

RUUKKI SANDWICH PANELS FOR ENERGY- EFFICIENT BUILDINGS

PRODUCT CATALOGUE 2020

RUUKKI

Building lifetime efficiency

Reduce your building's energy cost up to 20%

We can help you to reduce heating energy costs with Ruukki's envelope solution – the most air tight building envelope solution on the market.

Highly airtight Ruukki energy panel envelope enables you to significantly reduce heating energy consumption. In addition, good air tightness helps in meeting the ever increasing energy efficiency requirements set by national building regulations.

We have such absolute faith in the low air leakage rate of our Ruukki energy panel system that we provide a special air tightness guarantee: if the guaranteed air leakage rate is not achieved, you get your money back. In addition to maximising energy savings, we also offer different solar wall systems for generating 100% renewable energy. These systems can be easily integrated with our air tight energy panel system.

Our way of working will help you choose the most cost efficient solutions and level of energy efficiency for your buildings' lifecycle easily and reliably.

Reducing environmental impact

Ruukki energy panel system reduces the CO₂ emissions caused by your building over its life time, too. Thanks to lower heating energy need the CO₂ emissions created by heating are reduced in the same ratio.

You can further reduce the environmental impact of your building by choosing Ruukki life panel, the most sustainable sandwich panel in our portfolio. Thanks to the exceptionally high recycled material content of its insulation material (over 70%), it provides up to 20% lower GWP (Global warming potential) compared to traditional mineral wool cored panels.

We have also combined the best features from both products for the ultimate sustainable solution: Ruukki life energy panel. By selecting this product you can be sure that you are maximizing the sustainability of your building's envelope. This also contributes in maximized credits in both **LEED and BREEAM** certification systems. Our special panels for cold storage guarantee high value of heat resistance. Very low thermal conductivity λ allows you to improve significantly thermal parameters of walls made with the use of these panels.

We believe you will find products that perfectly match your needs as to energy and environmental efficiency. Please join us in building lifetime efficiency for your construction projects!

For latest technical information, please visit www.ruukki.com/sandwichpanels.



Ruukki's sandwich panels – an adaptable solution for your project



Our sandwich panels are versatile prefabricated construction elements consisting of two colour-coated steel sheet layers with an inner insulation core. Insulation core can be either polyisocyanurate (PIR) or mineral wool (MW).

The sandwich panels have a variety of applications, including facades, roofs, compartmenting structures, partition walls and ceilings. They can be used in industrial and commercial buildings, sports facilities, warehouses and power plants, as well as in construction for the food industry and for demanding cold room applications.

Product features

- A wide range of profiling options ensures unique design.
- A variety of colours for interesting facade appearance.
- Low own weight and long spans.
- Excellent insulation parameters thanks to a good thermal conductivity factor.
- Reaction to fire as per EN 13501-1: A2-s1, d0 with mineral wool core, B-s1, d0 for some dedicated X-PIR and X-PIRS sandwich panels, B-s2, d0 for other X-PIR, X-PIRS, E-PIR, E-PIRS or E-PIRE sandwich panels.
- Excellent fire resistance and acoustics thanks to a non-combustible mineral wool core.
- Innovative technology increasing strength parameters of the PIR core's structure provides load-bearing capacity of E-PIRS and X-PIRS sandwich panels up to 40% higher comparing to the standard solutions.
- Superior joint tightness thanks to factory-applied seals and properly profiled edges.
- Sandwich panels are available with a complete set of standard accessories and steel flashings.

Benefit in many ways by choosing Ruukki's sandwich panels



Complete package

Unlike many producers, Ruukki provides its customers with a complete sandwich panel package – from customized design to meet specific project needs, through selection of the right panel type, to choice of product features and specification of essential accessories. Our sandwich panel portfolio is supported by comprehensive services and installation.

Versatility

The excellent versatility of Ruukki's panels makes them a universal construction solution for a wide range of architectural applications. The choice of core thickness, long spans, various shapes, coatings and colours, as well as the potential for horizontal or vertical installation, gives designers a wealth of options. Our sandwich panel offer is complemented by a wide range of dedicated flashings and accessories.

Quick installation

When time becomes crucial to a construction project, Ruukki's sandwich panel system is an efficient solution ensuring quick and cost-saving execution. The tight seam structure guarantees high quality in vertical installation. The lightweight composition of Ruukki's panels results in cost savings for the foundation, frame and installation.

Fire resistance

Ruukki's sandwich panels offer excellent fire safety properties. Exceptional fire resistance and acoustic insulation are key features of the mineral wool core panels. For the most popular thickness of 100 mm of PIR core, we have achieved EI 30 ratings, one of the best results for PIR panels in terms of fire safety on the European market.

Energy efficiency

Ruukki offers a solution allowing buildings to be more energy efficient and environment friendly. Our sandwich panels display excellent insulation properties and can significantly reduce energy consumption in buildings. In a world of strict environmental requirements and emission limits, Ruukki constantly strives to work towards the sustainability of our business and the quality of products for our customers.

Energy panel delivery might include an energy simulation service, which provides an overall view of a building's total energy consumption, revealing the critical factors in maximizing energy efficiency and the impact an optimised building envelope structure has on a building's heating costs.

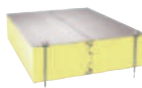
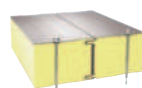
Strength and quality

Ruukki's panels, thanks to their high quality core and cladding materials, and innovative glueing system, boast excellent durability, corrosion resistance, thermal insulation and mechanical properties. Our calculated strength tables allow the quick and easy selection of panels suitable for a particular building. With Ruukki panels, even dark colours can be used successfully. With our panels, customer buildings will benefit from longer life.

Ruukki's sandwich panel offering

ENERGY EFFICIENT PANELS FOR EXTERNAL AND INTERNAL WALLS

The most energy efficient sandwich panels in our offering. Market-leading energy efficiency is achieved through excellent air tightness.



MINERAL WOOL PANELS:

SPA E LIFE ENERGY/SPA E LIFE
SPB WEE ENERGY/SPB WEE
SPB WE ENERGY/SPB WE
SPB WEF ENERGY/SPB WEF
SPB W ENERGY/SPB W
SPB WF ENERGY/SPB WF
SPB WS ENERGY/SPB WS
SP2D WE ENERGY/SP2D WE
SP2D W ENERGY/SP2D W

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PIR PANELS:

SP2B E-PIR ENERGY/SP2B E-PIR
SP2B E-PIR S ENERGY/SP2B E-PIR S
SP2B X-PIR ENERGY/SP2B X-PIR
SP2B X-PIR S ENERGY/SP2B X-PIR S
SP2E E-PIR ENERGY/SP2E E-PIR
SP2E E-PIR S ENERGY/SP2E E-PIR S
SP2E X-PIR ENERGY/SP2E X-PIR
SP2E X-PIR S ENERGY/SP2E X-PIR S
SP2D E-PIR ENERGY/SP2D E-PIR
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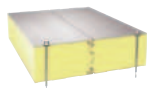
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SPB WFI

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COLD STORE PANELS

These panels have the best U-values in our offering. They are ideal also for external walls in other building types with high demand for thermal insulation.

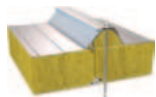


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Wide range of high quality panels for roof applications



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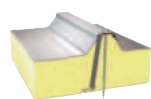
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PANELS FOR AGRICULTURAL BUILDINGS

Panels especially designed for use in agricultural buildings



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* For the latest information about panel portfolio and parameters log on to ruukki.com

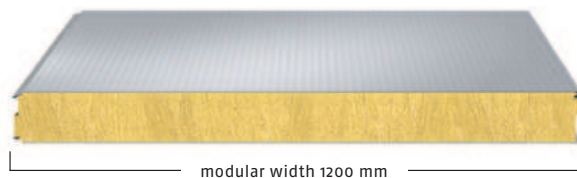
Ruukki® energy panel for external walls

SPA E LIFE ENERGY SPA E LIFE

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- With its exceptionally highly recycled content, this sustainable sandwich panel minimises the use of raw materials and energy as well as reduces the carbon emissions during the construction phase. Our life panel can be re-used and fully recycled. It is an ideal solution for facades with high requirements for sustainability.
- Using Ruukki's solution, you can receive more credits in LEED and BREEAM certification systems.



- This panel type is intruder resistant in accordance with SSF 1047, class 2.
- The filling consisting of non-combustible and environmentally friendly soft mineral wool with low thermal conductivity coefficient ensures very good thermal insulation of this panel. Properly milled core increases air-tightness and provides high sound insulation.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width mm	Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
			External mm	Internal mm					
150	150	1200	0.6	0.5	13.5	19.5	0.25	A2-s1, d0	29
200	200					22.2	0.19		29
230	230					24.2	0.16		29

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation:			
Thickness (mm)	150	200	230
EI 30	7.5 / -	7.5 / -	7.5 / -
EI 30 (stainless steel)	7.5 / -	7.5 / -	7.5 / -
EI 60	7.5 / -	7.5 / -	7.5 / -
EI 60 (stainless steel)	7.5 / -	7.5 / -	7.5 / -

Profiling options	Linear	Micro profiled	Flat	Ribbed
External	● L50	● M15	● F	● R150, R200, R600
Internal	● L50	● M15	● F	● R150, R200, R600

● available

Standard external colours – Hiarc



Optional internal material



Standard external colours – Hiarc matt



Standard external colours – Polyester



Standard internal colours – Polyester

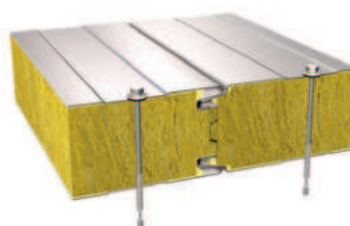
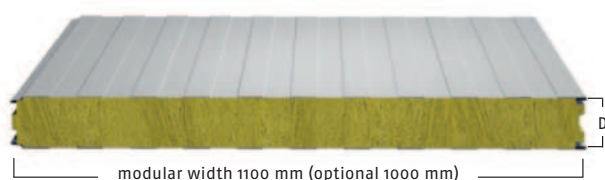


All properties are declared in accordance with EN 14509 and related standards.

Ruukki® energy panel for external walls

SPB WEE ENERGY SPB WEE

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- This product, made with the use of advanced production processes, offers optimal performance of the designed solution.
- The filling consisting of non-combustible and environmentally friendly soft mineral wool with low thermal conductivity coefficient ensures very good thermal insulation of this panel. Properly milled core increases air-tightness and provides high sound insulation.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
		Standard mm	Optional (B) mm	External mm	Internal mm					
160	160	1100	1000	0.6 or 0.7 ¹⁾	0.5 or 0.6	12.0	20.7	0.23	A2-s1, d0	≥ 29
170	170						21.3	0.22		
180	180						22.1	0.21		
200	200						23.5	0.19		
230	230						25.5	0.16		

¹⁾ thickness 0,7 mm required at facings in flat profiling (III colour group or metallic colours).

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation:					
Thickness (mm)	160	170	180	200	230
EI 30	7.5 / -	7.5 / -	7.5 / -	7.5 / -	7.5 / -
EI 60	7.5 / -	7.5 / -	7.5 / -	7.5 / -	7.5 / -

Profiling options	Linear	Micro profiled	Flat	Ribbed
Standard modular width 1100 mm				
External	● L	● M	● F	● R275, R550
Internal	● L		● F	
Optional modular width (B) 1000 mm				
External	● L	● M	● F	● R28, R250, R500
Internal	● L		● F	

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III colour group) and panels with flat facings are available on page 7.

²⁾ Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

³⁾ Colours available also for sandwich panels in optional modular width (B) 1000 mm.

All properties are declared in accordance with EN 14509 and related standards.

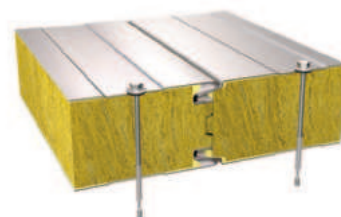
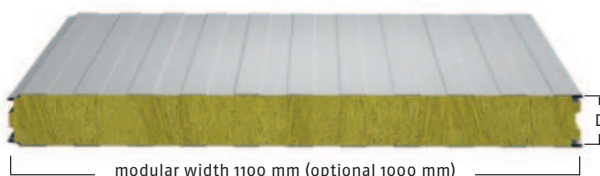
Ruukki® energy panel for external walls

SPB WE ENERGY SPB WE

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- It is a perfect solution for most buildings and structures, combining high quality with very good technical properties.



- The filling consisting of non-combustible and environmentally friendly soft mineral wool with low thermal conductivity coefficient ensures very good thermal insulation of this panel. Properly milled core increases air-tightness and provides high sound insulation.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
		Standard mm	Optional (B) mm	External mm	Internal mm					
–	80	1100	1000	0.6 or 0.7 ¹⁾	0.5 or 0.6	12.0	18.9	0.54	A2-s1, d0	≥ 29
–	100						18.1	0.41		
–	120						19.9	0.32		
–	140						21.7	0.28		
–	150						22.9	0.26		
160	160						23.6	0.24		
170	170						24.7	0.23		
180	180						25.4	0.22		
200	200						27.2	0.20		
230	230						30.1	0.17		

1) thickness 0,7 mm required at facings in flat profiling (III colour group or metallic colours).

