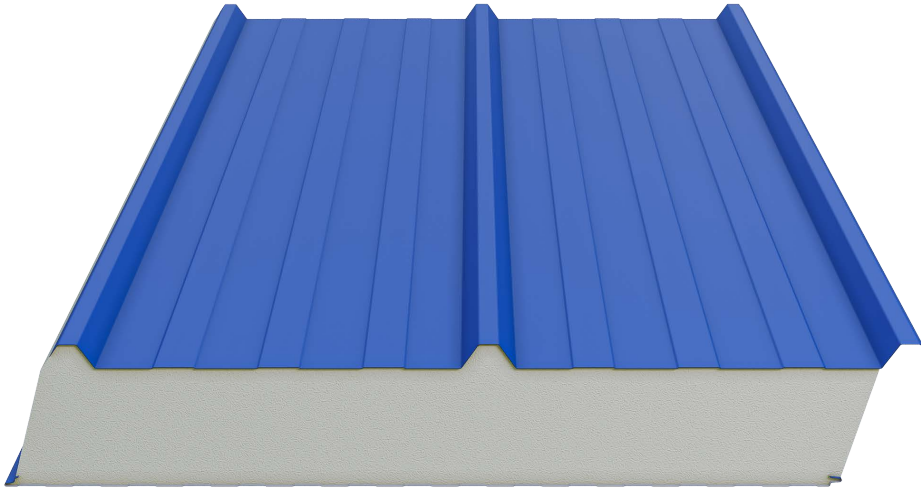


## N3 - UK Roof and Wall Panel



### Product Information

It has 3 ribs which is lateral connected sandwich panel. Its biggest advantage is that it enables fast assembly thanks to lateral connected panel connection. This product enables wide gaps to be passed safely with its indented form. It has a joint detail with angle.

### Production Plant

UK

### Product Application

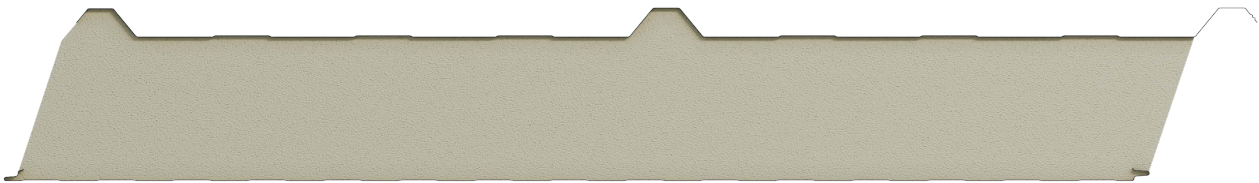
- Industrial Buildings
- Military Buildings
- Public Buildings
- Agricultural Buildings
- Sports Facilities
- Construction Site Buildings
- Silos
- Hypermarkets
- Shopping Centers
- Storehouse Halls
- Administrative Buildings

and all other concrete structures with steel or prefabricated load bearing systems.

## Performance Advantages

It has a joint detail with angle.  
 Fast and trouble-free installation saves both time and labor.  
 It has high performance in sound insulation as well as heat insulation.  
 Thanks to its colorful surface, there is no need for additional coatings such as plaster or paint.  
 There are surface paint (Polyester, PvdF, Plastisol, PVC) options suitable for the place of use.  
 Color selection can be made from the RAL catalogue.  
 It does not deteriorate, rot or mold over time.

## Cross Section



Thickness: 40-50-60-80-100-120-140-160-180-200 mm

<b>Modular Width</b>	1,000 mm
<b>Minimum Length</b>	2 meters
<b>Maximum Length</b>	Depends on transport conditions.

