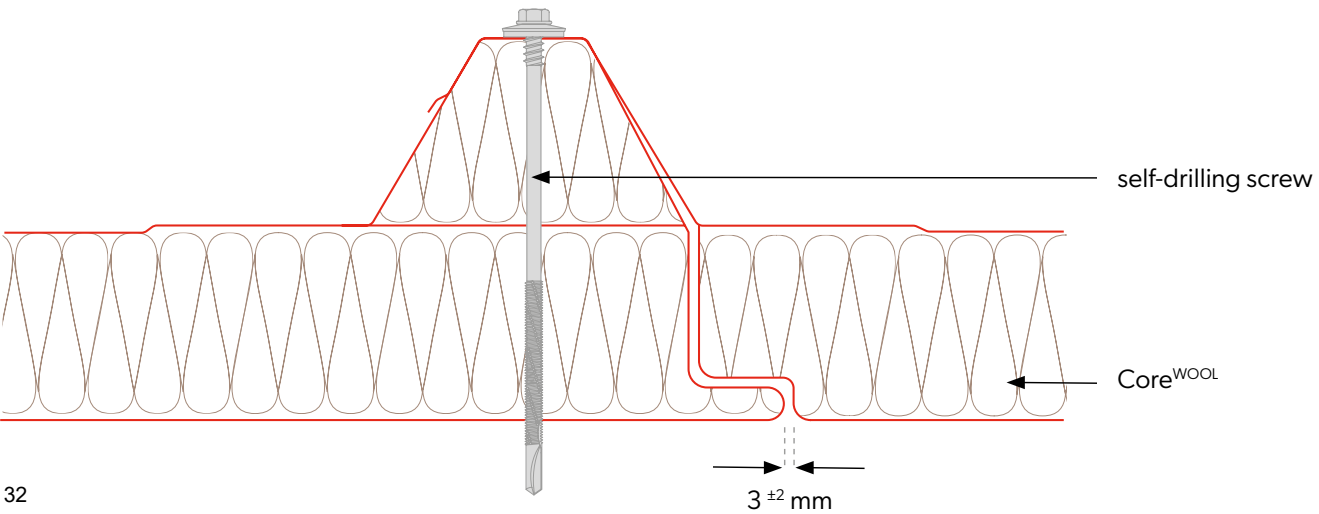
Roof sandwich panel



Panel cross-section



Joining the panels



Technical specifications

Core	wool							
Density [kg/m³]	100 ± 10							
WOOL panel thickness [mm]	80	100	120	160	180	200	220	240
Weight [kg/m²]	17,8	19,8	21,8	25,8	27,8	29,8	31,8	33,8
Effective width [mm]	1050							
Total width [mm]	1127							
Min. panel length [m]	2,0							
Max. panel length [m]	15,0							
Outer/inner sheet thickness [mm]	0,5-0,7 / 0,5-0,7							
U-value [W/m²K]	0,54	0,43	0,36	0,27	0,24	0,22	0,20	0,18
Fire spread degree	NRO							
Type of external / internal profiling	[T40] / [M], [T] , [F]							
External / internal corrosion resistance	C1, C2, C3 (C4 ÷ C5) / A1 (A2 ÷ A5)							
Standard coatings	Poliester Interior [INT], Poliester Standard [RAL], HERCULIT [HC], MULTILAYER 40 [MLT]							
Special coatings	PVDF, PUR, PVC (P), PVC (F) - FoodSafe							
Accessories	fixing system, seals, flashings, rooflight SPR-SKY							

Packaging panels

Panel thickness [mm]	Modular width [mm]	Number of panels per pack [pcs]	Number of packages on a vehicle [pcs]	Maximum package height [mm]	Package height [mm]	Panel weight [kg/m2]	Weight of 1 package [kg]	Surface area of panels [m2/car]**
80	1050	12	4	1300	2600	17,8	3027,8	680,4
100	1050	10	4	1300	2600	19,8	2806,7	567,0
120	1050	8	4	1220	2440	21,8	2472,1	453,6
160	1050	6	4	1180	2360	25,8	2194,3	340,2
180	1050	6	4	1300	2600	27,8	2364,4	340,2
200	1050	4	4	980	1960	29,8	1689,7	226,8
220	1050	4	4	1060	2120	31,8	1803,1	226,8
240	1050	4	4	1140	2280	33,8	1916,5	226,8



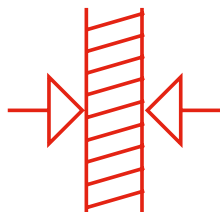
** Surface area of panels on car calculated for panel lengths of 13.5 m.

Sandwich panels advantages

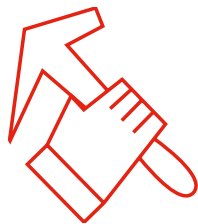
In today's dynamic world of construction investments, the key aspect is the selection of materials that will not only meet the highest quality standards, but also ensure time and cost efficiency. Sandwich panels are becoming an increasingly popular choice for investment projects, offering numerous advantages that satisfy both developers and future users of buildings.

By selecting sandwich panels for your project, you invest in a durable, cost-effective and eco-friendly solution. It's a choice that will bring benefits, both today and in the future.