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation										
Thickness (mm)	80	100	120	140	150	160	170	180	200	230
EI 30	–	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60	–	–	6.0 / 6.0	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5

Profiling options	Linear	Micro profiled	Flat	Ribbed*
Standard modular width 1100 mm				
External	● L	● M	● F	● R275, R550
Internal	● L		● F	

● available

* For module 1000 mm, external profiling R28, R250, R500

Standard external colours – Polyester



Standard internal colours – Polyester



Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

2) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

3) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

All properties are declared in accordance with EN 14509 and related standards.

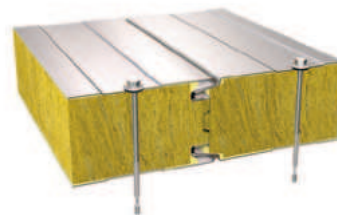
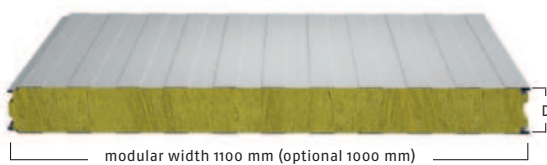
Ruukki® energy panel for external walls

SPB WEF ENERGY SPB WEF

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- The panel's excellent quality ensures very good fire resistance properties, thus increasing fire safety of buildings.



- The filling consisting of non-combustible and environmentally friendly soft mineral wool with low thermal conductivity coefficient ensures very good thermal insulation of this panel. Properly milled core increases air-tightness and provides high sound insulation.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
		Standard mm	Optional (B) mm	External mm	Internal mm					
–	150	1100	1000	0.6 or 0.7 ¹⁾	0.5 or 0.6	12.0	22.9	0.26	A2-s1, d0	≥ 29
160	160						23.6	0.24		
170	170						24.7	0.23		
180	180						25.4	0.22		
200	200						27.2	0.20		
230	230						30.1	0.17		

1) thickness 0,7 mm required at facings in flat profiling (III colour group or metallic colours).

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation:						
Thickness (mm)	150	160	170	180	200	230
EI 30	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 90	7.5 / 4.0	7.5 / 4.0	7.5 / 4.0	7.5 / 4.0	7.5 / 4.0	7.5 / 4.0
EI 120	7.5 / –	7.5 / –	7.5 / –	7.5 / –	7.5 / –	7.5 / –

Ceiling fire resistance class & maximum span length (m); stitched joint on upper facing						
Thickness (mm)	150	160	170	180	200	230
EI 30 (inside)	3.0	3.0	3.0	3.0	3.0	–
EI 60 (inside)	3.0	3.0	3.0	3.0	3.0	–
EI 90 (inside)	3.0	3.0	3.0	3.0	3.0	–
EI 120 (inside)	3.0	3.0	3.0	3.0	3.0	–

Profiling options	Linear	Micro profiled	Flat	Ribbed
Standard modular width 1100 mm				
External	● L	● M	● F	● R275, R550 *
Internal	● L		● F	

● available

* For module 1000 mm, external profiling R28, R250, R500

Standard external colours – Polyester



Standard internal colours – Polyester



Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

2) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

3) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

All properties are declared in accordance with EN 14509 and related standards.

Economical & fire resistant

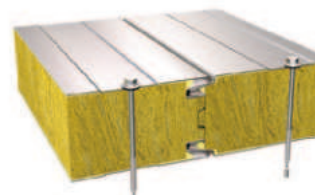
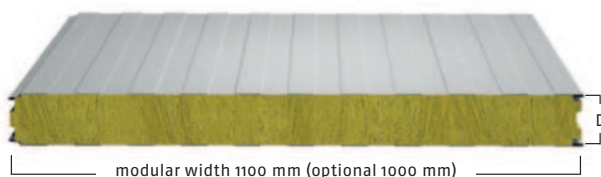
Ruukki® energy panel for external walls

SPB W ENERGY SPB W

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- It is a perfect solution for most buildings and structures, combining high quality with very good technical properties.



- With the filling consisting of non-combustible and environmentally friendly hard mineral wool, this sandwich panel ensures excellent fire resistance. Properly milled core increases air-tightness and contributes to outstanding sound insulation.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
		Standard mm	Optional (B) mm	External mm	Internal mm					
–	80	1100	1000	0.6 or 0.7 ¹⁾	0.5 or 0.6	12.0	18.2	0.51	A2-s1, d0	≥32
–	100						20.6	0.41		
–	120						22.9	0.34		
–	140						25.2	0.30		
–	150						26.5	0.28		
160	160						27.5	0.26		
170	170						28.8	0.25		
180	180						29.8	0.23		
200	200						32.2	0.21		
230	230						35.7	0.18		

1) thickness 0,7 mm required at facings in flat profiling (III colour group or metallic colours).

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation										
Thickness (mm)	80	100	120	140	150	160	170	180	200	230
EI 30	4.0 / –	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60	–	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 90	–	–	–	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 120	–	–	–	–	–	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0

Profiling options	Linear	Micro profiled	Flat	Ribbed
Standard modular width 1100 mm				
External	● L	● M	● F	● R275, R550*
Internal	● L		● F	

● available

* For module 1000 mm, external profiling R28, R250, R500

Standard external colours – Polyester



Standard internal colours – Polyester



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3) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

All properties are declared in accordance with EN 14509 and related standards.

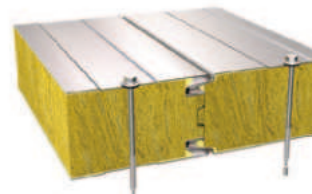
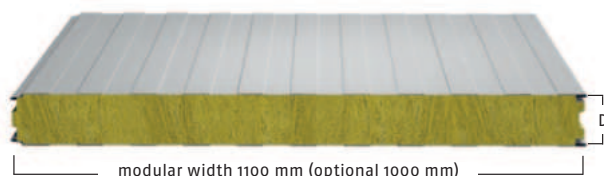
Ruukki® energy panel for external walls

SPB WF ENERGY SPB WF

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- It is a perfect solution for most buildings and structures, combining high quality with very good technical properties.



- With the filling consisting of non-combustible and environmentally friendly hard mineral wool, this sandwich panel ensures excellent fire resistance. Properly milled core increases air-tightness and contributes to outstanding sound insulation.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
		Standard mm	Optional (B) mm	External mm	Internal mm					
–	120	1100	1000	0.6 or 0.7 ¹⁾	0.5 or 0.6	12.0	23.5	0.36	A2-s1, d0	≥32
–	140						25.9	0.31		
–	150						27.3	0.29		
160	160						28.3	0.27		
170	170						29.7	0.26		
180	180						30.7	0.24		
200	200						33.2	0.22		
230	230						36.9	0.19		

1) thickness 0,7 mm at facings in flat profiling (III colour group or metallic colours).

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation								
Thickness (mm)	120	140	150	160	170	180	200	230
EI 60	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 90	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 120	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0
EI 180	–	–	4.0 / –	6.0 / –	6.0 / –	7.5 / –	7.5 / –	7.5 / –
EI 240	–	–	–	–	–	–	6.0 / –	6.0 / –

Ceiling fire resistance class & maximum span length (m); stitched joint on upper facing								
Thickness (mm)	120	140	150	160	170	180	200	230
EI 60 (inside)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	–
EI 90 (inside)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	–
EI 120 (inside)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	–

Profiling options	Linear	Micro profiled	Flat	Ribbed
Standard modular width 1100 mm				
External	● L	● M	● F	● R275, R550*
Internal	● L		● F	

● available

* For module 1000 mm, external profiling R28, R250, R500

Standard external colours – Polyester



Standard internal colours – Polyester



Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

2) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

3) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

Semi-strong & fire resistant

All properties are declared in accordance with EN 14509 and related standards.

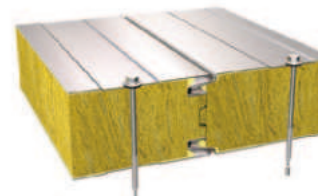
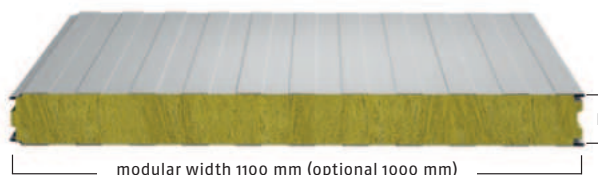
Ruukki® energy panel for external walls

SPB WS ENERGY SPB WS

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- It is a perfect solution for most buildings and structures, combining high quality with very good technical properties.



- Advanced technology contributing to the improvement of panel strength ensures very good mechanical properties of this sandwich panel.
- With the filling consisting of non-combustible and environmentally friendly hard mineral wool, this sandwich panel ensures excellent fire resistance. Properly milled core increases air-tightness and contributes to outstanding sound insulation.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/mK	Reaction to fire	Sound insulation R _w dB
		Standard mm	Optional (B) mm	External mm	Internal mm					
–	100	1100	1000	0.6 or 0.7 ¹⁾	0.5 or 0.6	12.0	21.0	0.43	A2-s1, d0	≥32
–	120						23.5	0.36		
–	140						25.9	0.31		
–	150						27.3	0.29		
160	160						28.3	0.27		
170	170						29.7	0.26		
180	180						30.7	0.24		
200	200						33.2	0.22		
230	230						36.9	0.19		

1) thickness 0,7 mm at facings in flat profiling (III colour group or metallic colours).

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation									
Thickness (mm)	100	120	140	150	160	170	180	200	230
EI 30	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 90	–	–	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 120	–	–	–	–	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0

Profiling options	Linear	Micro profiled	Flat	Ribbed
Standard modular width 1100 mm				
External	● L	● M	● F	● R275, R550*
Internal	● L		● F	

● available

* For module 1000 mm, external profiling R28, R250, R500

Standard external colours – Polyester



Standard internal colours – Polyester



Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

2) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

3) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

All properties are declared in accordance with EN 14509 and related standards.

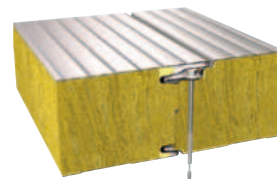
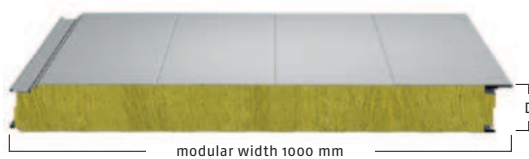
Ruukki® energy panel for external walls

SP2D WE ENERGY SP2D WE

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- It is a perfect solution for most buildings and structures, combining high quality with very good technical properties.



- The filling consisting of non-combustible and environmentally friendly soft mineral wool with low U-value ensures very good thermal insulation of this panel. Properly milled core increases air-tightness and provides high sound insulation.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width mm	Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
			External mm	Internal mm					
–	100	1000	0.6	0.5	12.0	18.5	0.39	A2-s1, d0	≥29
–	120					20.3	0.32		
–	140					22.1	0.28		
–	150					23.2	0.27		
160	160					23.9	0.24		
170	170					24.9	0.23		
180	180					25.8	0.22		
200	200					27.6	0.20		
230	230					30.2	0.17		

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation									
Thickness (mm)	100	120	140	150	160	170	180	200	230
EI 30 (inside)	– / 7.5	– / 7.5	– / 7.5	– / 7.5	– / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60 (inside)	–	–	– / 4.0	– / 4.0	– / 7.5	6.0 / 7.5	6.0 / 7.5	6.0 / 7.5	6.0 / 7.5
EI 30 (outside)	– / 7.5	– / 7.5	– / 7.5	– / 7.5	– / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60 (outside)	–	–	– / 7.5	– / 7.5	– / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 90 (outside)	–	–	–	–	– / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 120 (outside)	–	–	–	–	–	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5

Profiling options	Linear	Micro profiled	Flat	Ribbed
External	● L	● M		● R28, R250, R500
Internal	● L		● F	

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

1) Colours available also in Hiarc max coating (thickness of facing 0,6 mm).

All properties are declared in accordance with EN 14509 and related standards.

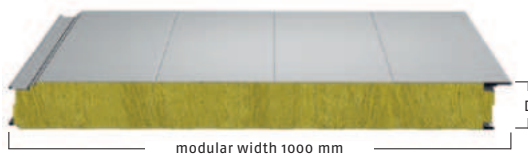
Ruukki® energy panel for external walls

SP2D W ENERGY SP2D W

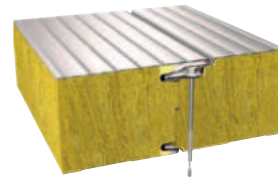


- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.

