



DECLARATION OF PERFORMANCE No. 29/E-PIR/OBO

1. Unique identification code of product type:

Sandwich panel with E-PIR polyisocyanurate core

SP2B40E-PIR SP2B60E-PIR SP2B80E-PIR SP2B100E-PIR SP2B110E-PIR SP2B120E-PIR SP2B150E-PIR	SP2E120E-PIR SP2E140E-PIR SP2E160E-PIR SP2E180E-PIR SP2E200E-PIR	SP2D60E-PIR SP2D80E-PIR SP2D100E-PIR SP2D120E-PIR
SP2B60E-PIR B SP2B80E-PIR B SP2B100E-PIR B SP2B110E-PIR B SP2B120E-PIR B SP2B150E-PIR B	SP2E120E-PIR B SP2E140E-PIR B SP2E160E-PIR B	SP2C80/40E-PIR SP2C100/60E-PIR SP2C120/80E-PIR SP2C140/100E-PIR SP2C160/120E-PIR SP2C190/150E-PIR SP2C210/170E-PIR
SP2B80E-PIR ENERGY SP2B100E-PIR ENERGY SP2B110E-PIR ENERGY SP2B120E-PIR ENERGY SP2B150E-PIR ENERGY	SP2E120E-PIR ENERGY SP2E140E-PIR ENERGY SP2E160E-PIR ENERGY SP2E180E-PIR ENERGY SP2E200E-PIR ENERGY	
SP2B80E-PIR B ENERGY SP2B100E-PIR B ENERGY SP2B110E-PIR B ENERGY SP2B120E-PIR B ENERGY SP2B150E-PIR B ENERGY	SP2E120E-PIR B ENERGY SP2E140E-PIR B ENERGY SP2E160E-PIR B ENERGY	

Sandwich panel with E-PIRE polyisocyanurate core

SP2B80E-PIRE SP2B100E-PIRE SP2B110E-PIRE SP2B120E-PIRE	SP2B80E-PIRE B SP2B100E-PIRE B SP2B110E-PIRE B SP2B120E-PIRE B
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2. Intended use: Self-supporting metal faced insulating panels for use in buildings; external walls, internal walls, ceilings and roofs.

Detailed intended use refers to the sandwich panel type – information in attachments to this declaration.

3. Manufacturer: Ruukki Polska Sp. z o.o.
ul. Jaktorowska 13, 96-300 Żyrardów, Poland
Oborniki branch
ul. Łukowska 7, 64-600 Oborniki, Poland

4. Authorized representative: not applicable

5. AVCP level: reaction to fire, fire resistance: 3; other properties: 4

6a. Harmonised standard: EN 14509:2013 "Self-supporting double skin metal faced insulating panels. Factory made products. Specifications"

Notified body: Instytut Techniki Budowlanej (ITB) (1488)
FIRES S.R.O. (1396)
Eurofins Expert Services Oy (0809)

7. Declared performances: Technical product characteristics of specified product configuration are available in attachments to this Declaration of Performance.

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

This Declaration of Performance is available on Ruukki web page:

<https://www.ruukki.com/building-envelopes/services-support/sandwich-panel-support/declaration-of-performance-for-sandwich-panels>

Signed for and on behalf of the manufacturer by:



Adam Korol
Senior Vice President
Building Envelopes

Helsinki, 18.06.2024

Declared technical characteristics of specified type of sandwich panel are available on the following pages:

ENERGY PANELS:

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OTHER PANELS:

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Attachment 1 to Declaration of Performance 29/E-PIR/OBO

Panel type:	SP2B E-PIR ENERGY					
Reference to harmonized standard:	EN 14509:2013					
Intended use:	Internal or external walls					
Panel name:	SP2B 100 E-PIR ENERGY	SP2B 110 E-PIR ENERGY	SP2B 120 E-PIR ENERGY	SP2B 150 E-PIR ENERGY	Reference	
Year when CE mark was affixed:	15	20	23	24		
Thickness of external facing:	0,4* - 0,6				mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255					(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m²					(EN 10169)
External facing profile:	L25, L, M, F, R28, R275, R550					
Thickness of internal facing:	0,4* - 0,6				mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095					(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m²					(EN 10169)
Internal facing profile:	L25, L, F					
Core material:	PIR					
Density of core material:	37		36		kg/m³	
Nominal panel thickness:	100	110	120	152.5	mm	
Mass:	12.3	12.7	13.0	14.1	kg/m²	
Mechanical resistance:						
Tensile strength:	0.10	0.10	0.10	0.10	MPa	
Shear strength:	0.09	0.09	0.09	0.09	MPa	
Reduced long term shear strength:	0.036	0.036	0.036	0.036	MPa	
Shear modulus (core):	3.00	3.00	3.00	2.65	MPa	
Compressive strength (core):	0.09	0.09	0.09	0.10	MPa	
Creep coefficient t=2000h:	NPD					
Creep coefficient t=100000h:	NPD					
Wrinkling strength (external face) at profiling L25:						
- in span	165	165	165	165	MPa	
- in span, elevated temperature	150	150	150	150	MPa	
- at internal support	115	115	115	115	MPa	
- at internal support, elevated temperature	103	103	103	103	MPa	
Wrinkling strength (external face) at profiling L, M:						
- in span	145	145	145	130	MPa	
- in span, elevated temperature	130	130	130	115	MPa	
- at internal support	115	115	115	103	MPa	
- at internal support, elevated temperature	103	103	103	92	MPa	
Wrinkling strength (external face) at profiling F, R28, R275, R550:						
- in span	90	90	90	90	MPa	
- in span, elevated temperature	81	81	81	81	MPa	
- at internal support	90	90	90	90	MPa	
- at internal support, elevated temperature	81	81	81	81	MPa	
Wrinkling strength (internal face) at profiling L25:						
- in span	165	165	165	165	MPa	
- at internal support	115	115	115	115	MPa	
Wrinkling strength (internal face) at profiling L:						
- in span	145	145	145	130	MPa	
- at internal support	115	115	115	103	MPa	
Wrinkling strength (internal face) at profiling F:						
- in span	90	90	90	90	MPa	
- at internal support	90	90	90	90	MPa	
Other properties:						
Thermal transmittance, U _{0,s} :	0.22	0.20	0.18	0.14	W/m²K	
Thermal conductivity of the core, λ _{Declared} :	0.022				W/mK	
Reaction to fire:	B-s2, d0				Class	(EN 13501-1)
Fire resistance (wall, horizontal):	EI 15				Class	(EN 13501-2)
Fire resistance (wall, vertical):	EI 15				Class	(EN 13501-2)
External fire performance:	Not applicable					
Water permeability:	A				Class	(EN 12865)
Air permeability, pressure (per 1m²):	n = 0,4812, C = 0,000972					(EN 12114)
Air permeability, suction (per 1m²):	n = 0,1976, C = 0,00261					(EN 12114)
Water vapour permeability:	Impermeable					
Airborne sound insulation, R _w (C, C _p):	24 (-2; -4)				dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10					(EN ISO 11654)
Durability:	Pass - all colours					

