



DECLARATION OF PERFORMANCE No. 30/X-PIR/OBO

1. Unique identification code of product type:

Sandwich panel SP2B X-PIR, SP2B X-PIR ENERGY, SP2D X-PIR, SP2D X-PIR ENERGY, SP2E X-PIR, SP2E X-PIR ENERGY, SP2C X-PIR with polyisocyanurate core

SP2B40X-PIR SP2B60X-PIR SP2B80X-PIR SP2B100X-PIR	SP2E120X-PIR SP2E140X-PIR SP2E160X-PIR SP2E180X-PIR SP2E200X-PIR	SP2C80/40X-PIR SP2C100/60X-PIR SP2C120/80X-PIR SP2C140/100X-PIR SP2C160/120X-PIR SP2C210/170X-PIR
SP2B80X-PIR ENERGY SP2B100X-PIR ENERGY	SP2E120X-PIR ENERGY	
SP2D60X-PIR SP2D80X-PIR SP2D100X-PIR SP2D120X-PIR	SP2E140X-PIR ENERGY SP2E160X-PIR ENERGY SP2E180X-PIR ENERGY SP2E200X-PIR ENERGY	
SP2D80X-PIR ENERGY SP2D100X-PIR ENERGY SP2D120X-PIR ENERGY		

2. Intended use: Self-supporting metal faced insulating panels for use in buildings; external walls, internal walls and ceilings.

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)
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:

<http://www.ruukki.com/b2b/support/certificates-and-declarations/sandwich-panel-certificates-and-approvals>

Signed for and on behalf of the manufacturer by:



Adam Korol
Senior Vice President
Building Components

Helsinki, 01.04.2019

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

ENERGY PANELS:

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SP2E X-PIR Energy	Page 6

OTHER PANELS:

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SP2C X-PIR	Page 10

Attachment 1 to Declaration of Performance 30/X-PIR/OBO

Panel type	SP2B X-PIR ENERGY			
Reference to harmonized standard:	EN 14509:2013			
Year when CE mark was affixed:	15			
Intended use:	Internal or external walls, ceilings			
Panel thickness:	80	100	Reference	
Thickness of external facing:	0,50 - 0,70			mm (EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140			(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS $\leq 4,0 \text{ MJ/m}^2$			(EN 10169)
External facing profile:	L25, L, M, F, P, R28, R275, R550			
Thickness of internal facing:	0,40 - 0,60			mm (EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+Z100, S280GD+ZM140, S280GD+ZM100			(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS $\leq 4,0 \text{ MJ/m}^2$			(EN 10169)
Internal facing profile:	L25, L, F			
Core material:	PIR			
Density of core material:	39			kg/m ³
Mass:	11.2	12.1		kg/m ²
Mechanical resistance:				
Tensile strength:	0.10	0.10		MPa
Shear strength:	0.10	0.10		MPa
Reduced long term shear strength:	0.04	0.04		MPa
Shear modulus (core):	3.00	3.00		MPa
Compressive strength (core):	0.10	0.10		MPa
Creep coefficient t=2000h:	2.4	2.4		
Creep coefficient t=100000h:	7.0	7.0		
Wrinkling strength (external face) at profiling L25:				
- in span	165	165		MPa
- in span, elevated temperature	150	150		MPa
- at internal support	130	130		MPa
- at internal support, elevated temperature	115	115		MPa
Wrinkling strength (external face) at profiling L, M:				
- in span	150	150		MPa
- in span, elevated temperature	135	135		MPa
- at internal support	124	124		MPa
- at internal support, elevated temperature	111	111		MPa
Wrinkling strength (external face) at profiling F, P, R28, R275, R550:				
- in span	90	90		MPa
- in span, elevated temperature	81	81		MPa
- at internal support	90	90		MPa
- at internal support, elevated temperature	81	81		MPa
Wrinkling strength (internal face) at profiling L25:				
- in span	165	165		MPa
- at internal support	130	130		MPa
Wrinkling strength (internal face) at profiling L:				
- in span	150	150		MPa
- at internal support	124	124		MPa
Wrinkling strength (internal face) at profiling F:				
- in span	90	90		MPa
- at internal support	90	90		MPa
Other properties:				
Thermal transmittance, U _{d,s} :	0.27	0.22		W/m ² K
Thermal conductivity of the core, $\lambda_{\text{Declared}}$:	0.022			W/mK
Reaction to fire:	B-s2, d0	B-s1,d0		Class (EN 13501-1)
Fire resistance (wall):	EI 15	EI 30		Class (EN 13501-2)
Fire resistance (ceiling):	NPD	EI 30		Class
External fire performance:	Not applicable			
Water permeability:	A	A		Class (EN 12865)
Air permeability:	$\leq 1,5$	$\leq 1,5$		m ³ /m ² h (EN 12114)
Water vapour permeability:	Impermeable			
Airborne sound insulation, R _w (C; C _v):	24 (-2; -4)	24 (-2; -4)		dB (EN ISO 717-1)
Sound absorption, α_w :	0.10	0.10		(EN ISO 11654)
Durability:	Pass - all colours			