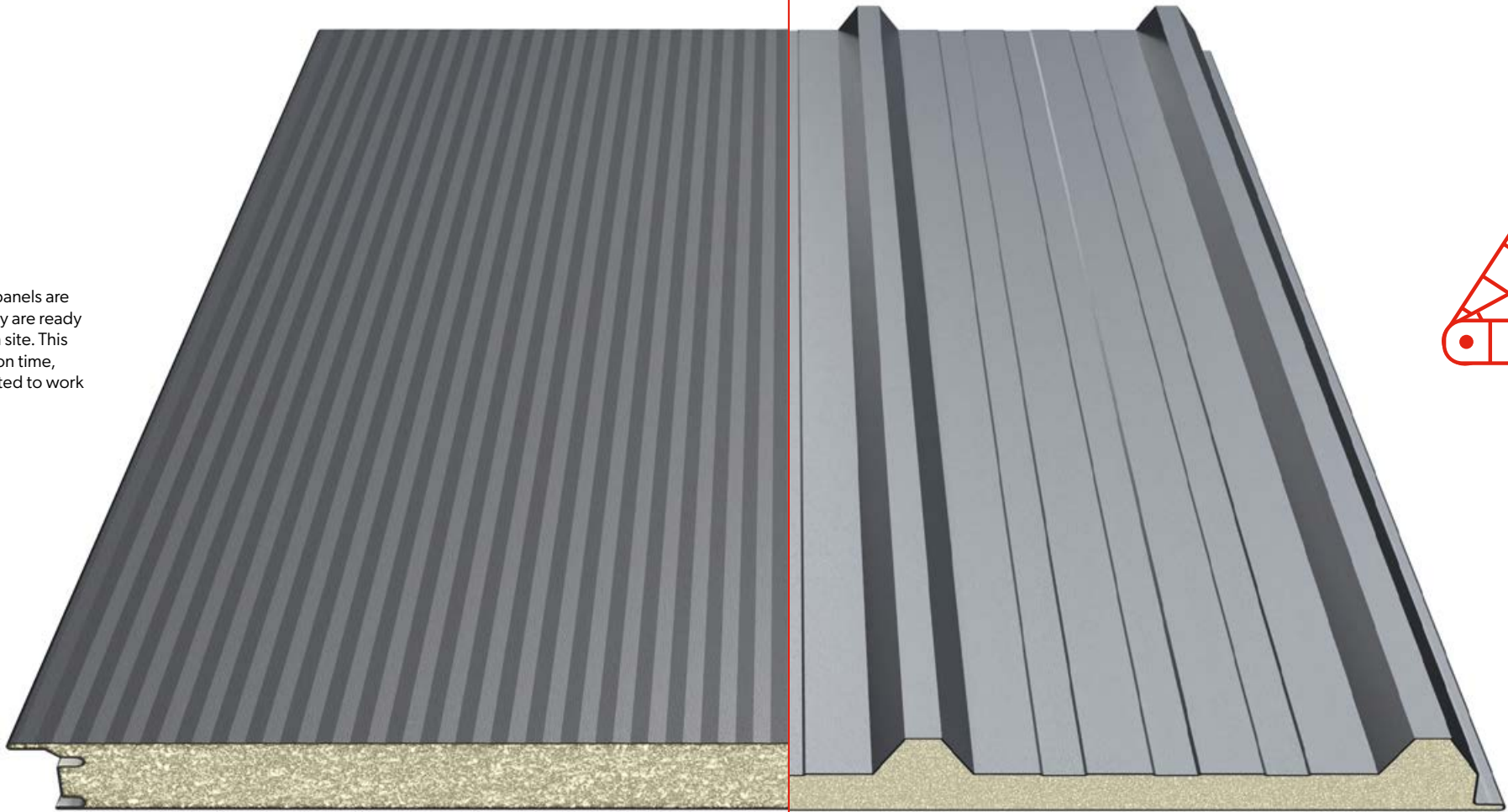
Gain an advantage by selecting sandwich panels as the material for your building projects. Not only will you save time and money, but also create sustainable, eco-friendly and comfortable spaces for future users.



Thermal insulation: Sandwich panels are characterised by excellent thermal insulation, which allows for a significant reduction in the heating and cooling costs of buildings. This saves you money on your energy bills, while also protecting the environment.



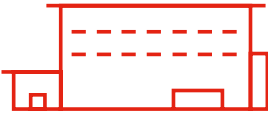
Quick installation: sandwich panels are prefabricated, which means they are ready for use right on the construction site. This significantly reduces construction time, which in turn reduces costs related to work and equipment rental.



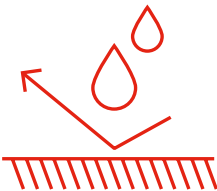
Sandwich panels are a modern product with a very wide range of applications in today's construction industry.

They are used to develop both roofs and facades of new buildings as well as modernised ones. They are also used for interior walls and ceilings, giving you the freedom to arrange interior production, storage or office areas.

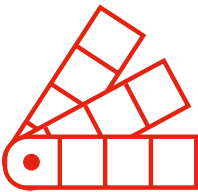
Attractive colours and varied profiling allow for the design and construction of public utility facilities. This technology makes it possible develop buildings in a very short time and, in addition, due to its attractive price, allows the use of sandwich panels to be so common on today's developments.



Multifunctionality: Sandwich panels are versatile and can be used for a variety of building types, from residential to industrial. As a result, they are an ideal solution for a variety of investment projects.