- It is a perfect solution for most buildings and structures, combining high quality with very good technical properties.
- With the filling consisting of non-combustible and environmentally friendly hard mineral wool, this sandwich panel ensures excellent fire resistance. Properly milled core increases air-tightness and contributes to outstanding sound insulation.



modular width 1000 mm



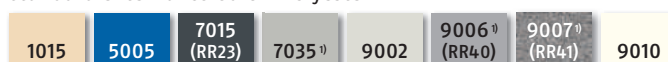
Core thickness ENERGY PANELS mm	Thickness D mm	Modular width mm	Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
			External mm	Internal mm					
–	100	1000	0.6	0.5	12.0	21.0	0.41	A2-s1, d0	≥32
–	120					23.3	0.35		
–	140					25.6	0.30		
–	150					26.9	0.29		
160	160					27.9	0.26		
170	170					29.2	0.25		
180	180					30.2	0.24		
200	200					32.5	0.21		
230	230					35.9	0.19		

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation									
Thickness (mm)	100	120	140	150	160	170	180	200	230
EI 30 (inside)	– / 7.5	– / 7.5	– / 7.5	– / 7.5	– / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60 (inside)	– / 4.0	– / 4.0	– / 4.0	– / 4.0	– / 7.5	6.0 / 7.5	6.0 / 7.5	6.0 / 7.5	6.0 / 7.5
EI 90 (inside)	–	–	–	–	– / 7.5	– / 7.5	– / 7.5	– / 7.5	– / 7.5
EI 120 (inside)	–	–	–	–	–	– / 7.5	– / 7.5	– / 7.5	– / 7.5
EI 30 (outside)	– / 7.5	– / 7.5	– / 7.5	– / 7.5	– / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60 (outside)	– / 7.5	– / 7.5	– / 7.5	– / 7.5	– / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 90 (outside)	–	–	– / 7.5	– / 7.5	– / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 120 (outside)	–	–	–	–	– / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 180 (outside)	–	–	–	–	–	–	4.0 / 7.5	4.0 / 7.5	4.0 / 7.5
EI 240 (outside)	–	–	–	–	–	–	–	– / 6.0	– / 6.0

Profiling options	Linear	Micro profiled	Flat	Ribbed
External	● L	● M		● R28, R250, R500
Internal	● L		● F	

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

1) Colours available also in Hiarc max coating (thickness of facing 0,6 mm).

All properties are declared in accordance with EN 14509 and related standards.

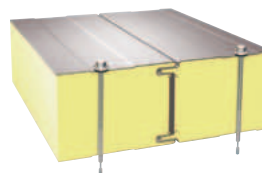
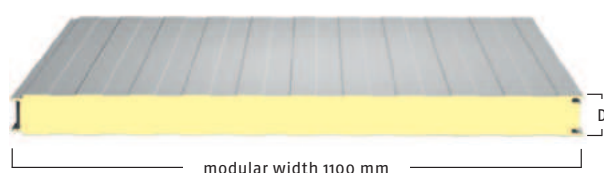
Sandwich panel for external walls

SP2B E-PIR ENERGY SP2B E-PIR

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties allow for the decrease of panel thickness, which transfers directly to lower



transportation and assembly costs, as well as significant savings of building's life cycle costs.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m²	U value W/m²K	Reaction to fire	Sound insulation R _w dB			
		Standard mm	Optional (B) mm	External mm	Internal mm								
—	40	1100	—	0.5 or 0.6 ¹⁾	0.4 or 0.5 ²⁾	18.5	9.3	0.56	B-s2, d0	≥24			
—	60		—				10.1	0.36					
—	80		1000				11.0	0.27					
100	100						11.8	0.22					

1) 0,6 mm thickness required for facings with ribbed profiling in III colour group and for facings with flat profiling in II or III colour group.

2) 0,5 mm thickness required for facings in flat profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation				
Thickness (mm)	40	60	80	100
EI 15	–	–	–	7.5 / 7.5

Profiling options	Linear	Micro profiled	Flat	Ribbed
Standard modular width 1100 mm				
External	● L, L25	● M	● F	● R28, R275, R550
Internal	● L, L25		● F	
Optional modular width (B) 1000 mm				
External	● L, L25	● M		
Internal	● L, L25			

● available

Profiling L25 is available for sandwich panels in thickness 80 and 100 mm.

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III colour group) and panels with flat facings are available on page 7.

3) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

4) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

5) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

All properties are declared in accordance with EN 14509 and related standards.

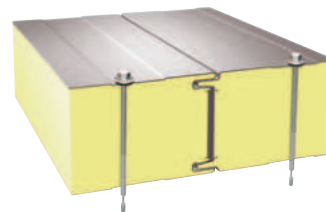
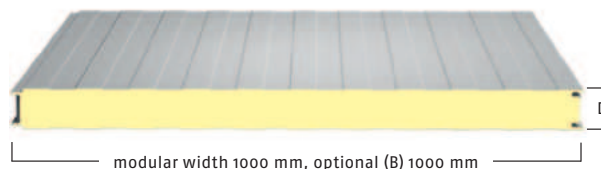
Sandwich panel for external walls

SP2B E-PIR S ENERGY SP2B E-PIR S

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- Innovative technology increasing strength parameters of the panel provides for load-bearing capacity up to 40% higher comparing to standard solutions.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal



insulation properties allow for the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
		Standard mm	Optional (B) mm	External mm	Internal mm					
–	80	1100	1000	0.5	0.4	18.5	11.0	0.27	B-s2, d0	≥24
100	100			or 0.6	or 0.5		11.8	0.22		

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation		
Thickness (mm)	80	100
EI 15	–	7.5 / 7.5

Profiling options	Linear	Micro profiled
External	● L25, L	● M
Internal	● L25	

● available

Standard external colours – Polyester

1015 ³⁾	3013	5005 ³⁾	6011	7015 ³⁾ (RR23)	7016 ³⁾ (RR288)	7035 ³⁾	9002 ³⁾	9006 ^{1,3)} (RR40)	9007 ^{1,3)} (RR41)	9010 ³⁾
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Standard internal colours – Polyester

9002 ³⁾	9010 ³⁾
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Optional one or both sides' facing

FoodSafe laminates ²⁾

Other colours acc. to RAL are available only on special request, following additional arrangements.

Guidelines for the application of sandwich panels in dark colours (III group of colours) are available on page 7.

1) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

2) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

3) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

All properties are declared in accordance with EN 14509 and related standards.

Ruukki® energy panel for external walls

SP2B X-PIR ENERGY SP2B X-PIR

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- The panel's excellent quality ensures very good fire resistance properties, thus increasing fire safety of buildings.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable



polyisocyanurate foam (PIR). Its excellent thermal insulation properties allow for the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
		Standard mm	Optional (B) mm	External mm	Internal mm					
–	40	1100	1000	0.5 or 0.6 ¹⁾	0.4 or 0.5 ²⁾	18.5	9.5	0.56	B-s2, d0	≥24
–	60						10.3	0.36	B-s2, d0	
–	80						11.2	0.27	B-s2, d0	
100	100						12.1	0.22	B-s1, d0	

1) 0.6 mm thickness for facings in ribbed profiling in III colour group and for facings with flat profiling in II or III colour group.

2) 0.5 mm thickness required for facings in flat profiling

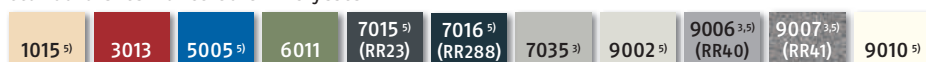
Wall fire resistance class & maximum span length (m); horizontal / vertical orientation:				
Thickness (mm)	40	60	80	100
EI 15	–	–	3.0 / –	7.5 / –
EI 15 (stainless steel)	–	–	–	7.5 / –
EI 30	–	–	–	4.0 / –
EI 30 (stainless steel)	–	–	–	4.0 / –
EW 30	3.0 / –	3.0 / –	3.0 / –	4.0 / –
EW 30 (stainless steel)	–	–	–	6.0 / –

Profiling options	Linear**	Micro profiled**	Flat	Ribbed
External	● L, L25	● M	● F	● R28, R275, R550
Internal	● L, L25		● F	

● available

** This profiling available also for modular width 1000
For stainless steel facings only L linear profiling is available.

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

3) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

4) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

5) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

All properties are declared in accordance with EN 14509 and related standards.

Ruukki® Energy panel for external walls

SP2B X-PIR S ENERGY SP2B X-PIR S

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- Innovative technology increasing strength parameters of the panel provides for load-bearing capacity up to 40% higher comparing to standard solutions.
- The panel's excellent quality ensures very good fire resistance properties, thus increasing fire safety of buildings.



- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties allow for the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
		Standard mm	Optional (B) mm	External mm	Internal mm					
–	80	1100	1000	0.5	0,4	18.5	11.2	0.27	B-s2, d0	≥24
100	100			or 0.6 ¹⁾	or 0,5		12.1	0.22	B-s1, d0	

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation		
Thickness (mm)	80	100
EI 15	3.0 / –	7.5 / 7.5
EI 30	–	4.0 / –
EW 30	3.0 / –	4.0 / –

Ceiling fire resistance class & maximum span length (m); stitched joint on upper facing		
Thickness (mm)	80	100
EI 15 (inside)	–	2.8
EI 30 (inside)	–	2.0

Profiling options	Linear	Micro profiled
External	● L, L25	● M
Internal	● L, L25	

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL are available only on special request, following additional arrangements.

Guidelines for the application of sandwich panels in dark colours (III group of colours) are available on page 7.

1) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

2) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

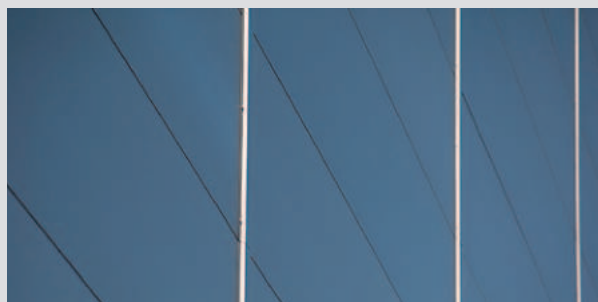
3) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

All properties are declared in accordance with EN 14509 and related standards.

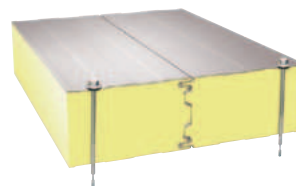
Ruukki® energy panel for external walls

SP2E E-PIR ENERGY SP2E E-PIR

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- Low U-value and proper joint design together with wide thickness range make this sandwich panel an ideal solution for cold storage buildings.



- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties allow for the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width mm		Thickness of facings		Maximum length m	Weight kg/m²	U value W/m²K	Reaction to fire	Sound insulation R _w dB
		Standard	Optional (B) mm	External mm	Internal mm					
120	120	1100	1000	0.5 or 0.6 ¹⁾	0.4 ²⁾ or 0.5	18.5	13.4	0.18	B-s2, d0	≥24
140	140		-				14.3	0.16		
160	160						15.2	0.14		
180	180						16.0	0.12		
200	200						16.8	0.11		

1) 0,6 mm thickness required for facings with ribbed profiling in III colour group and for facings with flat profiling in II or III colour group.

2) Thickness 0.4 mm available for SP2E120E-PIR Energy panel with internal facing in linear profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation:					
Thickness (mm)	120	140	160	180	200
EI 15	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 30	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0
EW 30	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0

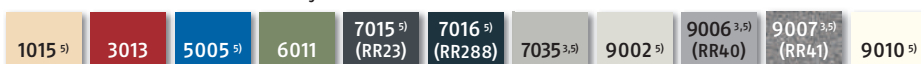
Profiling options	Linear**	Micro profiled**	Flat	Ribbed
Standard modular width 1100 mm				
External	● L, L25	● M	● F	● R28, R275, R550
Internal	● L, L25		● F	

● available

** This profiling available also for modular width 1000

Profiling L25 is available for sandwich panels in thickness 120, 140 and 160 mm.

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III colour group) and panels with flat facings are available on page 7.

3) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

4) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

5) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

For cold-storage and refrigerator applications only light colours (1015, 7035, 9002 and 9010) are recommended.

All properties are declared in accordance with EN 14509 and related standards.

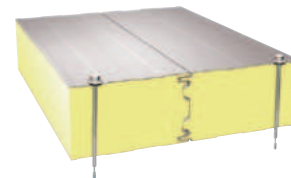
Ruukki® Energy panel for external walls

SP2E E-PIR S ENERGY SP2E E-PIR S

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- Low U-value and proper joint design together with wide thickness range make this sandwich panel an ideal solution for cold storage buildings.
- Innovative technology increasing strength parameters of the panel provides for load-bearing capacity up to 40% higher comparing to standard solutions.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable



polyisocyanurate foam (PIR). Its excellent thermal insulation properties allow for the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width mm		Thickness of facings		Maximum length m	Weight kg/m²	U value W/m²K	Reaction to fire	Sound insulation R _w dB
		Standard	Optional (B) mm	External mm	Internal mm					
120	120	1100	1000	0.5 or 0.6	0.4 ¹⁾ or 0.5	18.5	13.4	0.18	B-s2, d0	≥24
140	140		-				14.3	0.16		
160	160						15.2	0.14		

¹⁾ thickness 0,4 mm available for SP2E120E-PIRS Energy panel with internal facing in linear profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation:			
Thickness (mm)	120	140	160
EI 15	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 30	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0
EW 30	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0

Profiling options	Linear	Micro profiled
External	● L25, L	● M
Internal	● L25	

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL are available only on special request, following additional arrangements.

Guidelines for the application of sandwich panels in dark colours (III group of colours) are available on page 7.

²⁾ Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

³⁾ FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

⁴⁾ Colours available also for sandwich panels in optional modular width (B) 1000 mm.

For cold-storage and refrigerator applications only light colours (1015, 7035, 9002 and 9010) are recommended.

All properties are declared in accordance with EN 14509 and related standards.