* 0,4 mm facing is available only in L or L25 profiling

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 2 to Declaration of Performance 29/E-PIR/OBO

Panel type:	SP2B E-PIR B ENERGY					
Reference to harmonized standard:	EN 14509:2013					
Intended use:	Internal or external walls					
Panel name:	SP2B 100 E-PIR B ENERGY	SP2B 110 E-PIR B ENERGY	SP2B 120 E-PIR B ENERGY	SP2B 150 E-PIR B ENERGY	Reference	
Year when CE mark was affixed:	18	20	23	24		
Thickness of external facing:	0,4* - 0,6				mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255					(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²					(EN 10169)
External facing profile:	L25, L, M, F					
Thickness of internal facing:	0,4* - 0,6				mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095					(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²					(EN 10169)
Internal facing profile:	L25, L, F					
Core material:	PIR					
Density of core material:	37		36		kg/m ³	
Nominal panel thickness:	100	110	120	152.5	mm	
Mass:	12.3	12.7	13.1	14.1	kg/m ²	
Mechanical resistance:						
Tensile strength:	0.10	0.10	0.10	0.10	MPa	
Shear strength:	0.09	0.09	0.09	0.09	MPa	
Reduced long term shear strength:	0.036	0.036	0.036	0.036	MPa	
Shear modulus (core):	3.00	3.00	3.00	2.65	MPa	
Compressive strength (core):	0.09	0.09	0.09	0.10	MPa	
Creep coefficient t=2000h:	NPD					
Creep coefficient t=100000h:	NPD					
Wrinkling strength (external face) at profiling L25:						
- in span	165	165	165	165	MPa	
- in span, elevated temperature	150	150	150	150	MPa	
- at internal support	115	115	115	115	MPa	
- at internal support, elevated temperature	103	103	103	103	MPa	
Wrinkling strength (external face) at profiling L, M:						
- in span	145	145	145	130	MPa	
- in span, elevated temperature	130	130	130	115	MPa	
- at internal support	115	115	115	103	MPa	
- at internal support, elevated temperature	103	103	103	92	MPa	
Wrinkling strength (external face) at profiling F:						
- in span	90	90	90	90	MPa	
- in span, elevated temperature	81	81	81	81	MPa	
- at internal support	90	90	90	90	MPa	
- at internal support, elevated temperature	81	81	81	81	MPa	
Wrinkling strength (internal face) at profiling L25:						
- in span	165	165	165	165	MPa	
- at internal support	115	115	115	115	MPa	
Wrinkling strength (internal face) at profiling L:						
- in span	145	145	145	130	MPa	
- at internal support	115	115	115	103	MPa	
Wrinkling strength (internal face) at profiling F:						
- in span	90	90	90	90	MPa	
- at internal support	90	90	90	90	MPa	
Other properties:						
Thermal transmittance, U _{g,s} :	0.22	0.20	0.18	0.14	W/m ² K	
Thermal conductivity of the core, λ _{declared} :	0.022				W/mK	
Reaction to fire:	B-s2, d0				Class	(EN 13501-1)
Fire resistance (wall, horizontal):	EI 15				Class	(EN 13501-2)
Fire resistance (wall, vertical):	EI 15				Class	(EN 13501-2)
External fire performance:	Not applicable					
Water permeability:	A				Class	(EN 12865)
Air permeability, pressure (per 1m ²):	n = 0,4812, C = 0,000972					(EN 12114)
Air permeability, suction (per 1m ²):	n = 0,1976, C = 0,00261					(EN 12114)
Water vapour permeability:	Impermeable					
Airborne sound insulation, R _w (C; C ₅₀):	24 (-2; -4)				dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10					(EN ISO 11654)
Durability:	Pass - all colours					

* 0,4 mm facing is available only in L or L25 profiling

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 3 to Declaration of Performance 29/E-PIR/OBO