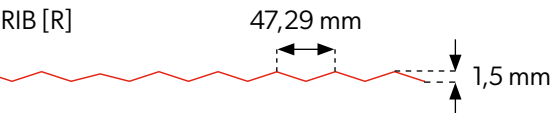
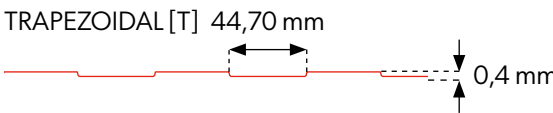
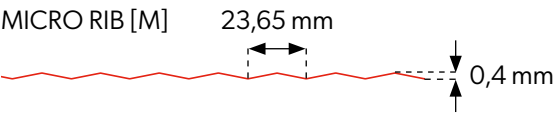
Durability: sandwich panels are extremely durable and weatherproof. This means that your building will last for many years without the need for significant investment in maintenance.



Aesthetics: Sandwich panels allow a variety of interior and exterior finishes and a wide range of cladding colours, so you can tailor the look of your building to your individual needs and preferences.

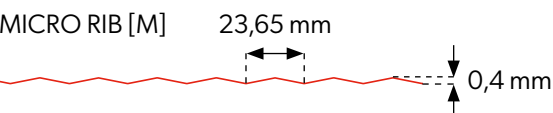
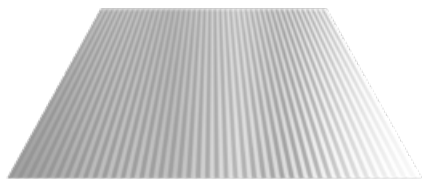
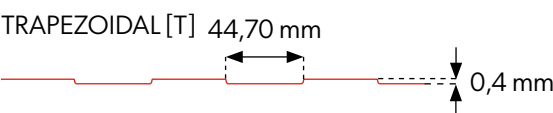
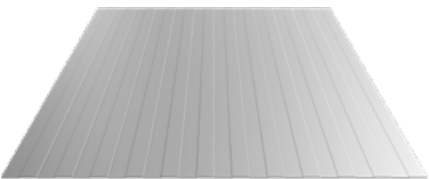
Sandwich wall panel

External profiling



FLAT [F]

Internal profiling



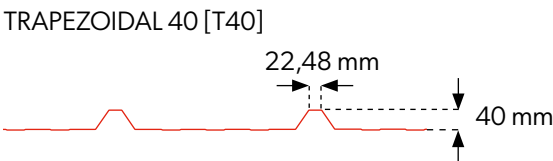
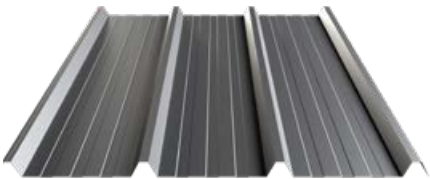
FLAT [F]

! ATTENTION! Due to the structure of sandwich panels with FLAT [F] profiles, the so-called effect may occur. „waves“ of the sheet metal. This is a natural phenomenon for this type of products. We recommend contacting the technical department to choose the optimal solution.

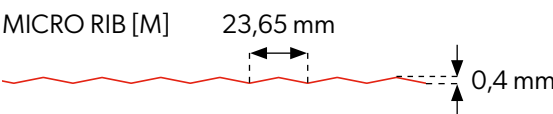
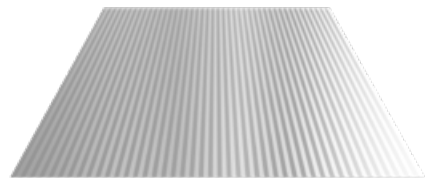
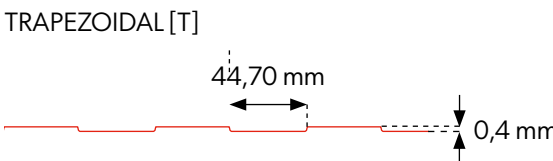
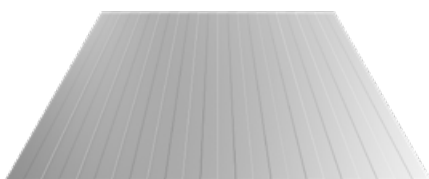
! Internal and external profiling are available in any configuration.

Roof sandwich panel

External profiling



Internal profiling



FLAT [F]

! ATTENTION! Due to the structure of sandwich panels with FLAT [F] profiles, the so-called effect may occur. „waves“ of the sheet metal. This is a natural phenomenon for this type of products. We recommend contacting the technical department to choose the optimal solution.

! Internal and external profiling are available in any configuration.



Fixings

Self-drilling screw with aluminium washer for fixing sandwich panels to steel substrate. Drilling capacity up to 6 mm.



Self-drilling screw with aluminium washer for fixing sandwich panels to substrate steel. Drilling capacity up to 12 mm.



Self-drilling screw with aluminium washer for fixing sandwich panels to substrate steel. Drilling capacity up to 20 mm.



Self-tapping screw with washer aluminium for fastening sandwich panels to concrete and wood.



The length of the connector should be selected depending on the type and thickness of the sandwich panel used. All connectors should be fitted with Ø19 sealing and vulcanising washers. If the object is exposed to particular humidity and chemical agents, we recommend the use of stainless steel fasteners.

To improve the aesthetics of the installation, especially when joining sandwich panels with visible fixing, fasteners with powder-coated heads and washers or fitted with plastic caps in a colour matching that of the panel façade sheet can be used.