## SmartCore – PIR Properties

<b>Density (EN 1602)</b>	PIR: 40 (± 2) kg/m <sup>3</sup> & SmartCore: 41 (± 2) kg/m <sup>3</sup>
<b>Thickness</b>	40-50-60-80-100-120-140-160-180-200 mm
<b>Thermal Conductivity (EN 13165)</b>	PIR: 0.022-0.024 W/mK & SmartCore: 0.018-0.019 W/mK
<b>Reaction to Fire (13501)</b>	PIR: B-s2,d0 & SmartCore: B-s2,d0

## Thermal Conductivity Table for SmartCore Panels

Panel Thickness	U Thermal Conductivity (W/m <sup>2</sup> K)	R Thermal Resistance (m <sup>2</sup> K/W)	R Thermal Resistance (ft <sup>2</sup> °F h/Btu)
40 mm	0,43	2,350	13,343
50 mm	0,35	2,880	16,353
60 mm	0,29	3,400	19,305
80 mm	0,22	4,460	25,324
100 mm	0,18	5,510	31,286
120 mm	0,15	6,560	37,248
140 mm	0,13	7,610	43,210
160 mm	0,12	8,670	49,228
180 mm	0,10	9,720	55,190
200 mm	0,09	10,770	61,152

According to EN 14509

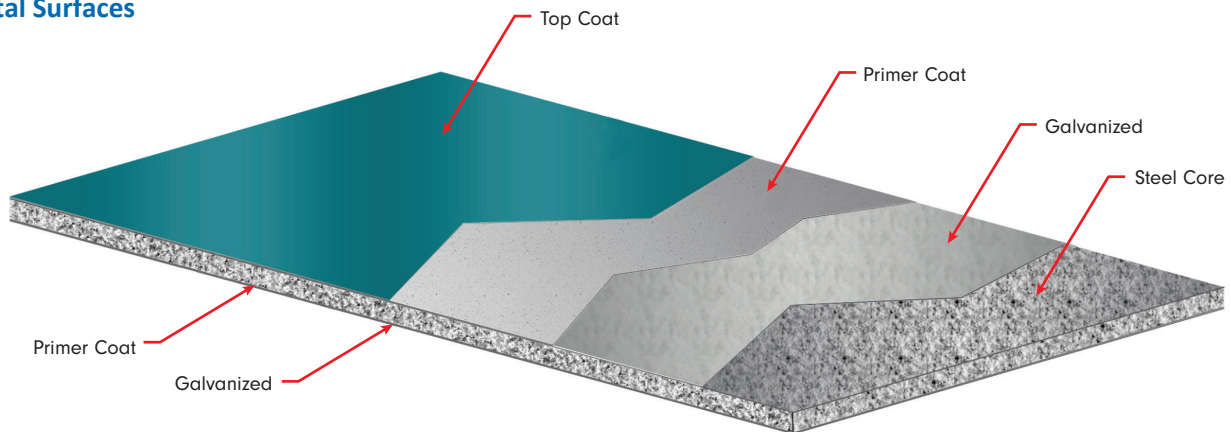
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### Thermal Conductivity Table for PIR Panels

Panel Thickness	U Thermal Conductivity (W/m <sup>2</sup> K)	R Thermal Resistance (m <sup>2</sup> K/W)	R Thermal Resistance (ft <sup>2</sup> °F h/Btu)
40 mm	0,51	1,970	11,186
50 mm	0,42	2,400	13,627
60 mm	0,35	2,840	16,126
80 mm	0,27	3,710	21,065
100 mm	0,22	4,570	25,948
120 mm	0,18	5,440	30,888
140 mm	0,16	6,310	35,828
160 mm	0,14	7,180	40,768
180 mm	0,12	8,050	45,708
200 mm	0,11	8,920	50,648

According to EN 14509

### Metal Surfaces



### Prepainted Galvanized Steel Surface

<b>Metal Type</b>	h 8 0
<b>External Facing Thickness</b>	50
<b>Internal Facing Thickness</b>	40
<b>Thickness Tolerance (EN 10143)</b>	V
<b>Steel Quality (EN 10327)</b>	oGrade (S220GD+Z, S250GD+Z, S280GD+Z, S320GD+Z, S350GD+Z)
<b>Paint Type</b>	h h 7 h