Panel type:	SP2E E-PIR ENERGY						
Reference to harmonized standard:	EN 14509:2013						
Intended use:	Internal or external walls						
Panel name:	SP2E 120 E-PIR ENERGY	SP2E 140 E-PIR ENERGY	SP2E 160 E-PIR ENERGY	SP2E 180 E-PIR ENERGY	SP2E 200 E-PIR ENERGY	Reference	
Year when CE mark was affixed:	15						
Thickness of external facing:	0,5 - 0,6					mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255						(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m²						(EN 10169)
External facing profile:	L25, L, M, F, R28, R275, R550						
Thickness of internal facing:	0,4* - 0,6					mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095						(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m²						(EN 10169)
Internal facing profile:	L25, L, F**						
Core material:	PIR						
Density of core material:	36	37		38		kg/m³	
Nominal panel thickness:	120	143	160	180	200	mm	
Mass:	13.0	13.7	14.5	15.4	16.2	kg/m²	
Mechanical resistance:							
Tensile strength:	0.10	0.10	0.10	0.10	0.10	MPa	
Shear strength:	0.09	0.09	0.09	0.09	0.09	MPa	
Reduced long term shear strength:	0.036	0.036	0.036	0.036	0.036	MPa	
Shear modulus (core):	3.00	3.00	2.65	2.47	2.30	MPa	
Compressive strength (core):	0.09	0.10	0.10	0.10	0.10	MPa	
Creep coefficient t=2000h:	NPD						
Creep coefficient t=10000h:	NPD						
Wrinkling strength (external face) at profiling L25:							
- in span	165	165	165	-	-	MPa	
- in span, elevated temperature	150	150	150	-	-	MPa	
- at internal support	115	115	115	-	-	MPa	
- at internal support, elevated temperature	103	103	103	-	-	MPa	
Wrinkling strength (external face) at profiling L, M:							
- in span	145	145	130	130	130	MPa	
- in span, elevated temperature	130	130	115	115	115	MPa	
- at internal support	115	115	103	103	103	MPa	
- at internal support, elevated temperature	103	103	92	92	92	MPa	
Wrinkling strength (external face) at profiling F, R28, R275, R550:							
- in span	90	90	90	90	90	MPa	
- in span, elevated temperature	81	81	81	81	81	MPa	
- at internal support	90	90	90	90	90	MPa	
- at internal support, elevated temperature	81	81	81	81	81	MPa	
Wrinkling strength (internal face) at profiling L25:							
- in span	165	165	165	-	-	MPa	
- at internal support	115	115	115	-	-	MPa	
Wrinkling strength (internal face) at profiling L:							
- in span	145	145	130	130	130	MPa	
- at internal support	115	115	103	103	103	MPa	
Wrinkling strength (internal face) at profiling F:							
- in span	90	90	90	90	90	MPa	
- at internal support	90	90	90	90	90	MPa	
Other properties:							
Thermal transmittance, U _{g,s} :	0.18	0.15	0.14	0.12	0.11	W/m²K	
Thermal conductivity of the core, λ _{declared} :	0.022					W/mK	
Reaction to fire:	B-s2, d0					Class	(EN 13501-1)
Fire resistance (wall, horizontal):	EI 30					Class	(EN 13501-2)
Fire resistance (wall, vertical):	EI 30					Class	(EN 13501-2)
External fire performance:	Not applicable						
Water permeability:	A					Class	(EN 12865)
Air permeability, pressure (per 1m²):	n = 1,1439, C = 0,000128						(EN 12114)
Air permeability, suction (per 1m²):	n = 0,5712, C = 0,00775						(EN 12114)
Water vapour permeability:	Impermeable						
Airborne sound insulation, R _w (C; C ₅₀):	24 (-2; -4)					dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10						(EN ISO 11654)
Durability:	Pass - all colours						

* 0,4 mm internal facing is available for 120 -160 mm thick panel in L or L25 profiling

** Profiling F at thicknesses 180 and 200 mm is available only in 0,6 mm facing

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 4 to Declaration of Performance 29/E-PIR/OBO

Panel type:	SP2E E-PIR B ENERGY						
Reference to harmonized standard:	EN 14509:2013						
Intended use:	Internal or external walls						
Panel name:	SP2E 120 E-PIR B ENERGY		SP2E 140 E-PIR B ENERGY	SP2E 160 E-PIR B ENERGY	Reference		
Year when CE mark was affixed:	18						
Thickness of external facing:	0.5 - 0.6					mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255						(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²						(EN 10169)
External facing profile:	L25, L, M, F						
Thickness of internal facing:	0,4* - 0,6					mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095						(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²						(EN 10169)
Internal facing profile:	L25, L, F						
Core material:	PIR						
Density of core material:	36		37		kg/m ³		
Nominal panel thickness:	120		143	160	mm		
Mass:	13.1		13.8	14.6	kg/m ²		
Mechanical resistance:							
Tensile strength:	0.10		0.10	0.10	MPa		
Shear strength:	0.09		0.09	0.09	MPa		
Reduced long term shear strength:	0.036		0.036	0.036	MPa		
Shear modulus (core):	3.00		3.00	2.65	MPa		
Compressive strength (core):	0.09		0.10	0.10	MPa		
Creep coefficient t=2000h:	NPD						
Creep coefficient t=100000h:	NPD						
Wrinkling strength (external face) at profiling L25:							
- in span	165		165	165	MPa		
- in span, elevated temperature	150		150	150	MPa		
- at internal support	115		115	115	MPa		
- at internal support, elevated temperature	103		103	103	MPa		
Wrinkling strength (external face) at profiling L, M:							
- in span	145		145	130	MPa		
- in span, elevated temperature	130		130	115	MPa		
- at internal support	115		115	103	MPa		
- at internal support, elevated temperature	103		103	92	MPa		
Wrinkling strength (external face) at profiling F:							
- in span	90		90	90	MPa		
- in span, elevated temperature	81		81	81	MPa		
- at internal support	90		90	90	MPa		
- at internal support, elevated temperature	81		81	81	MPa		
Wrinkling strength (internal face) at profiling L25:							
- in span	165		165	165	MPa		
- at internal support	115		115	115	MPa		
Wrinkling strength (internal face) at profiling L:							
- in span	145		145	130	MPa		
- at internal support	115		115	103	MPa		
Wrinkling strength (internal face) at profiling F:							
- in span	90		90	90	MPa		
- at internal support	90		90	90	MPa		
Other properties:							
Thermal transmittance, U _{A,s} :	0.18		0.15	0.14	W/m ² K		
Thermal conductivity of the core, λ _{declared} :	0.022					W/mK	
Reaction to fire:	B-s2, d0					Class	(EN 13501-1)
Fire resistance (wall, horizontal):	EI 30					Class	(EN 13501-2)
Fire resistance (wall, vertical):	EI 30					Class	(EN 13501-2)
External fire performance:	Not applicable						
Water permeability:	A					Class	(EN 12865)
Air permeability, pressure (per 1m ²):	n = 1,1439, C = 0,000128						(EN 12114)
Air permeability, suction (per 1m ²):	n = 0,5712, C = 0,00775						(EN 12114)
Water vapour permeability:	Impermeable						
Airborne sound insulation, R _w (C; C ₅₀):	24 (-2; -4)					dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10						(EN ISO 11654)
Durability:	Pass - all colours						