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

Attachment 2 to Declaration of Performance 30/X-PIR/OBO

Panel type	SP2D X-PIR ENERGY				
Reference to harmonized standard:	EN 14509:2013				
Year when CE mark was affixed:	15				
Intended use:	Internal or external walls				
Panel thickness:	80	100	120	Reference	
Thickness of external facing:	0,50 - 0,70			mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140				(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS $\leq 4,0$ MJ/m ²				(EN 10169)
External facing profile:	L, M, F, P, R28				
Thickness of internal facing:	0,40 - 0,60			mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+Z100 S280GD+ZM140, S280GD+ZM100				(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS $\leq 4,0$ MJ/m ²				(EN 10169)
Internal facing profile:	L, F				
Core material:	PIR				
Density of core material:	39			kg/m ³	
Mass:	11.2	12.0	12.8	kg/m ²	
Mechanical resistance:					
Tensile strength:	0.10	0.10	0.10	MPa	
Shear strength:	0.10	0.10	0.10	MPa	
Reduced long term shear strength:	0.04	0.04	0.04	MPa	
Shear modulus (core):	3.00	3.00	3.00	MPa	
Compressive strength (core):	0.10	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 L, M:					
- in span	150	150	150	MPa	
- in span, elevated temperature	135	135	135	MPa	
- at internal support	124	124	124	MPa	
- at internal support, elevated temperature	111	111	111	MPa	
Wrinkling strength (external face) at profiling F, P, R28:					
- in span	120	120	120	MPa	
- in span, elevated temperature	108	108	108	MPa	
- at internal support	110	110	110	MPa	
- at internal support, elevated temperature	99	99	99	MPa	
Wrinkling strength (internal face) at profiling L:					
- in span	150	150	150	MPa	
- at internal support	124	124	124	MPa	
Wrinkling strength (internal face) at profiling F:					
- in span	110	110	110	MPa	
- at internal support	110	110	110	MPa	
Other properties:					
Thermal transmittance, U _{d,s} :	0.28	0.22	0.18	W/m ² K	
Thermal conductivity of the core, $\lambda_{\text{Declared}}$:	0.022			W/mK	
Reaction to fire:	B-s2, d0			Class	(EN 13501-1)
Fire resistance:	EI 15 / EW 30			Class	(EN 13501-2)
External fire performance:	Not applicable				
Water permeability:	A	A	A	Class	(EN 12865)
Air permeability:	$\leq 1,5$	$\leq 1,5$	$\leq 1,5$	m ³ /m ² h	(EN 12114)
Water vapour permeability:	Impermeable				
Airborne sound insulation, R _w (C; C _{tr}):	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	dB	(EN ISO 717-1)
Sound absorption, α_w :	0.10	0.10	0.10		(EN ISO 11654)
Durability:	Pass - all colours				