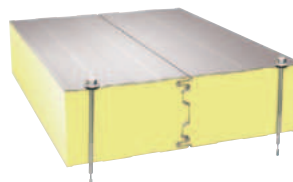
Ruukki® energy panel for external walls

SP2E X-PIR ENERGY SP2E X-PIR

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- Low U-value and proper joint design together with wide thickness range make this sandwich panel an ideal solution for cold storage buildings.
- The panel's excellent quality ensures very good fire resistance properties, thus increasing fire safety of buildings.



- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties allow for the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width mm		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
		Standard	Optional (B) mm	External mm	Internal mm					
120	120	1100	1000	0.5 or 0.6 ¹⁾	0.4 ²⁾ or 0.5	18.5	13.8	0.18	B-s1, d0	≥24
140	140						14.7	0.16		
160	160						15.5	0.14		
180	180						16.4	0.12		
200	200						17.3	0.11		

1) 0,6 mm thickness required for facings with ribbed profiling in III colour group and for facings with flat profiling in II or III colour group.

2) thickness 0,4 mm available for SP2E120X-PIR Energy panel with internal facing in linear profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation:					
Thickness (mm)	120	140	160	180	200
EI 15	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 15 (stainless steel)	7.5 / -	7.5 / -	7.5 / -	7.5 / -	7.5 / -
EI 30	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60	-	-	-	-	6.0 / -

Profiling options	Linear**	Micro profiled**	Flat	Ribbed
Standard modular width 1100 mm				
External	● L, L25	● M	● F	● R28, R275, R550
Internal	● L, L25		● F	

● available

** This profiling available also for modular width 1000

Profiling L25 is available for sandwich panels in thickness 120, 140 and 160 mm.

Stainless steel facings are available only in linear L profiling. Not applicable at SP2E140X-PIR sandwich panel.

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL are available only on special request, following additional arrangements. There is a possibility of light waviness of a panel surface with flat profiling. Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

3) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

4) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

5) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

For cold-storage and refrigerator applications only light colours (1015, 7035, 9002 and 9010) are recommended.

All properties are declared in accordance with EN 14509 and related standards.

Extra performance

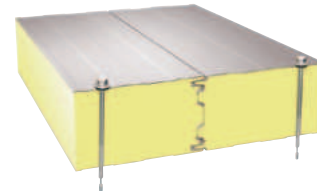
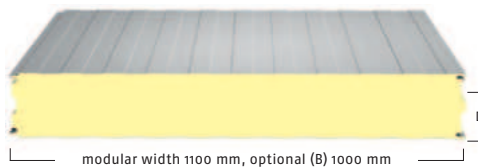
Ruukki® Energy panel for external walls

SP2E X-PIR S ENERGY SP2E X-PIR S

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- Low U-value and proper joint design together with wide thickness range make this sandwich panel an ideal solution for cold storage buildings.
- Innovative technology increasing strength parameters of the panel provides for load-bearing capacity up to 40% higher comparing to standard solutions.



- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties allow for the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width mm		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
		Standard	Optional (B) mm	External mm	Internal mm					
120	120	1100	1000	0.5 or 0.6	0.4 ¹⁾ or 0.5	18.5	13.8	0.18	B-s1, d0	≥24
140	140		—				14.7	0.16		
160	160		—				15.5	0.14		

¹⁾ thickness 0,4 mm available for SP2E120X-PIRS Energy panel with internal facing in linear profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation:			
Thickness (mm)	120	140	160
EI 15	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 30	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EW 30	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5

Profiling options	Linear	Micro profiled
External	● L25, L	● M
Internal	● L25	

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL are available only on special request, following additional arrangements.

Guidelines for the application of sandwich panels in dark colours (III group of colours) are available on page 7.

²⁾ Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

³⁾ FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

⁴⁾ Colours available also for sandwich panels in optional modular width (B) 1000 mm.

For cold-storage and refrigerator applications only light colours (1015, 7035, 9002 and 9010) are recommended.

All properties are declared in accordance with EN 14509 and related standards.

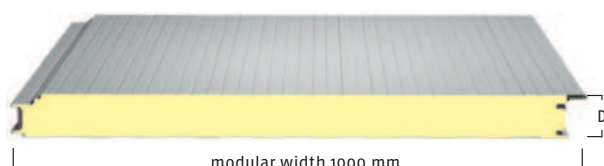
Ruukki® energy panel for external walls

SP2D E-PIR ENERGY SP2D E-PIR

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal



insulation properties allow for the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width mm	Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
			External mm	Internal mm					
–	60	1000	0.5 or 0.6 ¹⁾	0.4 or 0.5 ²⁾	18.5	10.3	0.38	B-s2, d0	≥24
–	80					11.0	0.28		
100	100					11.7	0.22		
120	120					12.4	0.18		

1) 0,6 mm thickness required for facings with ribbed profiling in III colour group and for facings with flat profiling in II or III colour group.

2) thickness 0,5 mm required for facings in flat profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation				
Thickness (mm)	60	80	100	120
EI 15 (inside)	–	–	4.0 / 7.5	4.0 / 7.5
EI 15 (outside)	–	–	7.5 / 7.5	7.5 / 7.5

Profiling options	Linear	Micro profiled	Flat	Ribbed
External	● L	● M	● F	● R28
Internal	● L		● F	

● available

Standard external colours – Polyester

1015	3013	5005	6011	7015 (RR23)	7016 (RR288)	7035 ³⁾	9002	9006 ³⁾ (RR40)	9007 ³⁾ (RR41)	9010
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Standard internal colours – Polyester

9002	9010
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Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

3) Colours available also in Hiarc max coating (thickness of facing 0,6 mm).

All properties are declared in accordance with EN 14509 and related standards.

Ruukki® energy panel for external walls

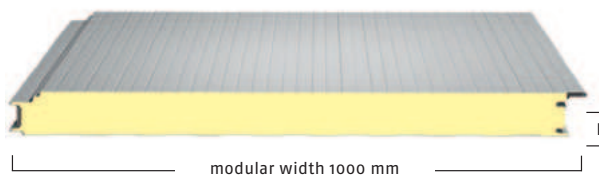
SP2D X-PIR ENERGY

SP2D X-PIR

- This panel ensures excellent air-tightness and energy efficiency. The application of special solutions with structural details and assembly services provided by skilled and certified contractors enable to decrease energy costs of the building and its CO₂ emissions up to 20%.
- Using Ruukki's solutions you can receive more credits in LEED and BREEAM certification systems.
- The panel's excellent quality ensures very good fire resistance properties, thus increasing fire safety of buildings.



- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties allow for the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Core thickness ENERGY PANELS mm	Thickness D mm	Modular width mm	Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
			External mm	Internal mm					
–	60	1000	0.5 or 0.6 ¹⁾	0.4 or 0.5 ²⁾	18.5	10.4	0.38	B-s2, d0	≥24
–	80					11.2	0.28	B-s2, d0	
100	100					12.0	0.22	B-s1, d0 (for panels with sealings B-s2, d0)	
120	120					12.8	0.18	B-s1, d0 (for panels with sealings B-s2, d0)	

1) 0,6 mm thickness required for facings with ribbed profiling in III colour group and for facings with flat profiling in II or III colour group.

2) thickness 0,5 mm required for facings in flat profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation				
Thickness (mm)	60	80	100	120
EI 15 (inside)	–	–	7.5 / 7.5	7.5 / 7.5
EW 30 (inside)	3.0 / –	3.0 / –	3.0 / –	3.0 / –
EI 15 (outside)	4.0 / –	4.0 / –	7.5 / 7.5	7.5 / 7.5
EW 30 (outside)	4.0 / –	4.0 / –	4.0 / –	4.0 / –

Profiling options	Linear	Microprofiled	Flat	Ribbed
External	● L	● M	● F	● R28
Internal	● L		● F	

● available

Standard external colours – Polyester

1015	3013	5005	6011	7015 (RR23)	7016 (RR288)	7035 ²⁾	9002	9006 ²⁾ (RR40)	9007 ²⁾ (RR41)	9010
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Standard internal colours – Polyester

9002	9010
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Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

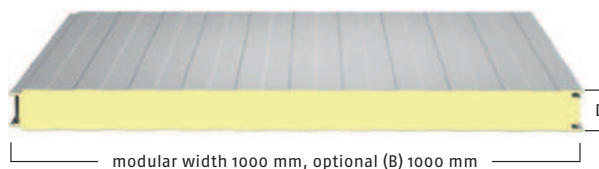
3) Colours available also in Hiarc max coating (thickness of facing 0,6 mm).

All properties are declared in accordance with EN 14509 and related standards.

Sandwich panel for external
and internal walls, ceilings

SP2B E-PIR E

- This product, made with the use of advanced production processes, offers optimal performance of the designed solution.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties enable the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



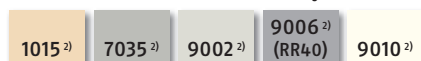
Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
	Standard mm	Optional (B) mm	External mm	Internal mm					
80	1100	1000	0.5	0.4 or 0.5	18.5	11.0	0.27	B-s2, d0	≥24
100						11.8	0.22		

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation		
Thickness (mm)	80	100
EI 15	–	7,5 / –

Profiling options	Linear	Micro profiled
External	● L25, L	● M
Internal	● L25	

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL are available only on special request, following additional arrangements.

1) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

2) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

All properties are declared in accordance with EN 14509 and related standards.

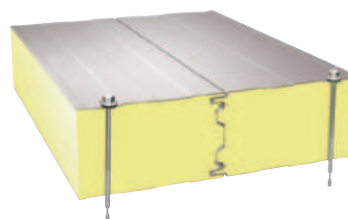
Sandwich panel for external and internal walls, ceilings and cold stores

SP2E E-PIR E

- This product, made with the use of advanced production processes, offers optimal performance of the designed solution.
- Low U-value and proper joint design together with wide thickness range make this sandwich panel an ideal solution for cold storage buildings.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties enable the decrease of panel thickness, which transfers directly to lower



transportation and assembly costs, as well as significant savings of building's life cycle costs.



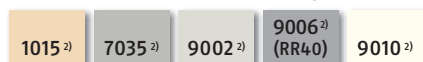
Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
	Standard mm	Optional (B) mm	External mm	Internal mm					
120	1100	1000	0.5	0.4 or 0.5	18.5	13.4	0.18	B-s2, d0	≥ 24

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation	
Thickness (mm)	120
EI 15	7.5 / -
EI 30	4.0 / -
EW 30	4.0 / -

Profiling options	Linear	Micro profiled
External	● L25, L	● M
Internal	● L25	

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facings



Other colours acc. to RAL are available only on special request, following additional arrangements.

1) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

2) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

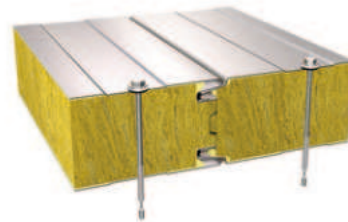
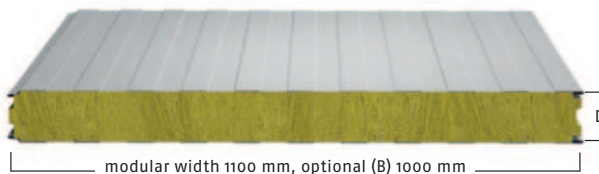
For cold-storage and refrigerator applications only light colours (1015, 7035, 9002 and 9010) are recommended.

All properties are declared in accordance with EN 14509 and related standards.

Sandwich panel for internal walls

SPB WEI

- It is a perfect solution for most buildings and structures, combining high quality with very good technical properties.
- The filling consisting of non-combustible and environmentally friendly soft mineral wool with low thermal conductivity coefficient ensures very good thermal insulation of this panel. Properly milled core increases air-tightness and provides high sound insulation.



Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
	Standard mm	Optional (B) mm	External mm	Internal mm					
80	1100	1000	0.5	0.5	12.0	18.5	0.54	A2-s1, d0	≥ 29
100						17.7	0.41		
120						19.5	0.32		
140						21.3	0.28		
150						22.2	0.26		
160						23.1	0.24		
170						24.0	0.23		
180						24.9	0.22		

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation								
Thickness (mm)	80	100	120	140	150	160	170	180
EI 30	-	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60	-	-	6.0 / 6.0	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5

Profiling options	Linear
External	● L
Internal	● L

● available

Standard external colours – Polyester

9002	9010
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Standard internal colours – Polyester

9002	9010
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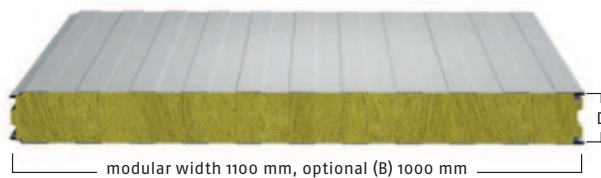
Other colours acc. to RAL are available only on special request, following additional arrangements.

All properties are declared in accordance with EN 14509 and related standards.

Sandwich panel for internal walls

SPB WEFI

- It is a perfect solution for most buildings and structures, combining high quality with very good technical properties.
- The panel's excellent quality ensures very good fire resistance properties, thus increasing fire safety of buildings.
- The filling consisting of non-combustible and environmentally friendly soft mineral wool with low thermal conductivity coefficient ensures very good thermal insulation of this panel. Properly milled core increases air-tightness and provides high sound insulation.



Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
	Standard mm	Optional (B) mm	External mm	Internal mm					
150	1100	1000	0.5	0.5	12.0	22.2	0.26	A2-s1, d0	≥ 29
160						23.1	0.24		
170						24.0	0.23		
180						24.9	0.22		

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation				
Thickness (mm)	150	160	170	180
EI 30	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 90	7.5 / 4.0	7.5 / 4.0	7.5 / 4.0	7.5 / 4.0
EI 120	7.5 / -	7.5 / -	7.5 / -	7.5 / -

Profiling options	Linear
External	●
Internal	●

● available

Standard external colours – Polyester

9002	9010
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Standard internal colours – Polyester

9002	9010
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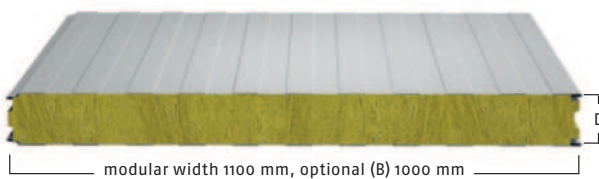
Other colours acc. to RAL are available only on special request, following additional arrangements.

All properties are declared in accordance with EN 14509 and related standards.

Sandwich panel for internal walls

SPB WI

- It is a perfect solution for most buildings and structures, combining high quality with very good technical properties.
- With the filling consisting of non-combustible and environmentally friendly hard mineral wool, this sandwich panel ensures excellent fire resistance. Properly milled core increases air-tightness and contributes to outstanding sound insulation.



Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
	Standard mm	Optional (B) mm	External mm	Internal mm					
80	1100	1000	0.5	0.5	12.0	17.8	0.51	A2-s1, d0	≥32
100						20.1	0.41		
120						22.4	0.34		
140						24.7	0.30		
150						25.9	0.28		
160						27.0	0.26		
170						28.2	0.25		
180						29.3	0.23		

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation								
Thickness (mm)	80	100	120	140	150	160	170	180
EI 30	4.0 / -	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60	-	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 90	-	-	-	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 120	-	-	-	-	-	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0

Profiling options	Linear
External	● L
Internal	● L

● available

Standard external colours – Polyester

9002

9010

Standard internal colours – Polyester

9002

9010

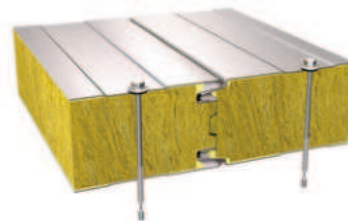
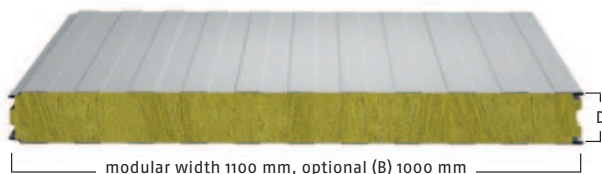
Other colours acc. to RAL are available only on special request, following additional arrangements.

All properties are declared in accordance with EN 14509 and related standards.

Sandwich panel for internal walls

SPB WFI

- Advanced technology contributing to the improvement of panel strength ensures very good mechanical properties of this sandwich panel.
- With the filling consisting of non-combustible and environmentally friendly hard mineral wool, this sandwich panel provides excellent fire resistance. Properly milled core increases air-tightness and contributes to outstanding sound insulation.



Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
	Standard mm	Optional (B) mm	External mm	Internal mm					
120	1100	1000	0.5	0.5	12.0	22.4	0.36	A2-s1, d0	≥ 32
140						24.7	0.31		
150						25.9	0.29		
160						27.0	0.27		
170						28.2	0.26		
180						29.3	0.24		

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation						
Thickness (mm)	120	140	150	160	170	180
EI 60	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 90	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 120	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0	7.5 / 6.0
EI 180	–	–	4.0 / –	6.0 / –	6.0 / –	7.5 / –

Profiling options	Linear
External	● L
Internal	● L

● available

Standard external colours – Polyester

9002

9010

Standard internal colours – Polyester

9002

9010

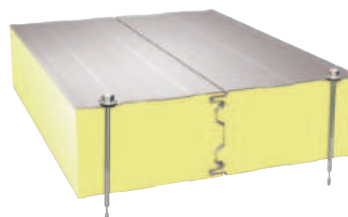
Other colours acc. to RAL are available only on special request, following additional arrangements.

All properties are declared in accordance with EN 14509 and related standards

Sandwich panel for external and internal walls, ceilings and cold stores

SP2E E-PIR

- Low U-value and proper joint design together with wide thickness range make this sandwich panel an ideal solution for cold storage buildings.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties enable the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
	Standard mm	Optional (B) mm	External mm	Internal mm					
120	1100	1000	0.5 or 0.6 ¹⁾	0.5 or 0.4 ²⁾	18.5	13.4	0.18	B-s2, d0	≥24
140						14.3	0.16		
160						15.2	0.14		
180						16.0	0.12		
200						16.8	0.11		

1) 0,6 mm thickness required for facings with ribbed profiling in III colour group and for facings with flat profiling in II or III colour group.

2) thickness 0,4 mm available for SP2E120E-PIR panel with internal facing in linear profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation					
Thickness (mm)	120	140	160	180	200
EI 15	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 30	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0
EW 30	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0

Profiling options	Linear**	Micro profiled**	Flat	Ribbed
Standard modular width 1100 mm				
External	● L, L25	● M	● F	● R28, R275, R550
Internal	● L, L25		● F	

● available

** This profiling available also for modular width 1000

Profiling L25 is available for sandwich panels in thickness 120, 140 and 160 mm.

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL are available only on special request, following additional arrangements. There is a possibility of light waviness of a panel surface with flat profiling. Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

3) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

4) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

5) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

For cold-storage and refrigerator applications only light colours (1015, 7035, 9002 and 9010) are recommended.

All properties are declared in accordance

with EN 14509 and related standards.

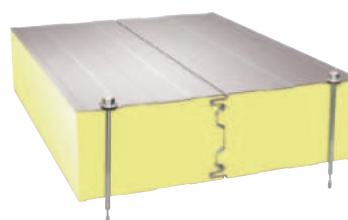
Sandwich panel for external and internal walls, ceilings and cold stores

SP2E E-PIR S

- Low U-value and proper joint design together with wide thickness range make this sandwich panel an ideal solution for cold storage buildings.
- Innovative technology increasing strength parameters of the panel provides for load-bearing capacity up to 40% higher comparing to standard solutions.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties enable the decrease of panel thickness, which transfers directly to lower



transportation and assembly costs, as well as significant savings of building's life cycle costs.



Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m²	U value W/m²K	Reaction to fire	Sound insulation R _w dB
	Standard mm	Optional (B) mm	External mm	Internal mm					
120	1100	1000	0.5 or 0.6	0.5 or 0.4 ¹⁾	18.5	13.4	0.18	B-s2, d0	≥24
140		–				14.3	0.16		
160						15.2	0.14		

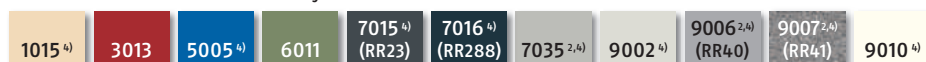
¹⁾ thickness 0,4 mm available for SP2E120E-PIRS panel with internal facing in linear profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation			
Thickness (mm)	120	140	160
EI 15	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 30	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0
EW 30	4.0 / 4.0	4.0 / 4.0	4.0 / 4.0

Profiling options	Linear	Micro profiled
External	● L25, L	● M
Internal	● L25	

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL are available only on special request, following additional arrangements.

Guidelines for the application of sandwich panels in dark colours (III group of colours) are available on page 7.

²⁾ Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm)

³⁾ FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

⁴⁾ Colours available also for sandwich panels in optional modular width (B) 1000 mm.

For cold-storage and refrigerator applications only light colours (1015, 7035, 9002 and 9010) are recommended.

All properties are declared in accordance with EN 14509 and related standards.

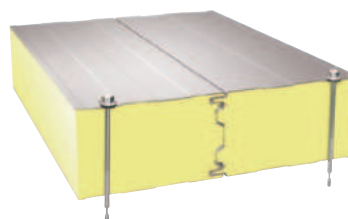
Sandwich panel for external and internal walls, ceilings and cold stores

SP2E X-PIR

- Low U-value and proper joint design together with wide thickness range make this sandwich panel an ideal solution for cold storage buildings.
- The panel's excellent quality ensures very good fire resistance properties, thus increasing fire safety of buildings.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties allow for the decrease of panel thickness, which transfers directly to lower



transportation and assembly costs, as well as significant savings of building's life cycle costs.



Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
	Standard mm	Optional (B) mm	External mm	Internal mm					
120	1100	1000	0.5 or 0.6 ¹⁾	0.5 or 0.4 ²⁾	18.5	13.8	0.18	B-s1, d0	≥24
140						14.7	0.16		
160						15.5	0.14		
180						16.4	0.12		
200						17.3	0.11		

1) 0.6 mm thickness for facings in ribbed profiling in III colour group and for facings with flat profiling in II or III colour group.

2) thickness 0,4 mm available for SP2E120X-PIR panel with internal facing in linear profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation					
Thickness (mm)	120	140	160	180	200
EI 15	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 15 (stainless steel)	7.5 / -	7.5 / -	7.5 / -	7.5 / -	7.5 / -
EI 30	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 60	-	-	-	-	6.0 / -

Profiling options	Linear	Micro profiled	Flat	Ribbed
Standard modular width 1100 mm				
External	● L, L25	● M	● F	● R28, R275, R550*
Internal	● L, L25		● F	

● available

* for modular width 1000 mm also R28 and R500 profiling available

Profiling L25 is available for sandwich panels in thickness 120, 140 and 160 mm.

Stainless steel facings are available only in linear L profiling. Not applicable at SP2E140X-PIR sandwich panel.

Standard external colours – Polyester

1015 ⁵⁾	3013	5005 ⁵⁾	6011	7015 ⁵⁾ (RR23)	7016 ⁵⁾ (RR288)	7035 ^{3,5)}	9002 ⁵⁾	9006 ^{3,5)} (RR40)	9007 ^{3,5)} (RR41)	9010 ⁵⁾
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Standard internal colours – Polyester

9002 ⁵⁾	9010 ⁵⁾
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Optional one or both sides' facing

INOX	FoodSafe laminat ⁴⁾
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Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

3) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

4) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

5) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

For cold-storage and refrigerator applications only light colours (1015, 7035, 9002 and 9010) are recommended.

All properties are declared in accordance with EN 14509 and related standards.

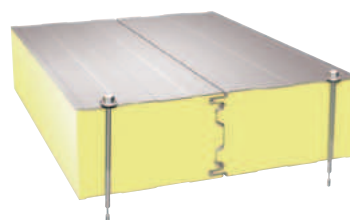
Sandwich panel for external and internal walls, ceilings and cold stores

SP2E X-PIR S

- Low U-value and proper joint design together with wide thickness range make this sandwich panel an ideal solution for cold storage buildings.
- Innovative technology increasing strength parameters of the panel provides for load-bearing capacity up to 40% higher comparing to standard solutions.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties enable the decrease of panel thickness, which transfers directly to lower



transportation and assembly costs, as well as significant savings of building's life cycle costs.



Thickness D mm	Modular width		Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Sound insulation R _w dB
	Standard mm	Optional (B) mm	External mm	Internal mm					
120	1100	1000	0.5 or 0.6	0.5 or 0.4 ¹⁾	18.5	13.8	0.18	B-s1, d0	≥24
140						14.7	0.16		
160						15.5	0.14		

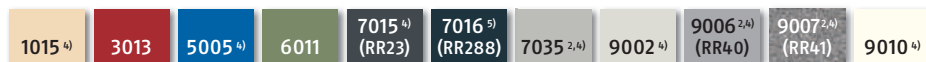
1) thickness 0,4 mm available for SP2E120X-PIRS panel with internal facing in linear profiling.

Wall fire resistance class & maximum span length (m); horizontal / vertical orientation			
Thickness (mm)	120	140	160
EI 15	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EI 30	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5
EW 30	7.5 / 7.5	7.5 / 7.5	7.5 / 7.5

Profiling options	Linear	Micro profiled
External	● L, L25	● M
Internal	● L25	

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Optional one or both sides' facing



Other colours acc. to RAL available only on special order, following additional arrangements.

There is possible some light waviness of panel surface at flat profiling.

Guidelines for application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

2) Colours available also in standard modular width 1100 mm in Hiarc max coating (thickness of facing 0,6 mm).

3) FoodSafe laminate is available only for panels in standard modular width 1100 mm in thickness of facing 0,5 mm.

Guidelines for application of FoodSafe laminate are available on page 6.

4) Colours available also for sandwich panels in optional modular width (B) 1000 mm.