* 0,4 mm internal facing is available only in L or L25 profiling

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 5 to Declaration of Performance 29/E-PIR/OBO

Panel type:		SP2B E-PIR							
Reference to harmonized standard:		EN 14509:2013							
Intended use:		Internal or external walls, ceilings							
Panel name:	SP2B 40 E-PIR	SP2B 60 E-PIR	SP2B 80 E-PIR	SP2B 100 E-PIR	SP2B 110 E-PIR	SP2B 120 E-PIR	SP2B 150 E-PIR	Reference	
Year when CE mark was affixed:	15				20	23	24		
Thickness of external facing:	0,4* - 0,6							mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255								(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²								(EN 10169)
External facing profile:	L25, L, M, F, R28, R275, R550								
Thickness of internal facing:	0,4** - 0,6							mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095								(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²								(EN 10169)
Internal facing profile:	L25, L, F								
Core material:	PIR								
Density of core material:	40	37.5	37	36				kg/m ³	
Nominal panel thickness:	40	60	80	100	110	120	152.5	mm	
Mass:	10.0	10.8	11.5	12.3	12.6	13.0	14.1	kg/m ²	
Mechanical resistance:									
Tensile strength:	0.09	0.09	0.10	0.10	0.10	0.10	0.10	MPa	
Shear strength:	0.09	0.09	0.09	0.09	0.09	0.09	0.09	MPa	
Reduced long term shear strength:	0.036	0.036	0.036	0.036	0.036	0.036	0.036	MPa	
Shear modulus (core):	3.00	3.00	3.00	3.00	3.00	3.00	2.65	MPa	
Compressive strength (core):	0.09	0.09	0.09	0.09	0.09	0.09	0.10	MPa	
Creep coefficient t=2000h:	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
Creep coefficient t=100000h:	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
Wrinkling strength (external face) at profiling L25:									
- in span	-	120	165	165	165	165	165	MPa	
- in span, elevated temperature	-	108	150	150	150	150	150	MPa	
- at internal support	-	110	115	115	115	115	115	MPa	
- at internal support, elevated temperature	-	99	103	103	103	103	103	MPa	
Wrinkling strength (external face) at profiling L, M:									
- in span	120	120	145	145	145	145	130	MPa	
- in span, elevated temperature	108	108	130	130	130	130	115	MPa	
- at internal support	110	110	124	124	124	124	103	MPa	
- at internal support, elevated temperature	99	99	111	111	111	111	92	MPa	
Wrinkling strength (external face) at profiling F, R28, R275, R550:									
- in span	90	90	90	90	90	90	90	MPa	
- in span, elevated temperature	81	81	81	81	81	81	81	MPa	
- at internal support	90	90	90	90	90	90	90	MPa	
- at internal support, elevated temperature	81	81	81	81	81	81	81	MPa	
Wrinkling strength (internal face) at profiling L25:									
- in span	-	120	165	165	165	165	165	MPa	
- at internal support	-	110	115	115	115	115	115	MPa	
Wrinkling strength (internal face) at profiling L:									
- in span	120	120	145	145	145	145	130	MPa	
- at internal support	110	110	115	115	115	115	103	MPa	
Wrinkling strength (internal face) at profiling F:									
- in span	90	90	90	90	90	90	90	MPa	
- at internal support	90	90	90	90	90	90	90	MPa	
Resistance to repeated access load:	Not suitable for occasional foot traffic for access or maintenance								
Other properties:									
Thermal transmittance, U _{GL} :	0.56	0.36	0.27	0.22	0.20	0.18	0.14	W/m ² K	
Thermal conductivity of the core, λ _{declared} :	0.022							W/mK	
Reaction to fire:	B-s2, d0							Class	(EN 13501-1)
Fire resistance (wall, horizontal):	NPD			EI 15				Class	(EN 13501-2)
Fire resistance (wall, vertical):	NPD			EI 15				Class	(EN 13501-2)
Fire resistance (ceiling):	NPD								
External fire performance:	Not applicable								
Water permeability:	A							Class	(EN 12865)
Air permeability:	NPD								
Water vapour permeability:	Impermeable								
Airborne sound insulation, R _w (C; C ₅₀):	24 (-2; -4)							dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10								(EN ISO 11654)
Durability:	Pass - all colours								

* 0,4 mm external facing is available for 80 -150 mm thick panel in L or L25 profiling

** 0,4 mm internal facing is available only in L or L25 profiling

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 6 to Declaration of Performance 29/E-PIR/OBO