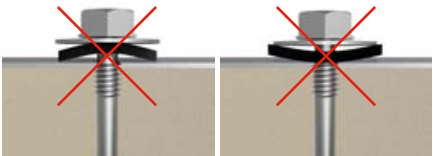
In order to properly attach the sandwich panel to the structure, the perpendicular position of the fastener in relation to the surface must be maintained during the installation process. For this reason, when installing, it is recommended to use specialised screwdrivers equipped with guide heads, which allow stable guidance of long fasteners and limit the embedding depth. These elements optimise the drilling capacity, allowing simultaneous drilling and fastening with just one power tool, significantly improving the quality of fastening and saving time. Thanks to this, we can maintain equally high and constant values of the breaking force, which reduce the risk of deformation on the cladding sheets (they use a system for adjusting the setting of the depth of the required embedding) and increase the resistance of the fastenings to external factors (e.g. waterproofness). All of this ensures safety of the structure and eliminates the so-called installation clearances, i.e. under-tightening and misalignment that can occur between the sandwich panel and the support to which the panel is mounted.

The clamping force of the fastener should be chosen ensuring that the washer is not deformed. This is illustrated in the figure below.

Correct



Incorrect



Self-drilling screw with washer for mounting sandwich panels to steel substrate. Drilling capacity up to 6 mm					
Name	Screw diameter [mm]	Screw length [mm]	Thickness range of the installed sandwich panel [mm]	Washer diameter [mm]	Use of a connector for a specific sandwich panel. Note - for roof panel when using ridge tiles, you must take into account ridge dimension
WKR01A	5,5/6,3	65	30-47	19	SPW-S 40, SPW-H 60,
WKR01B	5,5/6,3	80	30-62	19	SPW-S 60, SPW-H 80,
WKR01C	5,5/6,3	90	40-72	19	SPW-H 80,
WKR01D	5,5/6,3	110	60-92	19	SPW-S 80, SPW-H 100, SPR 40
WKR01E	5,5/6,3	125	75-107	19	SPW-S 100, SPW-H 120, SPR 60
WKR01F	5,5/6,3	150	100-132	19	SPW-S 120, SPR 80, SPW-C 120
WKR01G	5,5/6,3	175	125-157	19	SPR 100,
WKR01H	5,5/6,3	200	150-182	19	SPW-S 160,180, SPR 120, SPW-C 160, 180
WKR01I	5,5/6,3	230	160-211	19	SPW-S 200, SPR 160,180, SPW-C 200
WKR01J	5,5/6,3	275	205-257	19	SPW-S 220,240, SPR 200

Self-drilling screw with washer for mounting sandwich panels to steel substrate. Drilling capacity up to 12 mm					
Name	Screw diameter [mm]	Screw length [mm]	Thickness range of the installed sandwich panel [mm]	Washer diameter [mm]	Use of a connector for a specific sandwich panel. Note - for roof panel when using ridge tiles, you must take into account ridge dimension
WKR02A	5,5/6,3	70	34-45	19	SPW-S 40, SPW-H 60,
WKR02B	5,5/6,3	90	34-65	19	SPW-S 60, SPW-H 80,
WKR02C	5,5/6,3	110	54-85	19	SPW-S 80, SPW-H 100, SPR 40
WKR02D	5,5/6,3	130	74-105	19	SPW-S 100, SPW-H 120, SPR 60
WKR02E	5,5/6,3	150	94-125	19	SPW-S 120, SPR 80, SPW-C 120
WKR02F	5,5/6,3	175	119-150	19	SPR 100
WKR02G	5,5/6,3	185	119-160	19	SPW-S 160, SPR 120, SPW-C 160
WKR02H	5,5/6,3	200	134-175	19	SPW-S 160, SPR 120, SPW-C 160
WKR02I	5,5/6,3	230	164-205	19	SPW-S 180,200, SPR 160, SPW-C 200
WKR02J	5,5/6,3	285	209-260	19	SPW-S 220,240, SPR 220

Self-drilling screw with washer for mounting sandwich panels to steel substrate. Drilling capacity up to 20 mm					
Name	Screw diameter [mm]	Screw length [mm]	Thickness range of the installed sandwich panel [mm]	Washer diameter [mm]	Use of a connector for a specific sandwich panel. Note - for roof panel when using ridge tiles, you must take into account ridge dimension
WKR03A	5,5/6,3	82	30-50	19	SPW-S 40, SPW-H 60,
WKR03B	5,5/6,3	92	40-60	19	SPW-S 60, SPW-H 80,
WKR03C	5,5/6,3	112	40-80	19	SPW-S 80, SPW-H 100, SPR 40
WKR03D	5,5/6,3	165	93-133	19	SPW-S 100,120, SPW-H 120, SPR 60, 80, SPW-C 120
WKR03E	5,5/6,3	205	123-173	19	SPW-S 160, SPR 100, 120, SPW-C 160
WKR03F	5,5/6,3	255	163-223	19	SPW-S 180, 200, 220, SPR 110, 160, 180

Self-drilling screw with washer for mounting sandwich panels to concrete and wood substrate.					
Name	Screw diameter [mm]	Screw length [mm]	Thickness range of the sandwich panel to be installed for wood substrate hef=40 mm [mm]	Washer diameter [mm]	Use of a connector for a specific sandwich panel. Note - for roof panel when using ridge tiles, you must take into account ridge dimension. For concrete, the selection is individual.
WKR04A	6,3/7,0	113	50-70	19	SPW-S 60,
WKR04B	6,3/7,0	138	75-95	19	SPW-S 80, SPW-H 100, SPR 40
WKR04C	6,3/7,0	153	90-110	19	SPW-S 100, SPW-H 120, SPR 60
WKR04D	6,3/7,0	173	110-130	19	SPW-S 120, SPR 80, SPW-C 120
WKR04E	6,3/7,0	203	140-160	19	SPW-S 160, SPR 100, 120, SPW-C 160
WKR04F	6,3/7,0	228	165-185	19	SPW-S 180, SPW-C 180
WKR04G	6,3/7,0	253	190-210	19	SPW-S 200, SPR 160, SPW-C 200