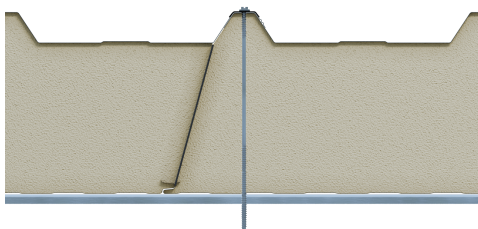
### Tolerance Values

Panel Length	Panel Thickness	Panel Cover Width	Rectangularity
If L <= 3,000 mm ± 5 mm; If L > 3,000 mm ± 10 mm	D ≤ 100 mm ± 2 mm	± 2 mm for all profiles	s ≤ 0.6% of the nominal cover thickness (w). / (Width x 0.006)


### Standard Package


Thickness (mm)	40	50	60	80	100	120	140	160	180	200
<b>Quantity</b>	20	18	14	10	9	8	7	6	5	4


### Joint Details



**NOVA 4 (PIR) PANEL FOR ROOF LOAD SPAN TABLE**

Core Thickness (mm)	Load Type kN/m <sup>2</sup>	Span length (L) (m)															
		1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
SINGLE SPAN 	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	2.39	1.85	1.50	1.25	1.06	0.93	0.81	0.71	0.62	0.49	0.37	-	-	-	-	-
	Suction (kN/m <sup>2</sup> )	-3.84	-3.06	-2.36	-1.75	-1.35	-1.08	-0.90	-0.76	-0.65	-0.56	-0.50	-	-	-	-	-
	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	2.67	2.11	1.74	1.48	1.27	1.11	0.99	0.88	0.78	0.70	0.58	0.45	0.35	0.27	-	-
	Suction (kN/m <sup>2</sup> )	-4.50	-3.67	-2.74	-2.04	-1.59	-1.27	-1.05	-0.89	-0.76	-0.66	-0.58	-0.52	0.00	-0.42	-	-
	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	2.95	2.37	1.99	1.71	1.49	1.31	1.16	1.04	0.94	0.85	0.76	0.65	0.53	0.42	0.34	0.27
	Suction (kN/m <sup>2</sup> )	-5.19	-4.14	-3.12	-2.33	-1.82	-1.46	-1.21	-1.02	-0.88	-0.76	-0.67	-0.59	-0.53	-0.48	-0.44	-0.40
	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	3.50	2.90	2.49	2.18	1.93	1.73	1.55	1.40	1.26	1.14	1.04	0.96	0.87	0.77	0.65	0.54
	Suction (kN/m <sup>2</sup> )	-6.23	-4.85	-3.88	-2.92	-2.28	-1.84	-1.52	-1.28	-1.10	-0.96	-0.84	-0.75	-0.67	-0.60	-0.55	-0.50

Core Thickness (mm)	Load Type kN/m <sup>2</sup>	Span length (m)															
		1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
DOUBLE SPAN 	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	2.39	1.85	1.50	1.18	0.97	0.80	0.67	0.57	0.49	-	-	-	-	-	-	-
	Suction (kN/m <sup>2</sup> )	-3.50	-2.60	-2.04	-1.66	-1.35	-1.08	-0.90	-0.76	-0.65	-	-	-	-	-	-	-
	b (mm)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	2.67	2.11	1.60	1.26	1.02	0.86	0.72	0.62	0.53	0.46	-	-	-	-	-	-
	Suction (kN/m <sup>2</sup> )	-3.74	-2.81	-2.21	-1.81	-1.52	-1.27	-1.05	-0.89	-0.76	-0.66	-	-	-	-	-	-
	b (mm)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	2.95	2.21	1.68	1.33	1.08	0.91	0.77	0.66	0.57	0.50	-	-	-	-	-	-
	Suction (kN/m <sup>2</sup> )	-3.98	-3.01	-2.38	-1.96	-1.65	-1.42	-1.21	-1.02	-0.88	-0.76	-	-	-	-	-	-
	b (mm)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