Panel type:	SP2B E-PIR B							
Reference to harmonized standard:	EN 14509:2013							
Intended use:	Internal or external walls, ceilings							
Panel name:	SP2B 60 E-PIR B	SP2B 80 E-PIR B	SP2B 100 E-PIR B	SP2B 110 E-PIR B	SP2B 120 E-PIR B	SP2B 150 E-PIR B	Reference	
Year when CE mark was affixed:	21	18		20	23	24		
Thickness of external facing:	0,4* - 0,6						mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255							(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²							(EN 10169)
External facing profile:	L25, L, M, F							
Thickness of internal facing:	0,4** - 0,6						mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095							(EN 10346)
Coating of internal facing:	Poliester, Hiarc, Hiarc max, Csafe, PVC lub inna powłoka o PCS ≤ 4,0 MJ/m ²							(EN 10169)
Internal facing profile:	L25, L, F							
Core material:	PIR							
Density of core material:	37.5	37	36				kg/m ³	
Nominal panel thickness:	60	80	100	110	110	152.5	mm	
Mass:	10.8	11.6	12.3	12.7	13.1	14.1	kg/m ²	
Mechanical resistance:								
Tensile strength:	0.09	0.10	0.10	0.10	0.10	0.10	MPa	
Shear strength:	0.09	0.09	0.09	0.09	0.09	0.09	MPa	
Reduced long term shear strength:	0.036	0.036	0.036	0.036	0.036	0.036	MPa	
Shear modulus (core):	3.00	3.00	3.00	3.00	3.00	2.65	MPa	
Compressive strength (core):	0.09	0.09	0.09	0.09	0.09	0.10	MPa	
Creep coefficient t=2000h:	2.4	2.4	2.4	2.4	2.4	2.4		
Creep coefficient t=100000h:	7.0	7.0	7.0	7.0	7.0	7.0		
Wrinkling strength (external face) at profiling L25:								
- in span	120	165	165	165	165	165	MPa	
- in span, elevated temperature	108	150	150	150	150	150	MPa	
- at internal support	110	115	115	115	115	115	MPa	
- at internal support, elevated temperature	99	103	103	103	103	103	MPa	
Wrinkling strength (external face) at profiling L, M:								
- in span	120	145	145	145	145	130	MPa	
- in span, elevated temperature	108	130	130	130	130	115	MPa	
- at internal support	110	115	115	115	115	103	MPa	
- at internal support, elevated temperature	99	103	103	103	103	92	MPa	
Wrinkling strength (external face) at profiling F:								
- in span	90	90	90	90	90	90	MPa	
- in span, elevated temperature	81	81	81	81	81	81	MPa	
- at internal support	90	90	90	90	90	90	MPa	
- at internal support, elevated temperature	81	81	81	81	81	81	MPa	
Wrinkling strength (internal face) at profiling L25:								
- in span	120	165	165	165	165	165	MPa	
- at internal support	110	115	115	115	115	115	MPa	
Wrinkling strength (internal face) at profiling L:								
- in span	120	145	145	140	140	130	MPa	
- at internal support	110	115	115	115	115	103	MPa	
Wrinkling strength (internal face) at profiling F:								
- in span	90	90	90	90	90	90	MPa	
- at internal support	90	90	90	90	90	90	MPa	
Resistance to repeated access load:	Not suitable for occasional foot traffic for access or maintenance							
Other properties:								
Thermal transmittance, U _{d,s} :	0.36	0.27	0.22	0.20	0.18	0.14	W/m ² K	
Thermal conductivity of the core, λ _{Declared} :	0.022						W/mK	
Reaction to fire:	B-s2, d0						Class	(EN 13501-1)
Fire resistance (wall, horizontal):	NPD		EI 15				Class	(EN 13501-2)
Fire resistance (wall, vertical):	NPD		EI 15				Class	(EN 13501-2)
Fire resistance (ceiling):	NPD							
External fire performance:	Not applicable							
Water permeability:	A						Class	(EN 12865)
Air permeability:	NPD							
Water vapour permeability:	Impermeable							
Airborne sound insulation, R _w (C; C _p):	24 (-2; -4)						dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10							(EN ISO 11654)
Durability:	Pass - all colours							

* 0,4 mm external facing is available for 80 -150 mm thick panel in L or L25 profiling

** 0,4 mm internal facing is available only in L or L25 profiling

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 7 to Declaration of Performance 29/E-PIR/OBO

Panel type:	SP2B E-PIRE					
Reference to harmonized standard:	EN 14509:2013					
Intended use:	Internal or external walls					
Panel name:	SP2B 80 E-PIRE	SP2B 100 E-PIRE	SP2B 110 E-PIRE	SP2B 120 E-PIRE	Reference	
Year when CE mark was affixed:	18		20	23		
Thickness of external facing:	0,4* - 0,6				mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255					(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²					(EN 10169)
External facing profile:	L25, L, M					
Thickness of internal facing:	0,4 - 0,6				mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095					(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²					(EN 10169)
Internal facing profile:	L25					
Core material:	PIR					
Density of core material:	34.5				kg/m ³	
Nominal panel thickness:	80	100	110	120	mm	
Mass:	11.4	12.1	12.4	12.8	kg/m ²	
Mechanical resistance:						
Tensile strength:	0.08	0.08	0.08	0.08	MPa	
Shear strength:	0.09	0.09	0.09	0.09	MPa	
Reduced long term shear strength:	0.036	0.036	0.036	0.036	MPa	
Shear modulus (core):	3.0	3.0	3.0	3.0	MPa	
Compressive strength (core):	0.07	0.07	0.07	0.07	MPa	
Creep coefficient t=2000h:	NPD					
Creep coefficient t=100000h:	NPD					
Wrinkling strength (external face) at profiling L25:						
- in span	145	145	145	145	MPa	
- in span, elevated temperature	130	130	130	130	MPa	
- at internal support	95	95	95	95	MPa	
- at internal support, elevated temperature	80	80	80	80	MPa	
Wrinkling strength (external face) at profiling L, M:						
- in span	120	120	120	120	MPa	
- in span, elevated temperature	108	108	108	108	MPa	
- at internal support	80	80	80	80	MPa	
- at internal support, elevated temperature	70	70	70	70	MPa	
Wrinkling strength (internal face) at profiling L25:						
- in span	145	145	145	145	MPa	
- at internal support	100	100	100	100	MPa	
Other properties:						
Thermal transmittance, U _{4,s} :	0.27	0.22	0.20	0.18	W/m ² K	
Thermal conductivity of the core, λ _{Declared} :	0.022				W/mK	
Reaction to fire:	B-s2, d0				Class	(EN 13501-1)
Fire resistance (wall, horizontal):	NPD	EI 15			Class	(EN 13501-2)
Fire resistance (wall, vertical):	NPD					
External fire performance:	Not applicable					
Water permeability:	A				Class	(EN 12865)
Air permeability:	NPD					
Water vapour permeability:	Impermeable					
Airborne sound insulation, R _w (C; C _{tr}):	24 (-2; -4)				dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10					(EN ISO 11654)
Durability:	Pass - all colours					