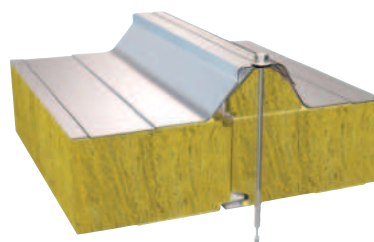
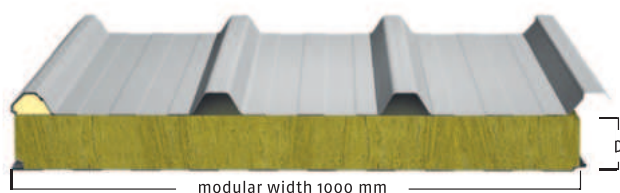
For cold-storage and refrigerator applications only light colours (1015, 7035, 9002 and 9010) are recommended.

All properties are declared in accordance with EN 14509 and related standards.

Sandwich panel for roofs

SPC W

- It is a perfect solution for roof construction, combining high quality with very good technical properties.
- With the filling consisting of non-combustible and environmentally friendly hard mineral wool, this sandwich panel ensures excellent fire resistance. Properly milled core increases air-tightness and contributes to outstanding sound insulation.



Thickness d/D mm	Modular width mm	Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Resistance to external fire	Sound insulation R _w dB
		External mm	Internal mm						
140/100	1000	0.6	0.5	12.0	22.0	0.40	A2-s1, d0	B _{roof}	34
190/150					27.6	0.27			

Fire resistance class of roof sandwich panel at maximum bending moment in span / at the support not greater than (kNm/m); snow load 0,2xS:		
Thickness (mm)	140/100	190/140
REI 60	0.090 / -0.160	0.074 / -0.132
RE 180	0.090 / -0.160	0.074 / -0.132

Profiling options	Trapezoidal	Linear	Flat
External	● T		
Internal		● L	● F

● available

Standard external colours – Polyester



Standard internal colours – Polyester



Other colours acc. to RAL are available only on special request, following additional arrangements. There is a possibility of light waviness of a panel surface with flat profiling.

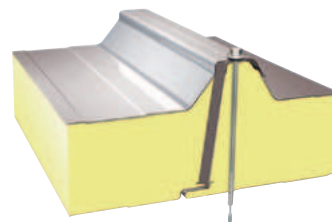
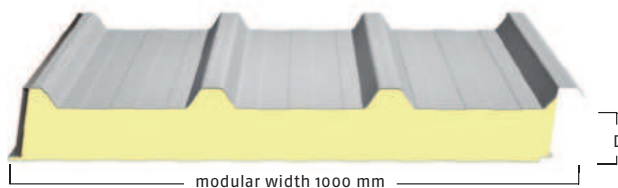
Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

All properties are declared in accordance with EN 14509 and related standards.

Sandwich panel for roofs

SP2C E-PIR

- It is a perfect solution for roofs, combining high quality with very good technical properties.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties enable the decrease of panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Thickness d/D mm	Modular width mm	Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Resistance to external fire	Sound insulation R _w dB
		External mm	Internal mm						
80/40	1000	0.5 or 0.6	0.4 or 0.5 or 0.6 ¹⁾	18.5	9.5	0.50	B-s2, d0	B _{roof}	≥24
100/60					10.3	0.34			
120/80					11.0	0.26			
140/100					11.7	0.21			
160/120					12.5	0.18			
210/170					14.3	0.13			

1) 0,6 mm thickness required at sandwich panel in 210/170 mm thickness in flat profiling.

Fire resistance class of roof sandwich panel at maximum bending moment in span / at the support not greater than (kNm/m); snow load 0,2xS:						
Thickness (mm)	80/40	100/60	120/80	140/100	160/120	210/170
REI 15	0,152 / -0,270	0,147 / -0,261	0,142 / -0,253	0,138 / -0,245	0,133 / -0,236	0,122 / -0,216
REI 20	-	-	0,203 / -0,360	0,198 / -0,352	0,193 / -0,343	0,182 / -0,323
RE 30	-	-	0,203 / -0,360	0,198 / -0,352	0,193 / -0,343	0,182 / -0,323
RE 60	0,152 / -0,270	0,147 / -0,261	0,142 / -0,253	0,138 / -0,245	0,133 / -0,236	0,122 / -0,216

Profiling options	Trapezoidal	Linear	Flat
External	● T		
Internal		● L	● F

● available

Standard external colours – Polyester

1015	3013	6011	7015 (RR23)	7016 (RR288)	7035	9002	9006 ²⁾ (RR40)	9010
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Standard internal colours – Polyester

9002	9010
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Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

2) Colours available also in Hiarc max coating (thickness of facing 0,6 mm).

All properties are declared in accordance with EN 14509 and related standards.

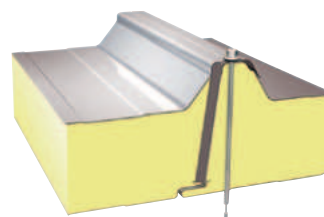
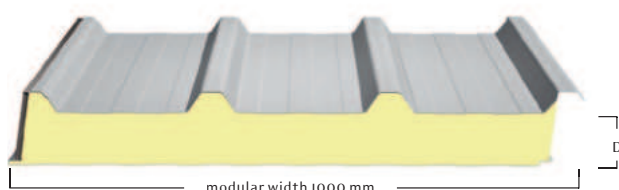
Sandwich panel for roofs

SP2C X-PIR

- It is a perfect solution for roofs, combining high quality with very good technical properties.
- The panel's excellent quality ensures very good fire resistance properties, thus increasing fire safety of buildings.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties allow for the decrease of panel thickness, which transfers directly to lower



transportation and assembly costs, as well as significant savings of building's life cycle costs.



Thickness d/D mm	Modular width mm	Thickness of facings		Maximum length m	Weight kg/m ²	U value W/m ² K	Reaction to fire	Resistance to external fire	Sound insulation R _w dB
		External mm	Internal mm						
80/40	1000	0.5 or 0.6	0.4 or 0.5 or 0.6 ¹⁾	18.5	9.7	0.50	B-s2, d0	B _{roof}	≥24
100/60					10.5	0.34	B-s2, d0		
120/80					11.3	0.26	B-s2, d0		
140/100					12.1	0.21	B-s1, d0 (for panels with sealings B-s2, d0)		
160/120					12.9	0.18	B-s1, d0 (for panels with sealings B-s2, d0)		
210/170					14.9	0.13	B-s1, d0 (for panels with sealings B-s2, d0)		

1) 0,6 mm thickness required at sandwich panel in 210/170 mm thickness in flat profiling.

Fire resistance class of roof sandwich panel at maximum bending moment in span / at the support not greater than (kNm/m); snow load 0,2xS:						
Thickness (mm)	80/40	100/60	120/80	140/100	160/120	210/170
REI 20	0,090 / -0,160	0,088 / -0,156	0,086 / -0,153	0,084 / -0,149	0,082 / -0,145	0,077 / -0,136
REI 30	-	-	0,090 / -0,160	0,088 / -0,157	0,086 / -0,153	0,081 / -0,144
RE 30	0,090 / -0,160	0,088 / -0,156	0,086 / -0,153	0,084 / -0,149	0,082 / -0,145	0,077 / -0,136
RE 60	-	-	0,090 / -0,160	0,088 / -0,157	0,086 / -0,153	0,081 / -0,144

Profiling options	Trapezoidal	Linear	Flat
External	● T		
Internal		● L	● F

● available

Standard external colours – Polyester

1015	3013	6011	7015 (RR23)	7016 (RR288)	7035	9002	9006 ²⁾ (RR40)	9010
------	------	------	----------------	-----------------	------	------	------------------------------	------

Standard internal colours – Polyester

9002	9010
------	------

Other colours acc. to RAL are available only on special request, following additional arrangements.

There is a possibility of light waviness of a panel surface with flat profiling.

Guidelines for the application of sandwich panels in dark colours (III group of colours) and panels with flat facings are available on page 7.

2) Colours available also in Hiarc max coating (thickness of facing 0,6 mm).

All properties are declared in accordance with EN 14509 and related standards.

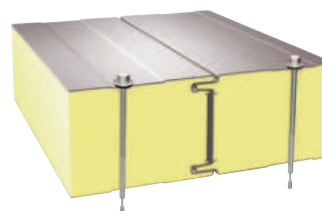
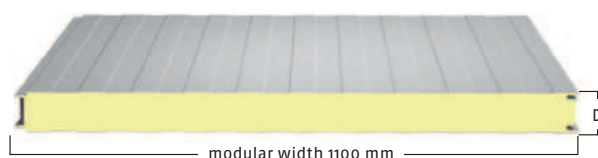
Sandwich panel for external and internal walls, ceilings and agricultural applications

SP2B E-PIR AgriPro

- With its balanced properties this product is a perfect solution for all agricultural buildings.
- Dedicated special Csafe™ coating ensures high performance and easy maintenance.
- Comparing to standard panel coatings, Csafe™ coating features high resistance to scratches, corrosion and UV radiation. It also offers higher resistance to dirt.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties enable the decrease of



panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Thickness D mm	Modular width mm	Thickness of facings		Maximum length m	Weight kg/m³	U value W/m²K	Reaction to fire	Sound insulation R _w dB
		External mm	Internal mm					
40	1100	0.4	0.4	12.0	8.2	0.56	B-s2, d0	≥24
60					8.8	0.36		
80					9.5	0.27		
100					10.2	0.22		

Profiling options	Linear	Micro profiled
External	● L	● M
Internal	● L	

● available

Standard external colours – Polyester

9002

Optional coating – Csafe

Csafe
9002

Standard internal colours – Polyester

9002

Other colours acc. to RAL are available only on special request, following additional arrangements.

All properties are declared in accordance with EN 14509 and related standards.

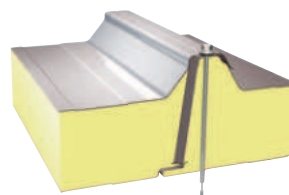
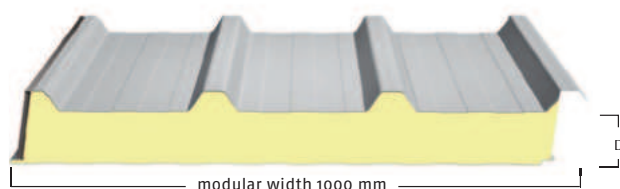
Sandwich panel for roofs, agricultural applications

SP2C E-PIR AgriPro

- With its balanced properties this product is a perfect solution for all agricultural buildings.
- Dedicated special Csafe™ coating ensures high performance and easy maintenance.
- Comparing to standard panel coatings, Csafe™ coating features high resistance to scratches, corrosion and UV radiation. It also offers higher resistance to dirt.
- The core of this sandwich panel is made of rigid, HCFC-free, self-extinguishing and sustainable polyisocyanurate foam (PIR). Its excellent thermal insulation properties enable the decrease of



panel thickness, which transfers directly to lower transportation and assembly costs, as well as significant savings of building's life cycle costs.



Thickness D mm	Modular width mm	Thickness of facings		Maximum length m	Weight kg/m³	U value W/m²K	Reaction to fire	Resistance to external fire	Sound insulation value R _w dB
		External mm	Internal mm						
80/40	1100	0.4	0.4	13.5	8.6	0.50	B-s2, d0	B _{roof}	≥24
100/60					9.3	0.34			
120/80					9.9	0.26			
140/100					10.6	0.21			

Profiling options	Linear	Trapezoidal
External		● T
Internal	● L	

● available

Standard external colours – Polyester

9002

Optional coating – Csafe

Csafe
9002

Other colours acc. to RAL are available only on special request, following additional arrangements.

Standard internal colours – Polyester

9002

All properties are declared in accordance with EN 14509 and related standards.

Available profilings

R150



R200



R600



R28



R250, R275



R500, R550



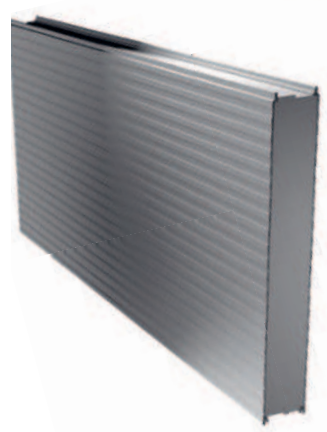
L50



L Linear



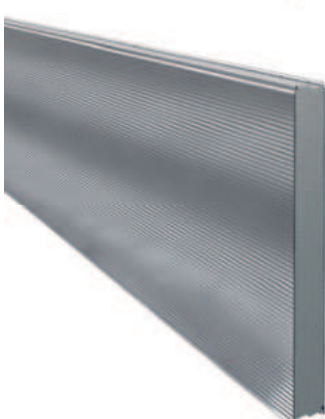
L25 Linear



F Flat



M, M15 Micro profiled



Coatings for sandwich panels

GreenCoat Hiarc matt

Matt surface coating recommended for normal exterior use. It is highly resistant against UV radiation and dirt pick-up. Hiarc matt is recommended for uses where modern distinguished appearance is required and excellent colour durability and dirt pick-up resistance are valued. Metallic colours are available for end uses where metallic appearance is required.

GreenCoat Hiarc

Coating recommended for normal exterior use. It is highly resistant against UV radiation and dirt pick-up. Hiarc is recommended for uses where excellent colour durability and dirt pick-up resistance are valued. Metallic colours are available for end uses where metallic appearance is required.

GreenCoat Hiarc Max

Hiarc max coating was developed for facades used in particularly demanding conditions. This coating features excellent resistance to corrosion, UV radiation and is easy to clean. Hiarc max is available in a limited number of colours.