Self-drilling screw with steel washer for longitudinal overlapping sheet metal fixing. Drilling capacity up to 2.5 mm



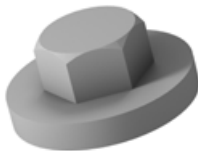
Washer for fixing roof sandwich panels



Sealed ALU/steel rivet



Cap for masking screw heads



Screw for fixing skylights to roof panels



SDS+ concrete drill bits



Self-drilling screw with steel washer for longitudinal overlapping sheet metal fixing. Drilling capacity up to 2.5 mm				
Name	Screw diameter [mm]	Screw length [mm]	Washer diameter [mm]	Quantity per box [pcs]
WKR05A	4,8	19	14	250
WKR05B	4,8	35	14	250

Washer for fixing roof sandwich panels				
Name	Top wave width [mm]	Bottom wave width [mm]	tilt angle [°]	Quantity per box [pcs]
WKR06A	22	68	30	100

Sealed ALU/steel rivet				
Name	Rivet diameter [mm]	Rivet length [mm]	Mounting hole [mm]	Quantity per box [pcs]
NIT01A	4	11	4,1	500
NIT01B	4,8	11-12,5	4,9	500

Cap for masking screw heads		
Name	Screw head diameter [mm]	Quantity per box [pcs]
KAP01A	8	100

Screw for fixing skylights to roof panels					
Name	Screw diameter [mm]	Screw length [mm]	Drill diameter [mm]	Thickness of materials to be joined [mm]	Quantity per box [pcs]
WKR05A	10	25	10	14	100
WKR05B	10	38	10	27	200

SDS+ concrete drill bits				
Name	Drill diameter [mm]	Total length of the drill [mm]	Drill working length [mm]	Quantity [pcs]
WIE01A	5	110	50	1
WIE01B	5	160	100	1
WIE01C	5	210	150	1
WIE01D	5	260	200	1
WIE01E	5	310	250	1
WIE01F	5	410	350	1
WIE02A	5,5	110	50	1
WIE02B	5,5	160	100	1
WIE02C	5,5	210	150	1
WIE02D	5,5	260	200	1
WIE02E	5,5	310	250	1
WIE02F	5,5	350	300	1
WIE02G	5,5	410	350	1



Stress diffuser do montażu płyt warstwowych



Stress absorber for the installation of sandwich panels				
Name	LxWxT [mm]	colour	number of holes [pcs].	Quantity per box [pcs]
WKR07A	80x22x1,2	zinc	2	100
WKR07B	100x22x1,2	zinc	3	100
WKR07C	150x22x1,2	zinc	4	100

Ridge gasket



Ridge gasket			
Name	width [mm]	height	thickness [mm]
USZ01	1050	45	20

Polyethylene sealing tapes for roof covers and curtain walls



Polyethylene sealing tapes for roof covers and curtain walls			
Name	Tape dimensions [mm]	Roll length [m]	quantity per box [pcs]
TAS01A	3x9	30	100
TAS01B	3x10	30	90
TAS01C	3x20	30	48
TAS01D	3x30	30	32
TAS01E	3x50	30	18
TAS01F	4x20	20	48
TAS01G	4x40	20	24
TAS01H	5x20	20	48

For the installation of roof sandwich panels with trapezoidal profiling, we recommend ridge tiles, i.e. clamp-shaped socket elements, equipped with a seal on the inside and sized to fit the front and side surfaces of the trapezoidal sandwich panel.

The purpose of the ridge tiles is to distribute the clamping force of the fasteners evenly over larger areas and to ensure the water tightness of joints. In most cases, they are a more effective and efficient solution than conventional EPDM-type sealing compound washers. The quality of the assembly is the responsibility of the contractor and its control supervision. The cause of cover leaks is most often defective performing assembly work. In order to achieve the optimal effect, we recommend the use of an instruction from a BP2 technical advisor. It is also advisable to carry out the installation by specialised teams who have experience in the installation of lightweight housing.