* 0,4 mm facing is available only in L25 profiling

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 8 to Declaration of Performance 29/E-PIR/OBO

Panel type	SP2B E-PIRE B					
Reference to harmonized standard:	EN 14509:2013					
Intended use:	Internal or external walls					
Panel name:	SP2B 80 E-PIRE B	SP2B 100 E-PIRE B	SP2B 110 E-PIRE B	SP2B 120 E-PIRE B	Reference	
Year when CE mark was affixed:	18		20	23		
Thickness of external facing:	0,40* - 0,60				mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255					(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²					(EN 10169)
External facing profile:	L25, L, M					
Thickness of internal facing:	0,40 - 0,60				mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095					(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²					(EN 10169)
Internal facing profile:	L25					
Core material:	PIR					
Density of core material:	34.5				kg/m ³	
Nominal panel thickness:	80	100	110	120	mm	
Mass:	11.4	12.1	12.4	12.8	kg/m ²	
Mechanical resistance:						
Tensile strength:	0.08	0.08	0.08	0.08	MPa	
Shear strength:	0.09	0.09	0.09	0.09	MPa	
Reduced long term shear strength:	0.036	0.036	0.036	0.036	MPa	
Shear modulus (core):	3.0	3.0	3.0	3.0	MPa	
Compressive strength (core):	0.07	0.07	0.07	0.07	MPa	
Creep coefficient t=2000h:	NPD					
Creep coefficient t=100000h:	NPD					
Wrinkling strength (external face) at profiling L25:						
- in span	145	145	145	145	MPa	
- in span, elevated temperature	130	130	130	130	MPa	
- at internal support	95	95	95	95	MPa	
- at internal support, elevated temperature	80	80	80	80	MPa	
Wrinkling strength (external face) at profiling L, M:						
- in span	120	120	120	120	MPa	
- in span, elevated temperature	108	108	108	108	MPa	
- at internal support	80	80	80	80	MPa	
- at internal support, elevated temperature	70	70	70	70	MPa	
Wrinkling strength (internal face) at profiling L25:						
- in span	145	145	145	145	MPa	
- at internal support	100	100	100	100	MPa	
Other properties:						
Thermal transmittance, U _{4,s} ⁎:	0.27	0.22	0.20	0.18	W/m ² K	
Thermal conductivity of the core, λ ^{Declared} :	0.022				W/mK	
Reaction to fire:	B-s2, d0				Class	(EN 13501-1)
Fire resistance (wall, horizontal):	NPD	EI 15			Class	(EN 13501-2)
Fire resistance (wall, vertical):	NPD					
External fire performance:	Not applicable					
Water permeability:	A				Class	(EN 12865)
Air permeability:	NPD					
Water vapour permeability:	Impermeable					
Airborne sound insulation, R _w (C; C _{tr}):	24 (-2; -4)				dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10					(EN ISO 11654)
Durability:	Pass - all colours					

* 0,4 mm facing is available only in L25 profiling

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 9 to Declaration of Performance 29/E-PIR/OBO

Panel type	SP2D E-PIR						
Reference to harmonized standard:	EN 14509:2013						
Intended use:	Internal or external walls						
Panel name:	SP2D 60 E-PIR	SP2D 80 E-PIR	SP2D 100 E-PIR	SP2D 120 E-PIR	Reference		
Year when CE mark was affixed:	15						
Thickness of external facing:	0,5 - 0,6					mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255						(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²						(EN 10169)
External facing profile:	L, M, F, R28						
Thickness of internal facing:	0,4* - 0,6					mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095						(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²						(EN 10169)
Internal facing profile:	L, F						
Core material:	PIR						
Density of core material:	38.5					kg/m ³	
Nominal panel thickness:	60	80	100	120	mm		
Mass:	11.2	11.9	12.7	13.4	kg/m ²		
Mechanical resistance:							
Tensile strength:	0.09	0.09	0.09	0.09	MPa		
Shear strength:	0.09	0.09	0.09	0.09	MPa		
Reduced long term shear strength:	0.036	0.036	0.036	0.036	MPa		
Shear modulus (core):	3.00	3.00	3.00	3.00	MPa		
Compressive strength (core):	0.085	0.085	0.09	0.09	MPa		
Creep coefficient t=2000h:	NPD						
Creep coefficient t=100000h:	NPD						
Wrinkling strength (external face) at profiling L, M:							
- in span	120	140	140	140	MPa		
- in span, elevated temperature	108	126	126	126	MPa		
- at internal support	110	115	115	115	MPa		
- at internal support, elevated temperature	99	103	103	103	MPa		
Wrinkling strength (external face) at profiling F, R28:							
- in span	90	90	90	90	MPa		
- in span, elevated temperature	81	81	81	81	MPa		
- at internal support	90	90	90	90	MPa		
- at internal support, elevated temperature	81	81	81	81	MPa		
Wrinkling strength (internal face) at profiling L:							
- in span	120	140	140	140	MPa		
- at internal support	110	115	115	115	MPa		
Wrinkling strength (internal face) at profiling F:							
- in span	90	90	90	90	MPa		
- at internal support	90	90	90	90	MPa		
Other properties:							
Thermal transmittance, U _{g,s} :	0.38	0.28	0.22	0.18	W/m ² K		
Thermal conductivity of the core, λ _{declared} :	0.022					W/mK	
Reaction to fire:	B-s2, d0						
Fire resistance (wall, horizontal):	NPD						
Fire resistance (wall, vertical):	NPD		EI 15 (i→o) / EI 15 (o→i)		Class	(EN 13501-2)	
External fire performance:	Not applicable						
Water permeability:	A					Class	(EN 12865)
Air permeability:	NPD						
Water vapour permeability:	Impermeable						
Airborne sound insulation, R _w (C; C _{tr}):	24 (-2; -4)					dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10						(EN ISO 11654)
Durability:	Pass - all colours						

