Sandwich panel **SPA F Energy** is available in thicknesses 150 - 230 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. The panel's excellent quality ensures **very good fire resistance properties**, thus increasing fire safety of buildings. This panel type is **intruder resistant** in accordance with SSF 1047, classes 2 & 3 (see Certificates & approvals).

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**.

**Application:**

- External walls (standard fix)
### PROPERTIES

**Model name**
Sandwich panel SPA F energy

**Standard module width**
1200 mm

**Minimum length**
2000 mm

**Maximum Length**
13500 mm

**External facing thickness**
0.60 mm

**Internal facing thickness**
0.50 mm

**Air Tightness n50 (1/h)**
q50 (m3/h, m2): 1.0 n50 (1/h): 0.3

### PROPERTIES BY PANEL THICKNESS

<table>
<thead>
<tr>
<th>Thickness D (mm)</th>
<th>150</th>
<th>200</th>
<th>230</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (kg/m²)</td>
<td>28.2</td>
<td>33.5</td>
<td>37.4</td>
</tr>
<tr>
<td>U-value (W/m²K)</td>
<td>0.29</td>
<td>0.22</td>
<td>0.19</td>
</tr>
<tr>
<td>Sound insulation Rw (dB)</td>
<td>31</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Reaction to fire</td>
<td>A2-s1, d0</td>
<td>A2-s1, d0</td>
<td>A2-s1, d0</td>
</tr>
</tbody>
</table>

Wall fire resistance values & max span horizontal / vertical orientation (m):

<table>
<thead>
<tr>
<th>EI</th>
<th>Horizontal / Vertical</th>
<th>9.0 / 8.8</th>
<th>9.0 / 8.8</th>
<th>9.0 / 8.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td></td>
<td>7.5 / 8.8</td>
<td>7.5 / 8.8</td>
<td>7.5 / 8.8</td>
</tr>
<tr>
<td>120</td>
<td></td>
<td>7.5 / 7.5</td>
<td>7.5 / 7.5</td>
<td>7.5 / 7.5</td>
</tr>
<tr>
<td>180</td>
<td></td>
<td>7.5 / 7.5</td>
<td>7.5 / 7.5</td>
<td>7.5 / 7.5</td>
</tr>
<tr>
<td>240</td>
<td></td>
<td>6.0 / 6.0</td>
<td>6.0 / 6.0</td>
<td>6.0 / 6.0</td>
</tr>
</tbody>
</table>

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

## Materials

<table>
<thead>
<tr>
<th>Facing</th>
<th>Coating</th>
<th>Corrosivity category</th>
<th>UV resistance</th>
<th>Colours</th>
</tr>
</thead>
<tbody>
<tr>
<td>External</td>
<td>Energy coating</td>
<td>C3</td>
<td>Ruv4</td>
<td>RR23, RR41</td>
</tr>
<tr>
<td>External</td>
<td>GreenCoat HIARC MAX</td>
<td>C4</td>
<td>Ruv4</td>
<td>RR20, RR21, RR22, RR23, RR29, RR33, RR35, RR40, RR41, RR45</td>
</tr>
<tr>
<td>External</td>
<td>GreenCoat HIARC</td>
<td>C3</td>
<td>Ruv4</td>
<td>RR20, RR21, RR22, RR23, RR29, RR33, RR35, RR40, RR41, RR45</td>
</tr>
<tr>
<td>External</td>
<td>GreenCoat HIARC matt</td>
<td>C3</td>
<td>Ruv4</td>
<td>RR33, RR40, RR41</td>
</tr>
<tr>
<td>External</td>
<td>Polyester</td>
<td>C3</td>
<td>Ruv2-3</td>
<td>RR20, RR21, RR23, RR946</td>
</tr>
<tr>
<td>Internal</td>
<td>Polyester</td>
<td>C3</td>
<td>-</td>
<td>RR20</td>
</tr>
<tr>
<td>Internal</td>
<td>Foodsafe laminate *</td>
<td>C4</td>
<td>-</td>
<td>White</td>
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<tr>
<td>Internal</td>
<td>Stainless steel</td>
<td>C4</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*) 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
PROFILE OPTIONS
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-SPA-ENERGY_external_walls_details_EN
  DWG, 2.38 MB

- 05 MAY, 2016
  SPA_compartment_details_wall_en_16052016
  DWG, 464.41 KB

- 05 MAY, 2016
  SPA_compartment_details_ceiling_en_16052016
  DWG, 291.63 KB

- 05 MAY, 2016
  SPA external wall details EN
  DWG, 2.46 MB

DETAIL DRAWING (.PDF)

- 05 MAY, 2016
  Ruukki-SPA-ENERGY_external_walls_details_EN
  PDF, 1.54 MB

- 05 MAY, 2016
  SPA external wall details EN
  PDF, 1.53 MB

- 05 MAY, 2016
  SPA_compartment_details_wall_en_16052016
  PDF, 203.33 KB

- 05 MAY, 2016
  SPA_compartment_details_ceiling_en_16052016
  PDF, 135.57 KB

LOAD & SPAN TABLES FOR DIMENSIONING PANELS AGAINST LOADS
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 projects of various sizes at any destination.

INSTRUCTIONS

ASSEMBLY INSTRUCTIONS

Assembly instructions document includes information about:

- Packing
- Transportation and unloading
- Storing
- Assembling

MAINTENANCE INSTRUCTIONS

Maintenance instructions document contains information about:

- Washing
- Painting
PRODUCT DESCRIPTIONS

Product description includes information about:

- Panel structure
- Structural dimensioning
- Panel packaging
- Windows and corner panels
- Panel fastening

FACADE CLADDING INSTRUCTIONS

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

CERTIFICATES & APPROVALS

DECLARATION OF PERFORMANCE

16 OCT, 2017
Declaration of Performance 32/MW/ALA - Alajärvi panels with MW core (SPA panels with stainless steel facings)
PDF, 338.45 KB

05 MAY, 2016
Declaration of Performance 1/MW/ALA - Alajärvi panels with MW core (SPA panels)
PDF, 418.75 KB

ENVIROMENTAL PRODUCT DECLARATION
INTRUDER RESISTANCE CERTIFICATES

24 SEP, 2019
Certificate on Burglary Protection Class2-3 SPA F, S, E LIFE and E LIFE FORMA
PDF, 129.58 KB

25 JUL, 2016
Intruder resistance walls Class2 SPA F and SPA S
PDF, 11.97 KB

25 JUL, 2016
Intruder resistance walls Class3 SPA F
PDF, 12.58 KB

25 JUL, 2016
Intruder resistance walls Class2 SPA E LIFE and SPA E LIFE FORMA
PDF, 12.52 KB