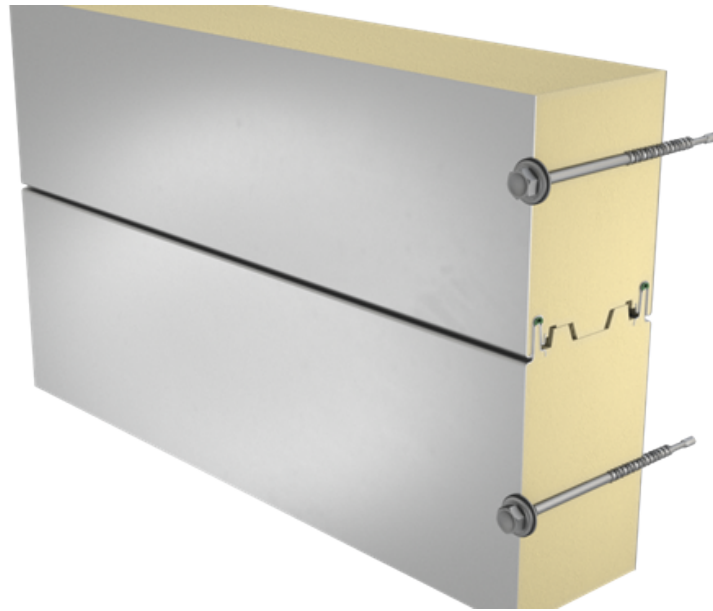


# SANDWICH PANEL SP2E X-PIRS ENERGY (FM APPROVED)



Sandwich panel **SP2E X-PIRS Energy** is available in thicknesses 120 - 160 mm.

It 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.

SP2E X-PIRS Energy sandwich panel is available also with FM Approved certificate granted by the world-biggest insurance company FM Global. The global certificate received based on 4880 and 4881 standards confirms that a building's envelope made of these sandwich panels from Ruukki ensures the highest safety level in case of fire or hurricane.



**Application:**

- External walls (standard fix)

The information on our website is accurate to the best of our knowledge and understanding. Although every effort has been made to ensure accuracy, the company cannot accept any responsibility for any direct or indirect damages resulting from possible errors or incorrect application of the information of this publication. We reserve the right to make changes.

# PROPERTIES

<b>Model name</b>	Sandwich panel SP2E X-PIRS Energy (FM Approved)
<b>Standard module width</b>	1100 mm
<b>Optional module width (B)</b>	1000 (D = 120 mm)
<b>Minimum length</b>	2000 mm
<b>Maximum Length</b>	18500 mm
<b>External facing thickness</b>	0.50 mm
<b>Internal facing thickness</b>	0.40 mm
<b>Air Tightness n50 (1/h)</b>	q50 = 1,0 m <sup>3</sup> /(m <sup>2</sup> *h) for Ruukki Energy system, entire building

## PROPERTIES BY PANEL THICKNESS

<b>Thickness D (mm)</b>	<b>120</b>	<b>140</b>	<b>160</b>
Weight (kg/m <sup>2</sup> )	13.1	13.9	14.6
U-value (W/m <sup>2</sup> K)	0.18	0.16	0.14
Sound insulation Rw (dB)	25	25	25
Reaction to fire	B-s1, d0	B-s1, d0	B-s1, d0
<b>Wall fire resistance values &amp; max span horizontal / vertical orientation (m):</b>			
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

Detailed information regarding the application of fire resistance ratings can be obtained from Ruukki's sales representatives.

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

### Changes to sandwich panel fire resistance standards (wall applications)

# COATINGS AND COLOURS

## MATERIALS

Facing	Coating	Corrosivity category	UV resistance	Colours
External	GreenCoat HIARC MAX	C4	Ruv4	RAL7035, RAL9006 (RR40), RAL9007 (RR41)
External	Polyester	C3	Ruv2-3	RAL1015, RAL3013, RAL5005, RAL6011, RAL7015 (RR23), RAL7016 (RR288), RAL7035, RAL9002, RAL9006, RAL9007, RAL9010
Internal	Polyester	C3	-	RAL9002, RAL9010
Internal	PVC laminate *	C4	-	White

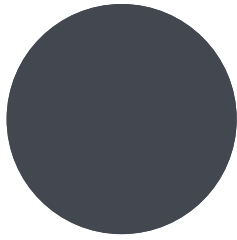
*\*) optional material*

*UV resistance describes how well the coating is able to keep its original colour and gloss levels in accordance with EN10169. The higher the class, the better the resistance.*