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

Attachment 3 to Declaration of Performance 30/X-PIR/OBO

Panel type	SP2E X-PIR ENERGY						
Reference to harmonized standard:	EN 14509:2013						
Year when CE mark was affixed:	15						
Intended use:	Internal or external walls, ceilings						
Panel thickness:	120	140	160	180	200	Reference	
Thickness of external facing:	0,50 - 0,70					mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140						(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS \leq 4,0 MJ/m ²						(EN 10169)
External facing profile:	L25*, L, M, F, R28, R275, R550						
Thickness of internal facing:	0,40 - 0,60					mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+Z100 S280GD+ZM140, S280GD+ZM100						(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS \leq 4,0 MJ/m ²						(EN 10169)
Internal facing profile:	L25*, L, F						
Core material:	PIR						
Density of core material:	39					kg/m ³	
Mass:	13.8	14.7	15.5	16.4	17.3	kg/m ²	
Mechanical resistance:							
Tensile strength:	0.10	0.10	0.10	0.10	0.10	MPa	
Shear strength:	0.10	0.10	0.10	0.095	0.09	MPa	
Reduced long term shear strength:	0.04	0.04	0.04	0.038	0.036	MPa	
Shear modulus (core):	3.00	3.00	2.65	2.47	2.30	MPa	
Compressive strength (core):	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		
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	125	125	125	-	-	MPa	
- at internal support, elevated temperature	110	110	110	-	-	MPa	
Wrinkling strength (external face) at profiling L, M:							
- in span	150	150	135	135	135	MPa	
- in span, elevated temperature	135	135	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	130	130	130	-	-	MPa	
Wrinkling strength (internal face) at profiling L:							
- in span	150	150	135	135	135	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	0.16	0.14	0.12	0.11	W/m ² K	
Thermal conductivity of the core, $\lambda_{Declared}$:	0.022					W/mK	
Reaction to fire:	B-s1, d0					Class	(EN 13501-1)
Fire resistance (wall):	EI 30			EI 60		Class	(EN 13501-2)
Fire resistance (ceiling):	EI 30					Class	
External fire performance:	Not applicable						
Water permeability:	A	A	A	A	A	Class	(EN 12865)
Air permeability:	\leq 1,5	\leq 1,5	\leq 1,5	\leq 1,5	\leq 1,5	m ³ /m ² h	(EN 12114)
Water vapour permeability:	Impermeable						
Airborne sound insulation, R _w (C; C _v):	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	dB	(EN ISO 717-1)
Sound absorption, α_w :	0.10	0.10	0.10	0.10	0.10		(EN ISO 11654)
Durability:	Pass - all colours						

* Profiling L25 is available only at thicknesses 120, 140 and 160 mm.

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

Attachment 4 to Declaration of Performance 30/X-PIR/OBO

Panel type		SP2B X-PIR				
Reference to harmonized standard:	EN 14509:2013					
Year when CE mark was affixed:	15					
Intended use:	Internal or external walls, ceilings					
Panel thickness:	40	60	80	100	Reference	
Thickness of external facing:	0,50 - 0,70				mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140					(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS \leq 4,0 MJ/m ²					(EN 10169)
External facing profile:	L25*, L, M, F, P, R28, R275, R550					
Thickness of internal facing:	0,40 - 0,60				mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+Z100 S280GD+ZM140, S280GD+ZM100					(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS \leq 4,0 MJ/m ²					(EN 10169)
Internal facing profile:	L25*, L, F					
Core material:	PIR					
Density of core material:	39				kg/m ³	
Mass:	9.5	10.3	11.2	12.1	kg/m ²	
Mechanical resistance:						
Tensile strength:	0.09	0.09	0.10	0.10	MPa	
Shear strength:	0.10	0.10	0.10	0.10	MPa	
Reduced long term shear strength:	0.04	0.04	0.04	0.04	MPa	
Shear modulus (core):	3.00	3.00	3.00	3.00	MPa	
Compressive strength (core):	0.10	0.10	0.10	0.10	MPa	
Creep coefficient t=2000h:	2.4	2.4	2.4	2.4		
Creep coefficient t=10000h:	7.0	7.0	7.0	7.0		
Wrinkling strength (external face) at profiling L25*:						
- in span	-	-	165	165	MPa	
- in span, elevated temperature	-	-	150	150	MPa	
- at internal support	-	-	130	130	MPa	
- at internal support, elevated temperature	-	-	115	115	MPa	
Wrinkling strength (external face) at profiling L, M:						
- in span	120	120	150	150	MPa	
- in span, elevated temperature	108	108	135	135	MPa	
- at internal support	110	110	124	124	MPa	
- at internal support, elevated temperature	99	99	111	111	MPa	
Wrinkling strength (external face) at profiling F, P, 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	MPa	
- at internal support	-	-	130	130	MPa	
Wrinkling strength (internal face) at profiling L:						
- in span	120	120	150	150	MPa	
- at internal support	110	110	124	124	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} *:	0.56	0.36	0.27	0.22	W/m ² K	
Thermal conductivity of the core, $\lambda_{\text{Declared}}$:	0.022				W/mK	
Reaction to fire:	B-s2, d0			B-s1, d0	Class	(EN 13501-1)
Fire resistance (wall):	EW 30	EW 30	EI 15	EI 30	Class	(EN 13501-2)
Fire resistance (ceiling):	NPD			EI 30	Class	
External fire performance:	Not applicable					
Water permeability:	A	A	A	A	Class	(EN 12865)
Air permeability:	\leq 1,5	\leq 1,5	\leq 1,5	\leq 1,5	m ³ /m ² h	(EN 12114)
Water vapour permeability:	Impermeable					
Airborne sound insulation, R _w (C; C _v):	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	dB	(EN ISO 717-1)
Sound absorption, α_w :	0.10	0.10	0.10	0.10		(EN ISO 11654)
Durability:	Pass - all colours					

* Profiling L25 is available only at thicknesses 80 and 100 mm.