Polyester

Polyester coating is suited for use both in interiors and exteriors, through its properties are better suited for interior use. Polyester is recommended applications where high weather resistance is not necessary.

FoodSafe laminate (PVC)

Food safe laminated surfaces for the food industry provide a ready-made solution for a variety of applications, particularly for processing and storing facilities. Food safe laminates have a very good resistance to forming and low-gloss smooth surface with high wear resistance. They are also easy to clean.

Due to its sensitivity to UV radiation, this coating is not recommended for use on external surfaces or on internal surfaces exposed to sun radiation.

Csafe

Csafe coating is developed primarily for interior use, but can also be used on external faces. Coating has very good resistance against chemicals, scratching, dirt and corrosion – and is therefore excellent solution for agricultural construction.

Stainless steel

Some of our panels are also available with stainless steel facings. Stainless steel facings are suitable for the most aggressive environment (even at C5-M* corrosion class according to the standard EN ISO 12944-2: 2018).

Type of coating	Recommended corrosion classes
Ruukki Hiarc® matt , Ruukki Hiarc®	C1 – C3
Ruukki Hiarc® max	C1 – C4
Polyester	C1 – C3
Foodsafe laminate	C1 – C4
Ruukki Csafe coating	C1 – C4
Stainless steel	C1 – C5-M

Coating properties	GreenCoat Hiarc		GreenCoat Hiarc max	Polyester	Csafe	FoodSafe laminate (PVC)
	Regular	Matt				
Nominal coating thickness (µm)	27	27	40	25	40	120
Coating structure	smooth	structured	smooth	smooth	lightly structured	smooth
Gloss (Gardner 60°)	35	4	35	35	40	11
Highest operating temperature (°C)	110	110	110	90	100	60
Minimum inner bending radius	1 x sheet thickness	1 x sheet thickness	1 x sheet thickness	3 x sheet thickness	1 x sheet thickness	1 x sheet thickness
UV radiation resistance	R _{uv} 4	R _{uv} 4	R _{uv} 4	R _{uv} 2	R _{uv} 4	–
Corrosion resistance (acc. to EN 10169+A1: 2012)	RC4	RC4	RC5	RC3	RC4	–
Corrosion resistance (acc. to EN ISO 12944-2: 2018)	C1 – C3	C1 – C3	C1 – C4*	C1 – C3	C1 – C4*	C1 – C4*
Scratch resistance	30N	30N	35N	20N	35N	55N
Stain resistance	excellent	excellent	excellent	satisfactory	very good	–

* In case of corrosion environment over C3/RC3 class we recommend to contact the technical support team for more information.

Guidelines for sandwich panels with flat facings and dark colours

The division to colour groups

Colour groups presented in a table below refer to the influence of thermal loads on structures made of sandwich panels. During the exposition to sun radiation, the steel facings become heated, especially in case of dark colours.

Due to a high temperature difference (Δt) between external and internal facing, some thermal stresses occur and affect the behavior of a sandwich panel fixed to the structure. It might cause waviness of the panel surface or, at extreme cases, the damage of a sandwich panel at the middle support.

EN 14509: 2013 standard, describing the requirements for sandwich panels, divides colours of facings into 3 groups: very light, light and dark colours. Value of the temperature of external facing is established based on a group of colours to which a given colour belongs and is equal to +55 °C for very light colours, + 65 °C for light colours and +80 °C for dark colours.

Colours	
I colour group – very light colours	RAL: 1015, 1016, 1018, 6019, 7035, 9001, 9002, 9010
II colour group – light colours	RAL: 1002, 1003, 1004, 1014, 1017, 1019, 1021, 1023, 1035, 2000, 2003, 2004, 2008, 2009, 5012, 5018, 5024, 6018, 6021, 6033, 7000, 7037, 7040, 9006, 9022, RR: 20, 21, 24, 30, 40
III colour group – dark colours	RAL: 3000, 3002, 3003, 3005, 3011, 3013, 5002, 5005, 5009, 5010, 5011, 5022, 6000, 6003, 6005, 6011, 6020, 6029, 7015, 7016, 7022, 7024, 8016, 8017, 8023, 9005, 9007, RR: 22, 23, 29, 34, 35, 36, 41, 288

Guidelines for sandwich panels with dark coloured facings

The external facing of a sandwich panel in dark colours (III colour group), due to highly increased thermal load comparing to the light colours, might be subjected to deformation or distortions. A designer should consider it during the design process and prevent any damages with a solution based on the following 3 conditions:

1. To choose a fixing method and a static system according to the guidelines provided by TrayPan calculation software.
2. To reduce a maximum length of sandwich panels.
3. To consider the temperature during the installation of sandwich panels.

Guidelines for sandwich panels with flat facings

Sandwich panels with flat facings should be installed only as single span structures, after static calculations are made with the use of TrayPan calculation software.

Application of sandwich panels with flat facings in other arrangements might cause disadvantageous aesthetical impression, i.e. waviness of the facing surface. It can be a temporary effect, visible only at some specified conditions, e.g. at very high insolation of a wall or a roof structure. All above-mentioned situations do not worsen the load capacity of a sandwich panel, but might lead to claims referring to the reduced aesthetics of a whole façade.

Metallic colours

Due to the complexity of technological processes, producers of organic coated sheets do not guarantee compatibility of colour tones in following deliveries. Particularly in the sheets of metallic colours RAL 9006 and RAL 9007. In order to avoid problems with differences with tone and to maintain colour uniformity of sandwich panel's claddings, the Buyer shall agree in writing, before signing the contract of sale with the Seller, which part of the order refers to the deliveries for one object. In the case of agreement, the Seller agrees to perform the contract with one batch of material. Otherwise, Ruukki is not responsible for any differences in the shade of colour. In case of doubts, please contact the sales department.

Accessories

Ruukki panels are offered with completed set of accessories:

- standard and special flashings;
- fasteners;
- seals;
- other.

Our accessories ensure rapid assembly, fastening reliability, joint tightness and aesthetic improvement of external and internal wall surface construction, as well as roofs of construction works of various sizes and destinations.

Standard flashings

Their shape, steel thickness and coating are specially adapted to suit our building solutions.

Special flashings

These are tailor-made according to a customer sketch and information on dimensions, steel thickness, coating and angles.

Fasteners

We offer wide range of panel fasteners for various frame structures: Steel, concrete and wood. Fasteners are available both in stainless steel and coated carbon steel. Our flashing screws are also available with coloured screw heads to match the flashing colour.

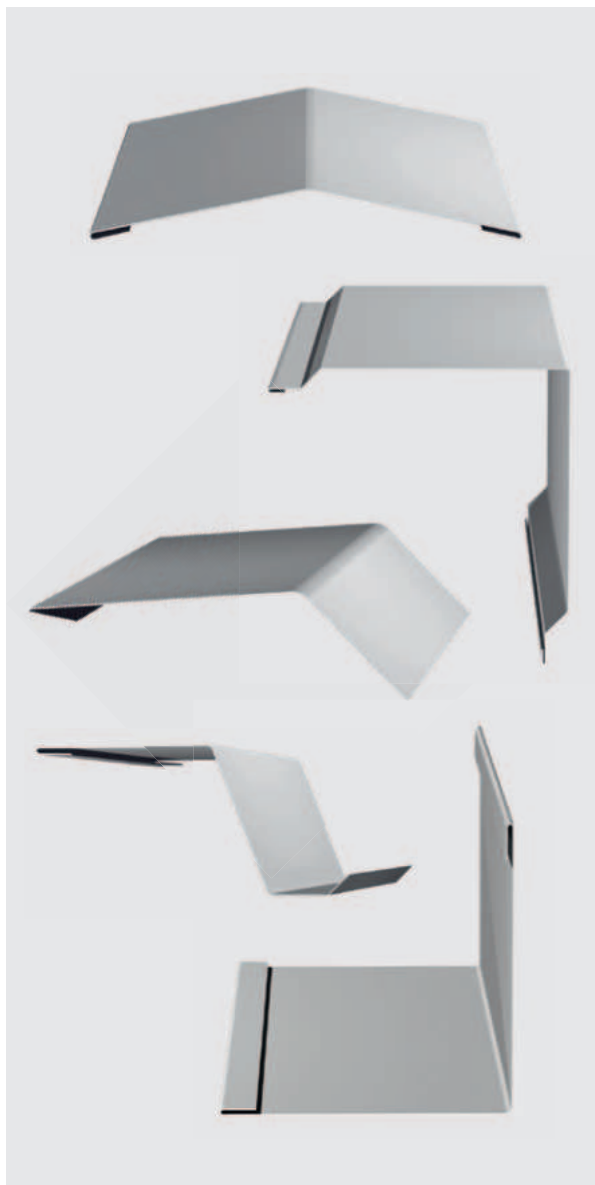
Sealants

We offer all needed sealants needed for building a weather & airtight envelope for your building with sandwich panels.

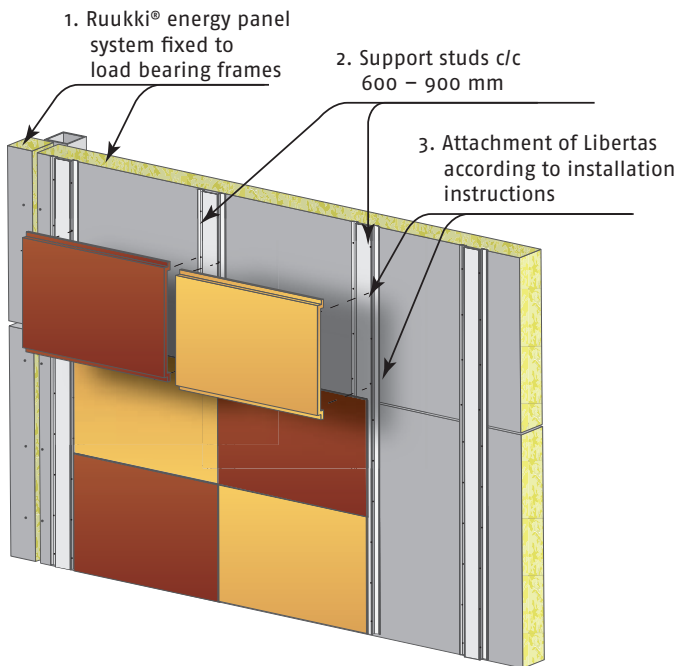
Other

- Installation tools (lifting tools etc)
- Windows and skylights
- Purlins

More detailed information about available accessories can be found from separate accessory product description.



Ruukki® façade systems



Ruukki Forma™ with Libertas cassettes

Ruukki Forma™

Ruukki Forma™ is a complete facade system combining Ruukki's facade cladding products with the Ruukki® energy panel system.

Ruukki Forma™ provides a wide range of aesthetic shape, material and colour options.

The Ruukki Forma™ all-inclusive delivery includes all needed components for a complete wall installation. Quick installation of the base structure, the Ruukki® energy panel system, provides a quick weather cover for the building, while the cladding material can be installed later.

Ruukki Forma™ portfolio

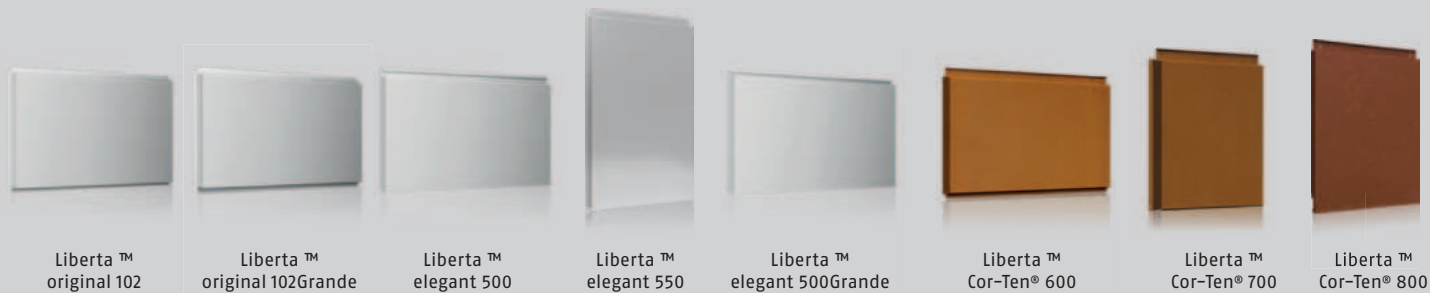
- **SHAPES** – a way to express rhythm and flow, from elegant to eye-catching and modern, a wide selection of shapes from Ruukki Design Palette offers a spectrum of possibilities (Liberta cassettes, Cladding lamellas, Design profiles).
- **MATERIALS** – a fabric resistant to time and weather. Ruukki Design Palette offers a collection of materials when accomplishing creative goals (steel, aluminum, Cor-Ten)
- **COLOURS** – Façade colours have the power of expression. Ruukki Design Palette has a comprehensive selection of colours always making a unique impression, signifying the individual vision.

Ruukki claddings products offer a wide range of shapes, materials and colours for the visual design of the façade. Ruukki cladding product portfolio includes:

- Libertas cassettes,
- Cladding lamellas,
- Design profiles.