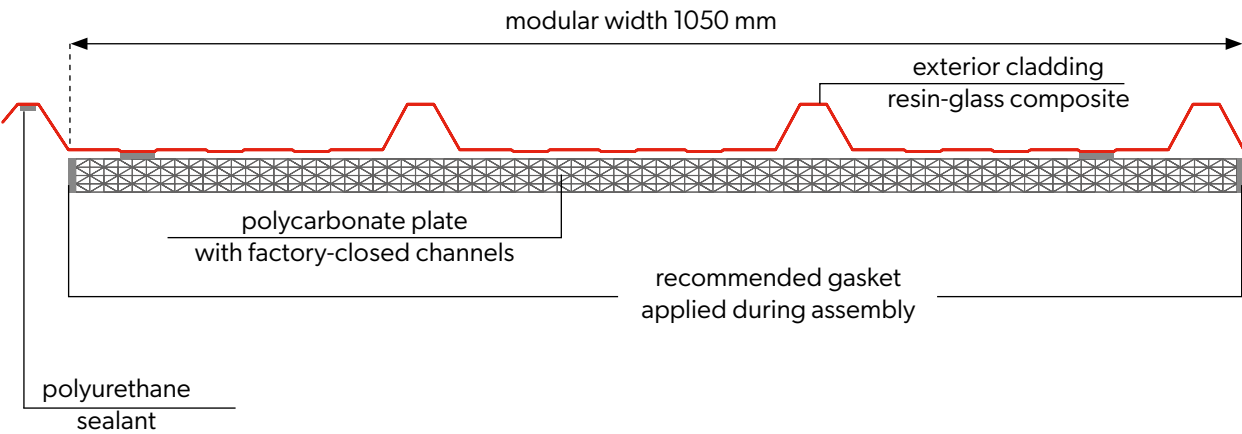


Rooflight

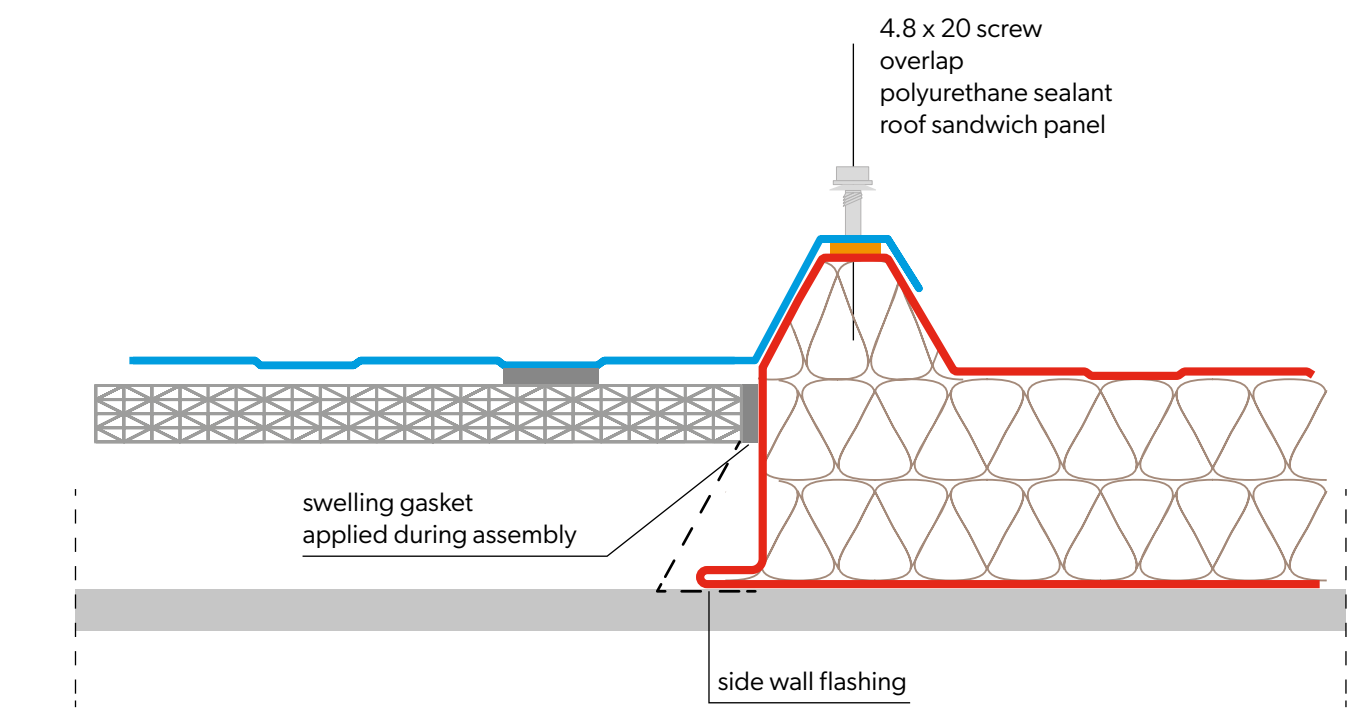
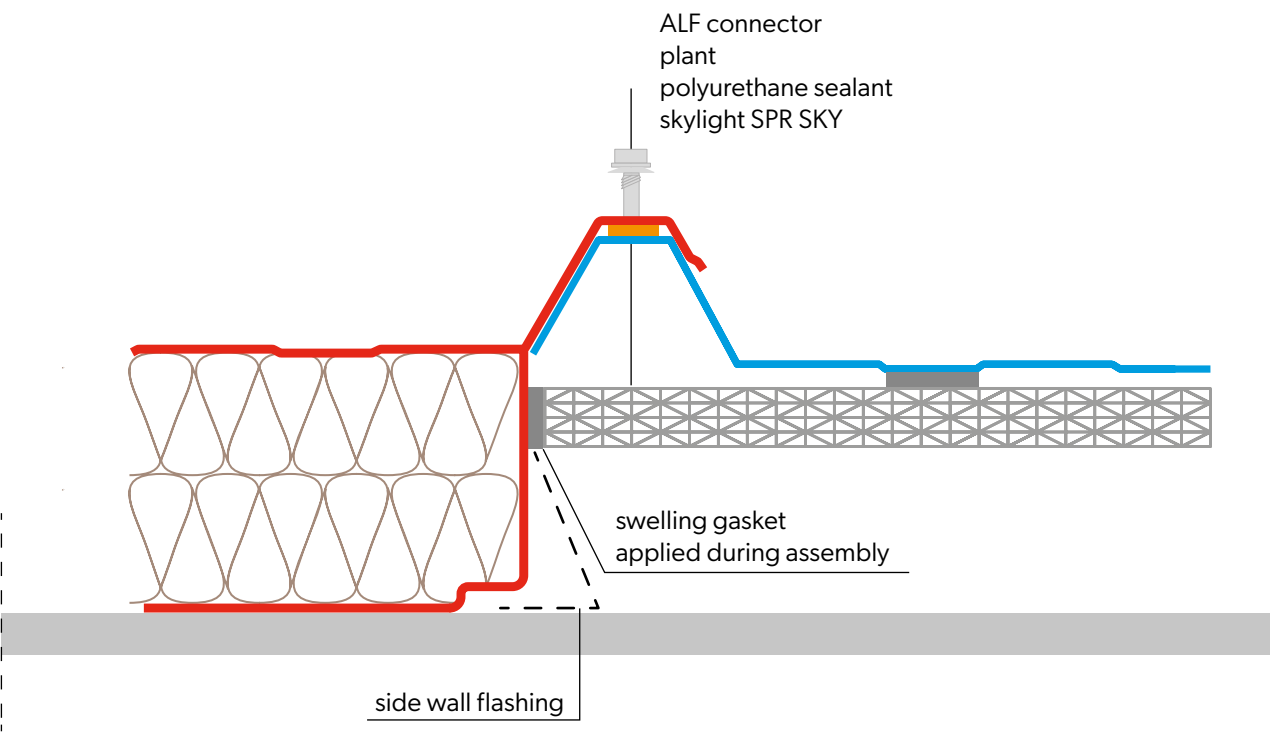