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

Attachment 5 to Declaration of Performance 30/X-PIR/OBO

Panel type	SP2D X-PIR				
Reference to harmonized standard:	EN 14509:2013				
Year when CE mark was affixed:	15				
Intended use:	Internal or external walls				
Panel thickness:	60	80	100	120	Reference
Thickness of external facing:	0,50 - 0,70				mm (EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140				(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS $\leq 4,0 \text{ MJ/m}^2$				(EN 10169)
External facing profile:	L, M, F, P, R28				
Thickness of internal facing:	0,40 - 0,60				mm (EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+Z100 S280GD+ZM140, S280GD+ZM100				(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS $\leq 4,0 \text{ MJ/m}^2$				(EN 10169)
Internal facing profile:	L, F				
Core material:	PIR				
Density of core material:	39				kg/m ³
Mass:	10.4	11.2	12.0	12.8	kg/m ²
Mechanical resistance:					
Tensile strength:	0.10	0.10	0.10	0.10	MPa
Shear strength:	0.10	0.10	0.10	0.10	MPa
Reduced long term shear strength:	0.04	0.04	0.04	0.04	MPa
Shear modulus (core):	3.00	3.00	3.00	3.00	MPa
Compressive strength (core):	0.10	0.10	0.10	0.10	MPa
Creep coefficient t=2000h:	2.4	2.4	2.4	2.4	
Creep coefficient t=100000h:	7.0	7.0	7.0	7.0	
Wrinkling strength (external face) at profiling L, M:					
- in span	150	150	150	150	MPa
- in span, elevated temperature	135	135	135	135	MPa
- at internal support	124	124	124	124	MPa
- at internal support, elevated temperature	111	111	111	111	MPa
Wrinkling strength (external face) at profiling F, P, R28:					
- in span	120	120	120	120	MPa
- in span, elevated temperature	108	108	108	108	MPa
- at internal support	110	110	110	110	MPa
- at internal support, elevated temperature	99	99	99	99	MPa
Wrinkling strength (internal face) at profiling L:					
- in span	150	150	150	150	MPa
- at internal support	124	124	124	124	MPa
Wrinkling strength (internal face) at profiling F:					
- in span	110	110	110	110	MPa
- at internal support	110	110	110	110	MPa
Other properties:					
Thermal transmittance, $U_{d,s}$:	0.38	0.28	0.22	0.18	W/m ² K
Thermal conductivity of the core, $\lambda_{\text{Declared}}$:	0.022				W/mK
Reaction to fire:	B-s2, d0		B-s1, d0		Class (EN 13501-1)
Fire resistance:	EW 30	EI 15 / EW 30			Class (EN 13501-2)
External fire performance:	Not applicable				
Water permeability:	A	A	A	A	Class (EN 12865)
Air permeability:	$\leq 1,5$	$\leq 1,5$	$\leq 1,5$	$\leq 1,5$	m ³ /m ² h (EN 12114)
Water vapour permeability:	Impermeable				
Airborne sound insulation, $R_w(C; C_{tr})$:	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	dB (EN ISO 717-1)
Sound absorption, α_w :	0.10	0.10	0.10	0.10	(EN ISO 11654)
Durability:	Pass - all colours				