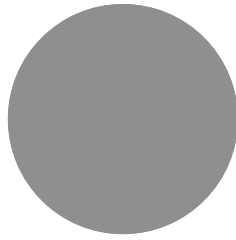
*Corrosivity categories describe the outdoor climate conditions in accordance with EN12944. The higher the category, the more corrosive environment.*

*Read more about UV-resistance and corrosivity categories.*

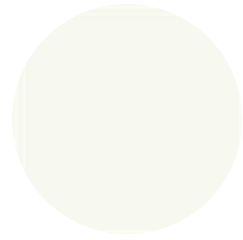
## COLOURS



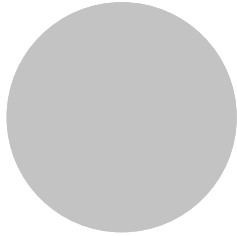
RAL 7015 SLATE GREY



RAL9007 GREY ALUMINIUM



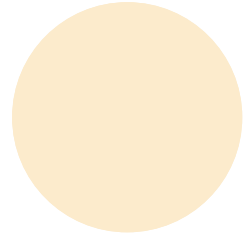
RAL9010 WHITE



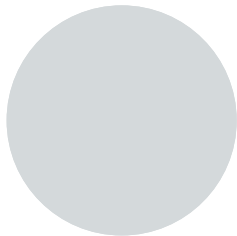
RAL9006 WHITE ALUMINIUM



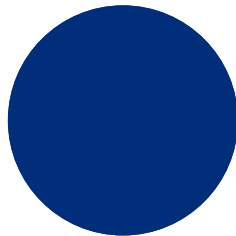
RAL9002 GREY WHITE



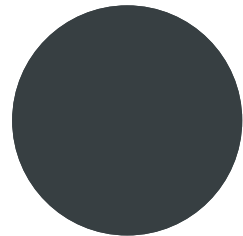
RAL1015 LIGHT IVORY



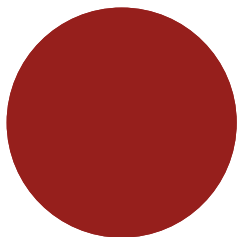
RAL7035 LIGHT GREY



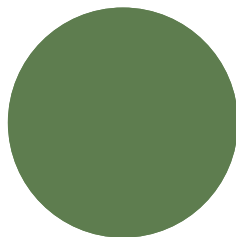
RAL5005 SIGNAL BLUE



RAL7016 ANTHRACITE GREY



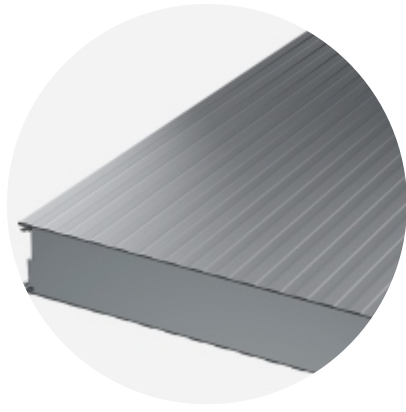
RAL3013 TOMATO RED



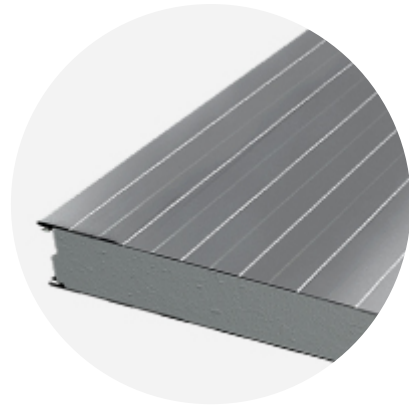
RAL6011 RESEDA GREEN

For external facings of 1000 mm module width only the following colors are available: RAL1015, RAL5005, RAL7015, RAL7035, RAL9002, RAL9006, RAL9007, RAL9010.

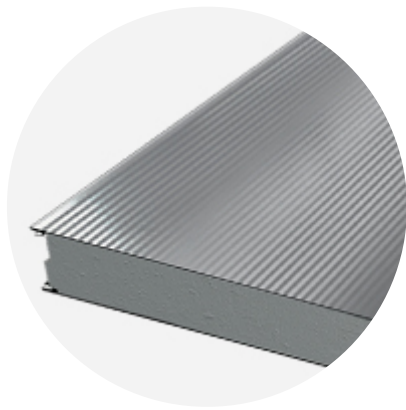
## PROFILE OPTIONS



LINEAR L25



LINEAR L



MICRO M

Modular width	Facing	Profile options
1100mm	External	L, L25, M
	Internal	L25
1000mm	External	L, L25, M
	Internal	L25

## DESIGN TOOLS

To make both architectural and structural design work easier, with accurate product information in 3D form, we offer a selection of CAD / BIM -objects and software tools, which can be downloaded from the Software Toolbox portal.