Core Thickness (mm)	Load Type kN/m <sup>2</sup>	Span length (m)															
		1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
TRIPLE SPAN 	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	2.39	1.85	1.50	1.25	1.06	0.93	0.81	0.71	0.62	0.54	0.48	0.42	0.37	0.33	-	-
	Suction (kN/m <sup>2</sup> )	-3.84	-3.06	-2.36	-1.75	-1.35	-1.08	-0.90	-0.76	-0.65	-0.56	-0.50	-0.44	-0.40	-0.36	-	-
	b (mm)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	2.67	2.11	1.74	1.48	1.25	1.04	0.90	0.77	0.67	0.59	0.52	0.46	0.41	0.37	-	-
	Suction (kN/m <sup>2</sup> )	-4.32	-3.25	-2.58	-2.04	-1.59	-1.27	-1.05	-0.89	-0.76	-0.66	-0.58	-0.52	0.00	-0.42	-	-
	b (mm)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	2.95	2.37	1.99	1.61	1.31	1.10	0.95	0.82	0.71	0.62	0.55	0.49	0.44	0.40	0.36	-
	Suction (kN/m <sup>2</sup> )	-4.54	-3.43	-2.74	-2.27	-1.82	-1.46	-1.21	-1.02	-0.88	-0.76	-0.67	-0.59	-0.53	-0.48	-0.44	-
	b (mm)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

**Notes:**

- Steel thickness ext/int: 0,50/0,40mm
- Values have been calculated using the method described in EN 14509, for color group 1 (very light colors)
- Values have been calculated using the limit state method described in EN 14509: 2013. Taking imposed loads, temperature and creep into account.
- The following deflection limits have been used:  
Pressure loading L/200  
Suction loading L/200
- Design criteria Safety factors on loads: ULS 1.5 (variable) 1.35 (permanent) / SLS 1.  
Safety factors on material: Wrinkling of face: ULS 1.25 / SLS 1.1. Shear of core: ULS 1.3 / SLS 1.08.  
SLS Summer temperature: Outside 55°C / Inside 25°C.  
Winter temperature: Outside -20°C / Inside -25°C.
- In order to conduct the calculations some data from table E6 and rates originating from table E8 stipulated in a standard EN 14509 were applied.
- The loads calculated in the load-span table are unfactored loads.
- The actual wind suction resisted by the panel is dependent on the number of fasteners.
- The fastener calculation should be carried out in accordance with the appropriate standards.
- For intermediate values linear interpolation may be used.
- The allowable steelwork tolerance between bearing planes of adjacent supports have to be aligned with EN1090-2.

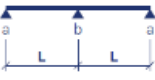
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**NOVA 4 (PIR) WALL PANEL LOAD SPAN TABLE**

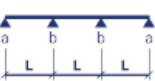
Core Thickness (mm)	Load Type kN/m <sup>2</sup>	Span length (L) (m)															
		1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
40	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	3.06	2.30	1.85	1.54	1.32	1.15	1.03	0.94	0.85	0.78	0.71	0.63	-	-	-	-
50	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	3.62	2.76	2.22	1.86	1.60	1.41	1.25	1.13	1.03	0.95	0.88	0.80	0.72	0.65	-	-
60	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	4.16	3.19	2.59	2.18	1.88	1.65	1.47	1.33	1.21	1.11	1.03	0.97	0.88	0.80	0.73	0.66
80	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	5.19	4.04	3.30	2.79	2.42	2.13	1.91	1.72	1.57	1.45	1.34	1.25	1.16	1.09	1.00	0.92
100	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	6.20	4.86	3.99	3.39	2.94	2.60	2.33	2.11	1.93	1.77	1.64	1.53	1.43	1.35	1.27	1.18
120	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	6.78	5.65	4.68	3.98	3.46	3.07	2.75	2.49	2.28	2.10	1.95	1.81	1.70	1.60	1.51	1.43
150	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	6.78	5.65	4.84	4.24	3.76	3.39	3.08	2.82	2.60	2.42	2.26	2.12	1.99	1.88	1.78	1.69
170	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	6.78	5.65	4.84	4.24	3.76	3.39	3.08	2.82	2.60	2.42	2.26	2.12	1.99	1.88	1.78	1.69