* 0,4 mm facing is available only in L profiling

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 10 to Declaration of Performance 29/E-PIR/OBO

Panel type	SP2E E-PIR						
Reference to harmonized standard:	EN 14509:2013						
Intended use:	Internal or external walls, ceilings						
Panel name:	SP2E 120 E-PIR	SP2E 140 E-PIR	SP2E 160 E-PIR	SP2E 180 E-PIR	SP2E 200 E-PIR	Reference	
Year when CE mark was affixed:	15						
Thickness of external facing:	0,5 - 0,6					mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255						(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²						(EN 10169)
External facing profile:	L25, L, M, F, R28, R275, R550						
Thickness of internal facing:	0,4* - 0,6					mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095						(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²						(EN 10169)
Internal facing profile:	L25, L, F**						
Core material:	PIR						
Density of core material:	36	37		38		kg/m ³	
Nominal panel thickness:	120	143	160	180	200	mm	
Mass:	13.0	13.7	14.5	15.4	16.2	kg/m ²	
Mechanical resistance:							
Tensile strength:	0.10	0.10	0.10	0.10	0.10	MPa	
Shear strength:	0.09	0.09	0.09	0.09	0.09	MPa	
Reduced long term shear strength:	0.036	0.036	0.036	0.036	0.036	MPa	
Shear modulus (core):	3.00	3.00	2.65	2.47	2.30	MPa	
Compressive strength (core):	0.09	0.10	0.10	0.10	0.10	MPa	
Creep coefficient t=2000h:	2.4	2.4	2.4	2.4	2.4		
Creep coefficient t=100000h:	7.0	7.0	7.0	7.0	7.0		
Wrinkling strength (external face) at profiling L25:							
- in span	165	165	165	-	-	MPa	
- in span, elevated temperature	150	150	150	-	-	MPa	
- at internal support	115	115	115	-	-	MPa	
- at internal support, elevated temperature	103	103	103	-	-	MPa	
Wrinkling strength (external face) at profiling L, M:							
- in span	145	145	130	130	130	MPa	
- in span, elevated temperature	130	130	115	115	115	MPa	
- at internal support	115	115	103	103	103	MPa	
- at internal support, elevated temperature	103	103	92	92	92	MPa	
Wrinkling strength (external face) at profiling F, R28, R275, R550:							
- in span	90	90	90	90	90	MPa	
- in span, elevated temperature	81	81	81	81	81	MPa	
- at internal support	90	90	90	90	90	MPa	
- at internal support, elevated temperature	81	81	81	81	81	MPa	
Wrinkling strength (internal face) at profiling L25:							
- in span	165	165	165	-	-	MPa	
- at internal support	115	115	115	-	-	MPa	
Wrinkling strength (internal face) at profiling L:							
- in span	145	145	130	130	130	MPa	
- at internal support	115	115	103	103	103	MPa	
Wrinkling strength (internal face) at profiling F:							
- in span	90	90	90	90	90	MPa	
- at internal support	90	90	90	90	90	MPa	
Resistance to repeated access load:	Not suitable for occasional foot traffic for access or maintenance						
Other properties:							
Thermal transmittance, U _{a,s} *	0.18	0.15	0.14	0.12	0.11	W/m ² K	
Thermal conductivity of the core, λ _{Declared} *	0.022					W/mK	
Reaction to fire:	B-s2, d0					Class	(EN 13501-1)
Fire resistance (wall):	EI 30					Class	(EN 13501-2)
Fire resistance (wall):	EI 30					Class	(EN 13501-2)
Fire resistance (ceiling):	EI 30						
External fire performance:	Not applicable						
Water permeability:	A					Class	(EN 12865)
Air permeability:	NPD						
Water vapour permeability:	Impermeable						
Airborne sound insulation, R _w (C; C _b):	24 (-2; -4)					dB	(EN ISO 717-1)
Sound absorption, α _w *	0.10						(EN ISO 11654)
Durability:	Pass - all colours						

* 0,4 mm internal facing is available for 120 -160 mm thick panel in L or L25 profiling

** Profiling F at thicknesses 180 and 200 mm is available only in 0,6 mm facing

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 11 to Declaration of Performance 29/E-PIR/OBO