## READY MODELLED BIM OBJECTS

[Download objects for ArchiCAD](#)

[Download objects for Revit](#)

## SOFTWARE TOOL TRAYPAN FOR CHOOSING THE OPTIMAL PANEL TYPE

User-friendly TrayPan software takes into account load, temperature, span, U-value, fire resistance and acoustics.

TrayPan contains two user interfaces:

- Optimisation tool for quick and easy pre-selection
- Designer version for detailed structural analysis.

Download Traypan

## DETAIL DRAWING (.DWG)



**05 MAY, 2016**

Ruukki-Detail-drawings-SP2E-PIR\_dwg\_en  
ZIP, 3.78 MB



**05 MAY, 2016**

Ruukki-Detail\_drawings\_SP2B\_SP2C\_SP2D\_PIR\_en  
ZIP, 1.06 MB



**05 MAY, 2016**

Ruukki-Detail\_drawings\_SPB\_SPC\_SP2D\_W\_en  
ZIP, 875.03 KB

## LOAD & SPAN TABLES FOR DIMENSIONING PANELS AGAINST LOADS



**05 MAY, 2016**

Ruukki-sandwich-panels-span-tables-agripro-panels  
PDF, 387.17 KB



**05 MAY, 2016**

Ruukki-load-tables-WE-ENG3  
PDF, 295.41 KB



**05 MAY, 2016**

Ruukki-load-tables-W-ENG3  
PDF, 315.97 KB



**05 MAY, 2016**

Ruukki-load-tables-PIR-ENG5  
PDF, 385.87 KB

## ACCESSORIES

Accessories for sandwich panels include flashings, fasteners, gaskets, and sealing flanges.

These accessories ensure fast assembly, fastening reliability, joint tightness, and aesthetic improvement. They are suitable for external and internal wall surface construction, as well as roofs - for construction works of various sizes at any destination.



**05 JUL, 2016**



Ruukki accessories for sandwich panels 09.07.2015B  
PDF, 3.46 MB

## INSTRUCTIONS

### ASSEMBLY INSTRUCTIONS

Assembly instructions document includes information about:

- Packing
- Transportation and unloading
- Storing
- Assembling



**14 JUL, 2016**

Ruukki-INOX-guidelines-for-PIR-sandwich-panels  
PDF, 315.45 KB



**05 MAY, 2016**

Ruukki-Sandwich-panels-General\_instructions\_for\_cold\_storage\_facilities  
PDF, 1.58 MB



**05 MAY, 2016**

Ruukki-Assembly-instruction-for-sandwich-panels-CEE  
PDF, 1.10 MB

### MAINTENANCE INSTRUCTIONS

Maintenance instructions document contains information about:

- Washing
- Painting



**06 MAY, 2016**

Ruukki colour coated steel - Maintenance instructions  
PDF, 600.37 KB



**06 MAY, 2016**

Ruukki powder coated facade claddings - Maintenance instructions  
PDF, 602.18 KB

### FACADE CLADDING INSTRUCTIONS

Ruukki Forma design instructions explain how to design façade cladding systems on top of Ruukki sandwich panels.



**01 JUN, 2016**

Ruukki Forma design instructions  
PDF, 1012.64 KB



# CERTIFICATES & APPROVALS

## DECLARATION OF PERFORMANCE



**13 JAN, 2020**

Declaration of Performance 54/MW/OBO - Oborniki mineral wool cored panels (W, WF, WS)  
PDF, 175.13 KB



**13 JAN, 2020**

Declaration of Performance 53/MW/OBO - Oborniki mineral wool cored panels (WEE, WE, WEF)  
PDF, 336.94 KB



**06 JUN, 2019**

Declaration of Performance 29/E-PIR/OBO - Oborniki panels with PIR core (E-PIR, AgriPro)  
PDF, 1.10 MB



**06 JUN, 2019**

Declaration of Performance 30/X-PIR/OBO - Oborniki panels with PIR core (X-PIR)  
PDF, 903.75 KB



**07 DEC, 2017**

Declaration of Performance 37/X-PIR/OBO - SP2B X-PIR and SP2E X-PIR sandwich panels in stainless steel facing  
PDF, 86.79 KB

## ENVIRONMENTAL PRODUCT DECLARATION



**05 MAY, 2016**

Ruukki-Light-weight-sandwich-element-system  
PDF, 5.97 MB