The Livmu skylight constitutes a unique solution combining high levels of mechanical, aesthetic, and thermal properties. A view and cross-section of the Livmu skylight is shown in the figure. The combination of resin-glass composite fitted to match the shape of the roofing material together with polycarbonate constitutes the perfect solution allowing for a warm illumination of roofs made of sandwich panels. The resin-glass composite used in Livmu skylight is made from two layers of resin, where the outer layer is made on the basis of a gelcoat that is resistant to external conditions and especially to UV radiation.

Technical information



Connection diagram for sandwich panels



Technical specifications

Parameters	Value
Material	Resin-glass composite combined with 25 mm or 32 mm polycarbonate
Modular width	1050 mm
Length of opening	7.0 m (maximum cladding length 7.2 m) It is allowed to combine skylights at length directly on site
Recommended minimum roof pitch	10% (at 20 cm overlap)
Maximum support spacing	1,5 m
Thickness	Polycarbonate 25 mm - 30 mm + hump height Polycarbonate 32 mm - 35 mm + hump height
Weight	5,9 kg ± 5%
Acceptable dimensional deviations in length, width, and thickness of skylight elements	± 5%
Heat penetration coefficient	U = 1.5 W/m²K with 25 mm polycarbonate U = 1.1 W/m²K with 32 mm polycarbonate
Light penetration	50% ± 5%

Using the SPR-SKY skylight

Using Livmu skylight constitutes an effective solution for providing daylight into a building. It can replace electrical lighting already at a roof coverage of between 7 and 15%. The chambered design of the skylight limits excessive temperature rises caused by solar radiation and minimises the loss of heat stored in the building. Skylights can be used in industrial buildings with so-called sloping roofs, i.e. roofs with an angle of inclination greater than 10% in the form of performing a warm sandwich panel covering.

The SPR-SKY skylight can be installed as a spotlight or opaque strip of light from ridge to eaves, at the centre of the slope, at the ridge, from the centre of the slope to the eaves.

Livmu skylight connect to sandwich panels via side joints (at the humps) and end joints (overlapping), but the thickness of the SPR-SKY skylight cladding is 3-4 times greater than the thickness of the external panel cladding. This means that at the overlap joints between the skylight cladding and the panel, they do not adhere perfectly and therefore, particular attention must be paid to sealing these joints during design and installation. It is also important to bear in mind that skylights are not as strong as the adjacent cladding made of sandwich panels, so installation must be carried out in accordance with building regulations and practices in order to ensure durability and airtightness.



3.

Technical information

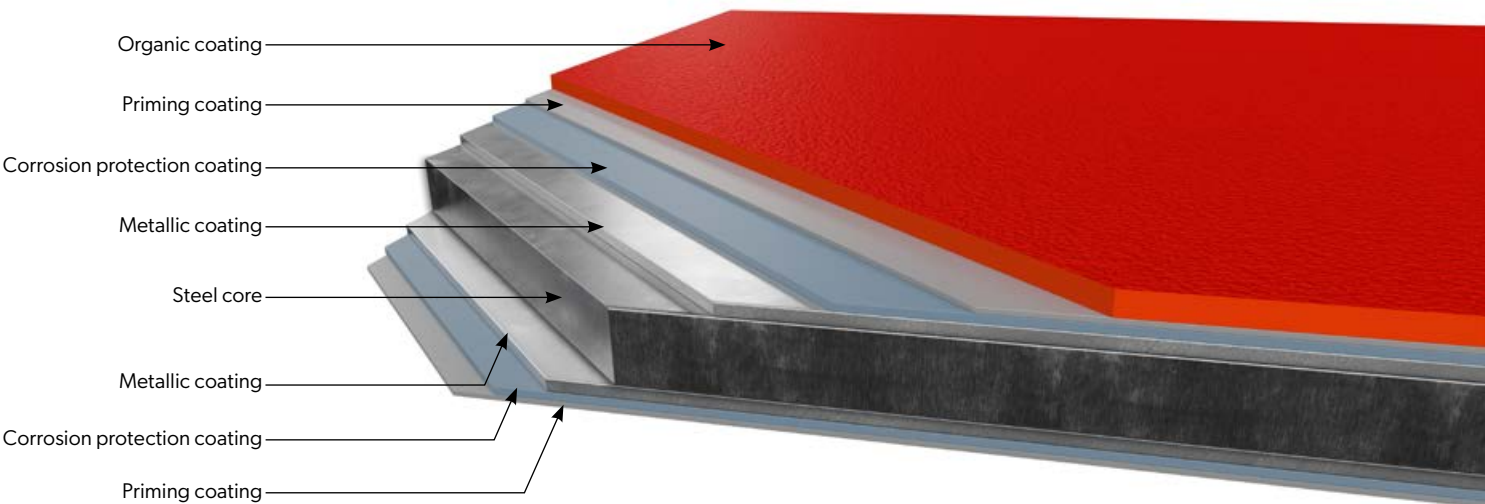
- 52. Coated sheets
- 53. Color range
- 54. Coatings characteristics
- 55. Coatings properties