Panel type	SP2E E-PIR B				
Reference to harmonized standard:	EN 14509:2013				
Intended use:	Internal or external walls, ceilings				
Panel name:	SP2E 120 E-PIR B	SP2E 140 E-PIR B	SP2E 160 E-PIR B	Reference	
Year when CE mark was affixed:	18				
Thickness of external facing:	0,5 - 0,6			mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255				(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²				(EN 10169)
External facing profile:	L25, L, M, F				
Thickness of internal facing:	0,4* - 0,6			mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095				(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²				(EN 10169)
Internal facing profile:	L25, L, F				
Core material:	PIR				
Density of core material:	36	37		kg/m ³	
Nominal panel thickness:	120	143	160	mm	
Mass:	13.1	13.8	14.6	kg/m ²	
Mechanical resistance:					
Tensile strength:	0.10	0.10	0.10	MPa	
Shear strength:	0.09	0.09	0.09	MPa	
Reduced long term shear strength:	0.036	0.036	0.036	MPa	
Shear modulus (core):	3.00	3.00	2.65	MPa	
Compressive strength (core):	0.09	0.10	0.10	MPa	
Creep coefficient t=2000h:	2.4	2.4	2.4		
Creep coefficient t=100000h:	7.0	7.0	7.0		
Wrinkling strength (external face) at profiling L25:					
- in span	165	165	165	MPa	
- in span, elevated temperature	150	150	150	MPa	
- at internal support	115	115	115	MPa	
- at internal support, elevated temperature	103	103	103	MPa	
Wrinkling strength (external face) at profiling L, M:					
- in span	145	145	130	MPa	
- in span, elevated temperature	130	130	115	MPa	
- at internal support	115	115	103	MPa	
- at internal support, elevated temperature	103	103	92	MPa	
Wrinkling strength (external face) at profiling F:					
- in span	90	90	90	MPa	
- in span, elevated temperature	81	81	81	MPa	
- at internal support	90	90	90	MPa	
- at internal support, elevated temperature	81	81	81	MPa	
Wrinkling strength (internal face) at profiling L25:					
- in span	165	165	165	MPa	
- at internal support	115	115	115	MPa	
Wrinkling strength (internal face) at profiling L:					
- in span	145	145	130	MPa	
- at internal support	115	115	103	MPa	
Wrinkling strength (internal face) at profiling F:					
- in span	90	90	90	MPa	
- at internal support	90	90	90	MPa	
Resistance to repeated access load:	Not suitable for occasional foot traffic for access or maintenance				
Other properties:					
Thermal transmittance, U _{g,s} :	0.18	0.15	0.14	W/m ² K	
Thermal conductivity of the core, λ _{Declared} :	0.022			W/mK	
Reaction to fire:	B-s2, d0			Class	(EN 13501-1)
Fire resistance (wall, horizontal):	EI 30			Class	(EN 13501-2)
Fire resistance (wall, vertical):	EI 30			Class	(EN 13501-2)
Fire resistance (ceiling):	EI 30				
External fire performance:	Not applicable				
Water permeability:	A			Class	(EN 12865)
Air permeability:	NPD				
Water vapour permeability:	Impermeable				
Airborne sound insulation, R _w (C; C _b):	24 (-2; -4)			dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10				(EN ISO 11654)
Durability:	Pass - all colours				

* 0.4 mm internal facing is available only in L or L25 profiling

Detailed product/material specification is given on order confirmation or delivery documentation.

Attachment 12 to Declaration of Performance 29/E-PIR/OBO

Panel type	SP2C E-PIR								
Reference to harmonized standard:	EN 14509:2013								
Intended use:	Roof panel								
Panel name:	SP2C 80/40 E-PIR	SP2C 100/60 E-PIR	SP2C 120/80 E-PIR	SP2C 140/100 E-PIR	SP2C 160/120 E-PIR	SP2C 190/150 E-PIR	SP2C 210/170 E-PIR	Reference	
Year when CE mark was affixed:	15					20	15		
Thickness of external facing:	0,5 - 0,6							mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140, S280GD+ZM120, S280GD+ZA255 S250GD+Z275, S250GD+Z190, S250GD+ZM140, S250GD+ZM120, S250GD+ZA255								(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²								(EN 10169)
External facing profile:	T								
Thickness of internal facing:	0,4 - 0,6							mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZA255, S280GD+Z100, S280GD+ZM140, S280GD+ZM120, S280GD+ZM100, S280GD+ZA095 S250GD+Z275, S250GD+Z190, S250GD+ZA255, S250GD+Z100, S250GD+ZM140, S250GD+ZM120, S250GD+ZM100, S250GD+ZA095								(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS ≤ 4,0 MJ/m ²								(EN 10169)
Internal facing profile:	L25, L								
Core material:	PIR								
Density of core material:	37.5							kg/m ³	
Nominal panel thickness:	40	60	80	100	120	150	170	mm	
Mass:	10.5	11.3	11.9	12.7	13.4	14.5	15.5	kg/m ²	
Mechanical resistance:									
Tensile strength:	0.07	0.07	0.07	0.07	0.07	0.07	0.07	MPa	
Shear strength:	0.10	0.10	0.10	0.10	0.10	0.09	0.09	MPa	
Reduced long term shear strength:	0.04	0.04	0.04	0.04	0.04	0.036	0.036	MPa	
Shear modulus (core):	3.00	3.00	3.00	3.00	3.00	2.50	2.00	MPa	
Compressive strength (core):	0.10	0.10	0.10	0.10	0.10	0.10	0.10	MPa	
Creep coefficient t=2000h:	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
Creep coefficient t=100000h:	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
Wrinkling strength (external face) at profiling T:									
- in span	250	250	250	250	250	230	215	MPa	
- in span, elevated temperature	250	250	250	250	250	230	215	MPa	
- at internal support	230	230	230	230	230	210	200	MPa	
- at internal support, elevated temperature	230	230	230	230	230	210	200	MPa	
Wrinkling strength (internal face) at profiling L25, L:									
- in span	125	120	115	110	110	105	100	MPa	
- at internal support	105	105	105	99	99	94	87	MPa	
Resistance to repeated access load:	Not suitable for occasional foot traffic for access or maintenance								
Other properties:									
Thermal transmittance, U _{g,s} :	0.50	0.34	0.26	0.21	0.18	0.15	0.13	W/m ² K	
Thermal conductivity of the core, λ _{Declared} :	0.022							W/mK	
Reaction to fire:	B-s2, d0							Class	(EN 13501-1)
Fire resistance:	NPD		REI 20 / RE 30					Class	(EN 13501-2)
External fire performance:	B _{ROOF} (I1, I2, I3)							Class	(CWFT)
Water permeability:	A							Class	(EN 12865)
Air permeability:	NPD								
Water vapour permeability:	Impermeable								
Airborne sound insulation, R _w (C; C _n):	24 (-2; -4)							dB	(EN ISO 717-1)
Sound absorption, α _w :	0.10								(EN ISO 11654)
Durability:	Pass - all colours								

Detailed product/material specification is given on order confirmation or delivery documentation.