Ruukki Forma™ – Liberta



Swimming Hall in Valmiera,
Latvia

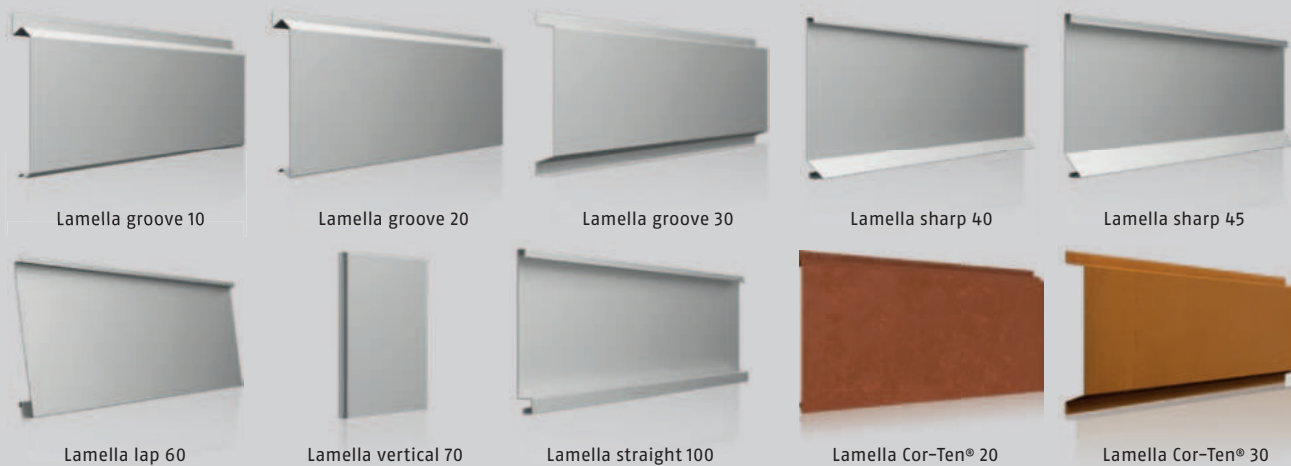


Globol,
Poland



Eeden Shopping center in Tartu,
Estonia

Ruukki Forma™ – Lamella



UPS office building in Kaunas,
Lithuania

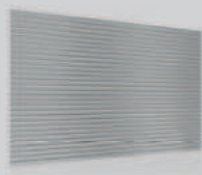


Tartu Ülikooli in Kliinikum,
Estonia

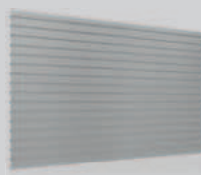


Rhenus logistics

Ruukki Forma™ – Design profiles



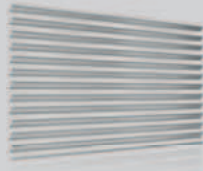
Design Venice™ S10



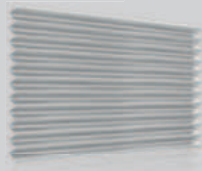
Design Oulu™ A T10



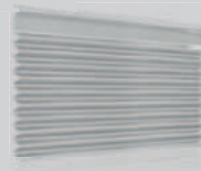
Design Cor-Ten® S7



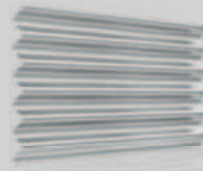
Design Tokyo™ S18



Design Rome™ S34



Design Rome™ S S34



Design Paris™ S55



Gardest Home and Garden Center in Tartu,
Estonia



Eeden Shopping center in Tartu,
Estonia

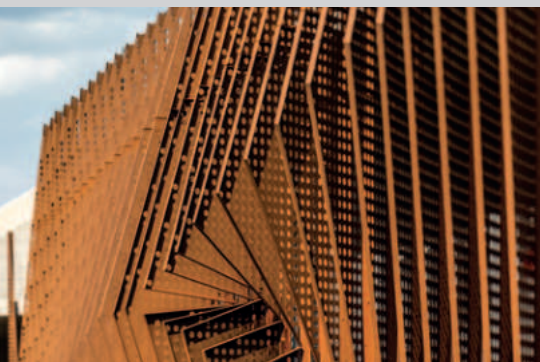


Autoverkkokauppa in Vantaa,
Finland

Bespoke architectural facades

On large projects, which are outside the possibilities of our standard products, the cladding solution can be designed in co-operation to meet the needs of that specific project. Our technical experts will work together with the project architect to ensure architectonic, technical and economic feasibility from early design to building use. The final solution will be just as reliable as tried and tested product solutions.

Over the years we have designed and produced various special cladding products, such as curved and triangular Liberta rainscreen panels. Please contact our experienced specialists for more information.



Tallinn airport parking house,
Estonia



Toom-Kuninga apartment building in Tallinn,
Estonia



Estonia Film Museum in Tallinn,
Estonia

RUUKKI® EMOTION – playing with dimensions

Ruukki® emotion is a complete facade system that consists of perforated cladding products and support structures, with an integrated back lighting system.

The integrated system allows you to concentrate on architecture while we support you with:

- Technical details
- One expert to talk to
- Predictable pricing from early design to final procurement
- Solutions for all buildings, from large projects to smaller ones.



Eeden Shopping center in Tartu,
Estonia



Damme shopping mall in Riga,
Latvia



Zerva building in Skövde,
Sweden

Ruukki® solar system for walls

All buildings manifest the values of their users – Make your sustainable values proudly visible by combining our energy panel system with Liberta™ Solar system to for clean renewable energy.

- With well-detailed appearances supporting the values which your building stands for.
- Easy project realization for new and existing buildings: freedom of design, complete delivery and easy installation
- Also available as Ruukki Forma™ (see previous page)

Liberta™ Solar – impressive facade with green touch

Liberta™ Solar is a rainscreen panel which provides solid glass surface with no disruptive flashings and minimum seams. Perfect for buildings such as shopping centres and offices. Liberta™ Solar is both architecturally high-standard as well as a sustainable energy solution for new buildings and renovations.



Ruukki Primo

Interested in big flat surface?

Brand new **oversized Ruukki Primo**
rainscreen cladding system



Ruukki's Design Toolbox

– software and modelling tools

To meet the needs of architects and designers we prepared the tools and software to design objects in cladding system made of sandwich panels. All essential information can be found on our website www.ruukki.com and at Toolbox <http://software.ruukki.com>.

At your disposal:

Savings calculator,

that allows you to check how much you can save your heating costs by using Ruukki energy panels.

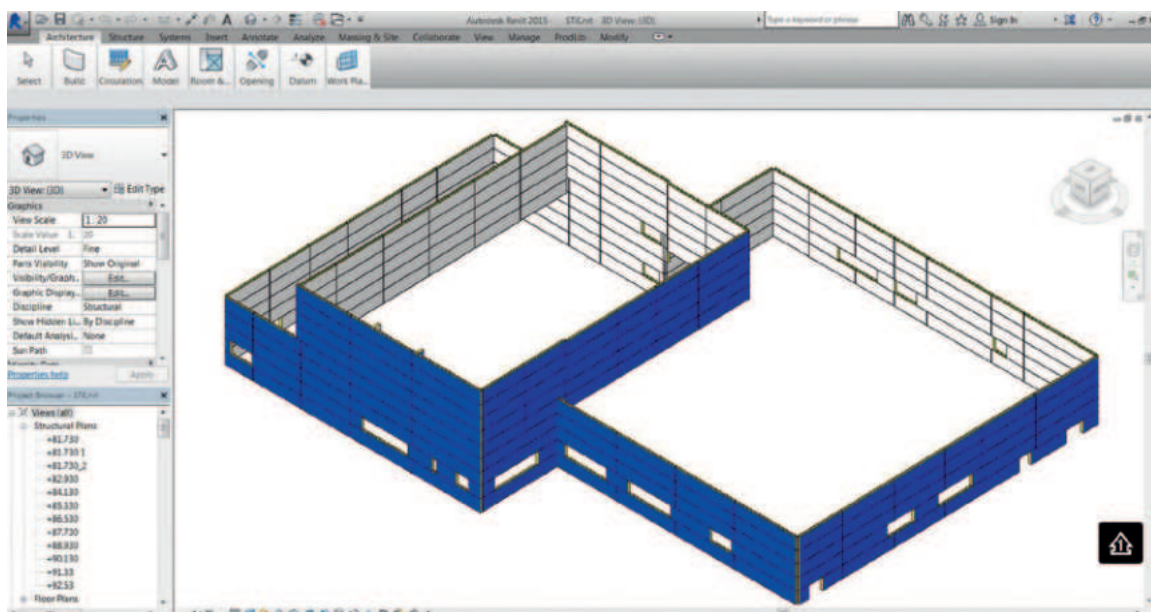
Detail drawings in dwg and pdf formats

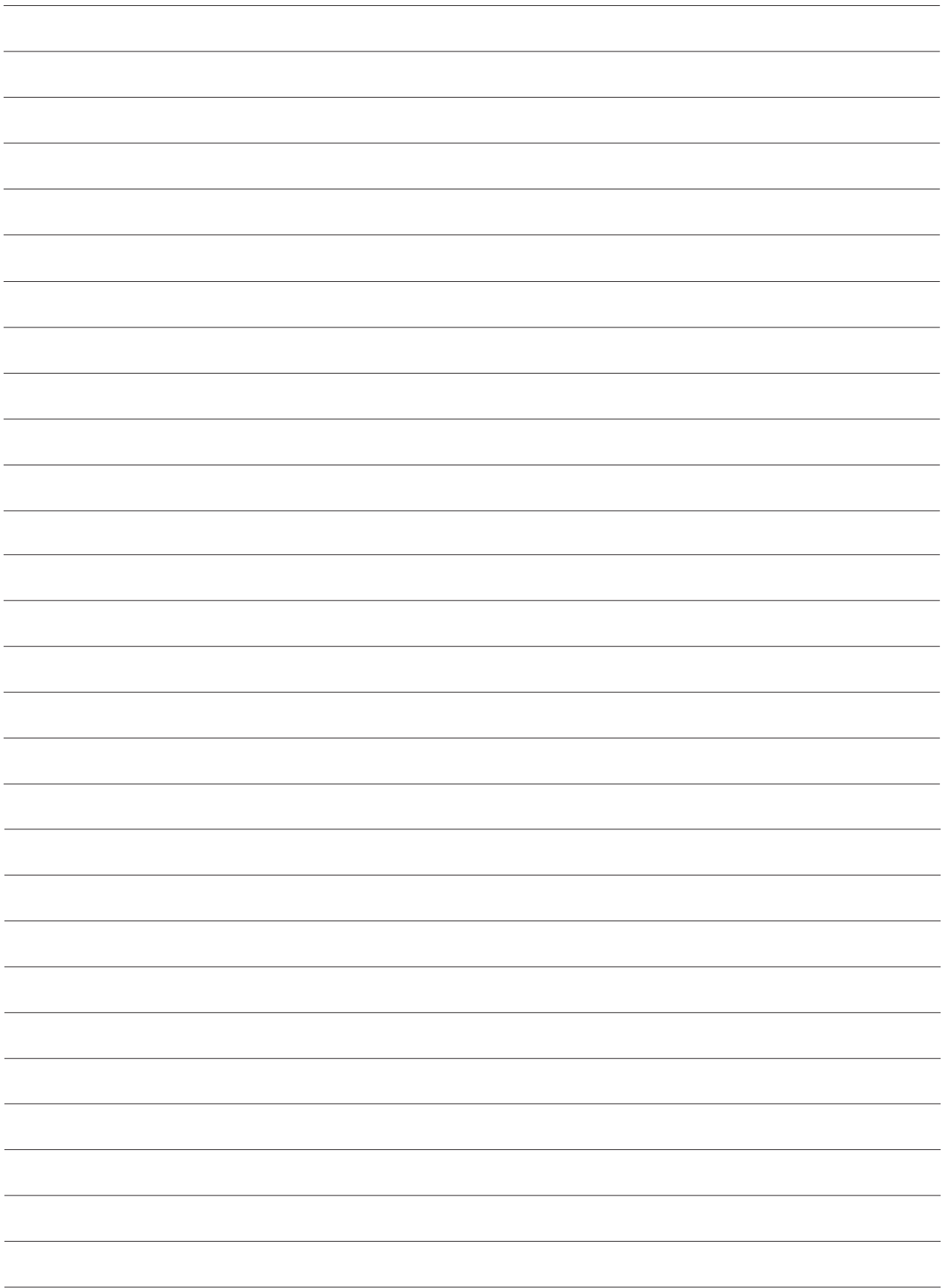
Ruukki's Design Toolbox,

containing the following software:

- TrayPan is a user-friendly application for optimized selection of Ruukki sandwich panels.
- The tool allows you to enter any static structure interacting with the sandwich panel loads (dead, live, thermal, wind or snow (for roofs) loads). The software also allows the selection of sandwich panels depending on the other parameters such as U-factor, fire resistance and acoustic parameters.
- TrayPan contains two user interfaces:
 - optimization tool for quick and easy pre-selection,
 - designer version for detailed structural analysis.

Ready modelled panels for Revit environment / BIM objects:





**We work with investors who see opportunities.
We exist for designers and builders to fulfill their dreams.
We are here for those who bring buildings and homes to life.**

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www.ruukki.com

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