Core Thickness (mm)	Load Type kN/m <sup>2</sup>	Span length (m)															
		1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
40	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	3.06	2.30	1.85	1.54	1.32	1.15	1.03	0.94	0.85	0.78	0.71	0.63	-	-	-	-
50	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	3.62	2.76	2.22	1.79	1.48	1.26	0.91	0.55	0.32	0.18	-	-	-	-	-	-
60	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	4.12	3.07	2.40	1.94	1.61	1.37	1.12	0.75	0.46	0.28	0.16	-	-	-	-	-
80	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	4.60	3.46	2.73	2.22	1.86	1.59	1.37	1.18	0.82	0.53	0.33	0.20	-	-	-	-
100	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	5.05	3.84	3.04	2.49	2.09	1.79	1.55	1.37	1.19	0.86	0.57	0.37	0.23	-	-	-
120	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	5.47	4.19	3.34	2.74	2.31	1.98	1.72	1.51	1.35	1.16	0.86	0.59	0.39	0.26	-	-
150	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	5.73	4.68	3.75	3.10	2.61	2.24	1.96	1.73	1.54	1.38	1.26	1.26	0.70	0.49	0.34	0.23
170	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	5.73	4.78	4.01	3.32	2.81	2.41	2.11	1.86	1.66	1.49	1.35	1.22	0.95	0.68	0.49	0.34



Core Thickness (mm)	Load Type kN/m <sup>2</sup>	Span length (m)															
		1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
40	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	3.06	2.30	1.85	1.54	1.32	1.15	0.93	0.67	0.49	0.38	0.29	0.23	-	-	-	-
50	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	3.62	2.76	2.22	1.86	1.60	1.40	1.02	0.82	0.60	0.46	0.36	0.28	0.23	0.19	-	-
60	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	4.16	3.19	2.59	2.18	1.88	1.65	1.27	0.99	0.73	0.55	0.43	0.34	0.27	0.22	-	-
80	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	5.18	3.92	3.12	2.57	2.18	1.88	1.65	1.28	1.28	0.77	0.59	0.47	0.37	0.30	0.25	0.21
100	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	5.60	4.27	3.42	2.83	2.40	2.08	1.83	1.63	1.26	1.26	0.79	0.62	0.50	0.40	0.33	0.27
120	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	5.73	4.60	3.69	3.07	2.61	2.27	2.00	1.78	1.60	1.22	1.22	0.80	0.64	0.52	0.42	0.35
150	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	5.73	4.78	4.09	3.41	2.91	2.53	2.23	1.99	1.79	1.63	1.31	1.31	0.88	0.71	0.58	0.48
170	a (mm)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Pressure (kN/m <sup>2</sup> )	5.73	4.78	4.10	3.58	3.09	2.69	2.38	2.12	1.91	1.74	1.59	1.24	1.24	0.86	0.70	0.58



- Notes:
- Steel thickness ext/int: 0,50/0,40mm
  - Values have been calculated using the method described in EN 14509, for color group 3 (dark colors)
  - Values have been calculated using the limit state method described in EN 14509: 2013. Taking imposed loads, temperature and creep into account.
  - The following deflection limits have been used:  
Pressure loading L/100  
Suction loading L/100
  - Design criteria Safety factors on loads: ULS 1.5 (variable) 1.35 (permanent) / SLS 1.  
Safety factors on material: Wrinkling of face: ULS 1.25 / SLS  
1.1. Shear of core: ULS 1.3 / SLS 1.08.  
SLS Summer temperature: Outside 55°C / Inside 25°C,  
Winter temperature: Outside -20°C / Inside -25°C.
  - In order to conduct the calculations some data from table E6 and rates originating from table E8 stipulated in a standard EN 14509 were applied.
  - The loads calculated in the load-span table are unfactored loads.
  - The actual wind suction resisted by the panel is dependent on the number of fasteners.
  - The fastener calculation should be carried out in accordance with the appropriate standards.
  - For intermediate values linear interpolation may be used.
  - The allowable steelwork tolerance between bearing planes of adjacent supports have to be aligned with EN1090-2

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