Coated sheets

COATED SHEETS [HC, INT, RAL]

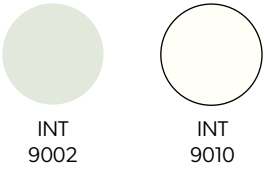
Coated sheets are produced on the basis of hot-dip galvanized batch or covered with a dedicated alloy (zinc, magnesium zinc, aluminium zinc). This material, is cleaned during the pre-treatment process, and is subjected to a passivation process and then multi-layer coated with one of the many available coatings. This provides excellent protection for the metallic layers and the steel core against atmospheric factors.

Coated sheet cross-section



Colour range

POLYESTER Interior [INT] - colours available for interior cladding



POLYESTER Standard [RAL] - colours available for external cladding



HERCULIT [HC]



MULTILAYER 40 [MLT] - colours available for external cladding



The printing technology does not allow the accurate rendering of colours, therefore the colours shown are indicative and may differ from the actual colours.



In addition, upon request, custom colours and coatings are available, outside the presented pallet (PVDF, PUR, PVC (P), PVC (F) - FoodSafe)

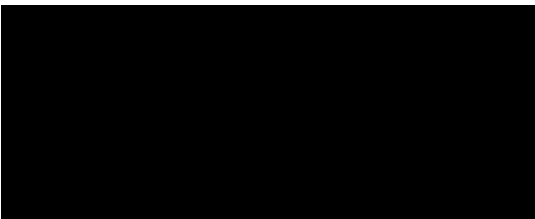
Coatings characteristics

POLYESTER Interior [INT]



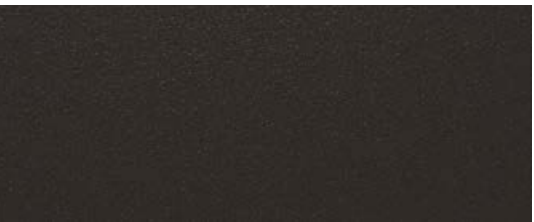
A 15 µm polyester coated sheet with a smooth and glossy surface. Due to its low thickness, the organic coating is mainly intended for interior applications and building components not directly exposed to atmospheric agents.

POLYESTER Standard [RAL]



Basic organic coating 25 µm thick. The surface is uniform, smooth-glossy or metallic. A material with very wide applications. It is available in a rich palette of colours described in using the universal RAL chart.

HERCULIT [HC]



This is a coating developed in close collaboration with a leading manufacturer of paints for the top steel mills in Europe. Many years of studying the coatings used to date and monitoring the needs of customers, with particular emphasis on the needs of roofers, allowed us to condense so many different advantages into one product. HERCULIT is a polyurethane-cured polyester, with high resistance to mechanical damage, 35 µm thick .

SP35 Multilayer [SP35/MULTI]



40 µm thick polyester paint with Z275 zinc coating or ZM120 zinc-magnesium. It is characterised by wood structure and adequate protection against corrosion and UV radiation. Such a combination allows external use, especially where high resistance to weather conditions and high aesthetics are required.

Coatings properties

The following overview is indicative.

Code	Coating thickness	Corrosion resistance	UV resistance
POLYESTER Interior [INT]	15 µm	RA2	not applicable
POLYESTER Standard [RAL]	25 µm	RC3	RUV2
HERCULIT [HC]	35 µm	RC4	RUV4
MULTILAYER 40 [MLT]	40 µm	RC3	RUV3

Guidelines for installing sandwich panels with dark-coloured claddings

For the correct operation of installed sandwich panels, it is recommended to follow the guidelines set out by the manufacturer when designing and installing them on buildings, especially for sandwich panels with dark colours. This is regulated by the PN-EN 14509:2010 standard, which divides it into 3 basic colour groups: very light, light and dark. For each colour that is in these groups temperature values are assigned for the outer cladding of sandwich panels and are respectively:

- 1. +55 °C for very light colours
- 2. +65 °C for light colours
- 3. +80 °C for dark colours.

When designing facades and roofs cladded with sandwich panels in a specific colour, it is necessary to perform static calculations take into account temperature differences assuming a base temperature for the external environment of +20 °C. It is also recommended to avoid when designing, the multi-span systems, which are very unfavourable for dark colours. For wall panels in colour group III the maximum length should not exceed 9.5 m and for roof panels 15.0 m. When installing sandwich panels in dark colours, it is recommended that the outside temperature should not be below 10°C. Failure to meet all these conditions may result in the deterioration of the aesthetics of the cladding made of composite panels.

Colour group	Colours according to RAL palette
Group 1 - very light	1015, 7035, 9002, 9010
Group 2 - light	1002, 6011, 9006
Group 3 - dark	3000, 3005, 3009, 3011, 5010, 6005, 6020, 6029, 7016, 7024, 8004, 8017, 8019, 9005, 9007



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