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

Attachment 6 to Declaration of Performance 30/X-PIR/OBO

Panel type		SP2E X-PIR					
Reference to harmonized standard:	EN 14509:2013						
Year when CE mark was affixed:	15						
Intended use:	Internal or external walls, ceilings						
Panel thickness:	120	140	160	180	200	Reference	
Thickness of external facing:	0,50 - 0,70					mm	(EN 10143)
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140						(EN 10346)
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS \leq 4,0 MJ/m ²						(EN 10169)
External facing profile:	L25*, L, M, F, R28, R275, R550						
Thickness of internal facing:	0,40 - 0,60					mm	(EN 10143)
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+Z100 S280GD+ZM140, S280GD+ZM100						(EN 10346)
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS \leq 4,0 MJ/m ²						(EN 10169)
Internal facing profile:	L25*, L, F						
Core material:	PIR						
Density of core material:	39					kg/m ³	
Mass:	13.8	14.7	15.5	16.4	17.3	kg/m ²	
Mechanical resistance:							
Tensile strength:	0.10	0.10	0.10	0.10	0.10	MPa	
Shear strength:	0.10	0.10	0.10	0.095	0.09	MPa	
Reduced long term shear strength:	0.04	0.04	0.04	0.038	0.036	MPa	
Shear modulus (core):	3.00	3.00	2.65	2.47	2.30	MPa	
Compressive strength (core):	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		
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	125	125	125	-	-	MPa	
- at internal support, elevated temperature	110	110	110	-	-	MPa	
Wrinkling strength (external face) at profiling L, M:							
- in span	150	150	135	135	135	MPa	
- in span, elevated temperature	135	135	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	130	130	130	-	-	MPa	
Wrinkling strength (internal face) at profiling L:							
- in span	150	150	135	135	135	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	0.16	0.14	0.12	0.11	W/m ² K	
Thermal conductivity of the core, $\lambda_{Declared}$:	0.022					W/mK	
Reaction to fire:	B-s1, d0					Class	(EN 13501-1)
Fire resistance (wall):	EI 30			EI 60		Class	(EN 13501-2)
Fire resistance (ceiling):	EI 30					Class	
External fire performance:	Not applicable						
Water permeability:	A	A	A	A	A	Class	(EN 12865)
Air permeability:	\leq 1,5	\leq 1,5	\leq 1,5	\leq 1,5	\leq 1,5	m ³ /m ² h	(EN 12114)
Water vapour permeability:	Impermeable						
Airborne sound insulation, R _w (C; C _v):	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	dB	(EN ISO 717-1)
Sound absorption, α_w :	0.10	0.10	0.10	0.10	0.10		(EN ISO 11654)
Durability:	Pass - all colours						

* Profiling L25 is available only at thicknesses 120, 140 and 160 mm.

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

Attachment 7 to Declaration of Performance 30/X-PIR/OBO

Panel type	SP2C X-PIR								
Reference to harmonized standard:	EN 14509:2013								
Year when CE mark was affixed:	15								
Intended use:	Roof panel								
Panel thickness:	80/40	100/60	120/80	140/100	160/120	210/170	Reference		
Thickness of external facing:	0,50 - 0,70						mm	(EN 10143)	
External facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+ZM140							(EN 10346)	
Coating of external facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS $\leq 4,0 \text{ MJ/m}^2$							(EN 10169)	
External facing profile:	T								
Thickness of internal facing:	0,40 - 0,60						mm	(EN 10143)	
Internal facing - steel grade:	S280GD+Z275, S280GD+Z190, S280GD+Z100 S280GD+ZM140, S280GD+ZM100							(EN 10346)	
Coating of internal facing:	Polyester, Hiarc, Hiarc max, Csafe, PVC or other colour coating with PCS $\leq 4,0 \text{ MJ/m}^2$							(EN 10169)	
Internal facing profile:	L, F								
Core material:	PIR								
Density of core material:	39						kg/m ³		
Mass:	9.7	10.5	11.3	12.1	12.9	14.9	kg/m ²		
Mechanical resistance:									
Tensile strength:	0.10	0.10	0.10	0.10	0.10	0.09	MPa		
Shear strength:	0.10	0.10	0.10	0.10	0.10	0.09	MPa		
Reduced long term shear strength:	0.04	0.04	0.04	0.04	0.04	0.036	MPa		
Shear modulus (core):	3.00	3.00	3.00	3.00	3.00	2.00	MPa		
Compressive strength (core):	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			
Creep coefficient t=100000h:	7.0	7.0	7.0	7.0	7.0	7.0			
Wrinkling strength (external face) at profiling T:									
- in span	280	270	260	250	250	215	MPa		
- in span, elevated temperature	280	270	260	250	250	215	MPa		
- at internal support	260	250	240	230	230	200	MPa		
- at internal support, elevated temperature	260	250	240	230	230	200	MPa		
Wrinkling strength (internal face) at profiling L, F:									
- in span	145	140	135	130	130	109	MPa		
- at internal support	105	105	105	99	99	87	MPa		
Other properties:									
Thermal transmittance, $U_{d,s}$:	0.50	0.34	0.26	0.21	0.18	0.13	W/m ² K		
Thermal conductivity of the core, $\lambda_{\text{Declared}}$:	0.022						W/mK		
Reaction to fire:	B-s2, d0			B-s1, d0			Class	(EN 13501-1)	
Fire resistance:	REI 20 / RE 30		REI 30 / RE 60				Class	(EN 13501-2)	
External fire performance:	Broof						Class		
Water permeability:	A	A	A	A	A	A	Class	(EN 12865)	
Air permeability:	$\leq 1,5$	$\leq 1,5$	$\leq 1,5$	$\leq 1,5$	$\leq 1,5$	$\leq 1,5$	m ³ /m ² h	(EN 12114)	
Water vapour permeability:	Impermeable								
Airborne sound insulation, $R_w(C; C_{tr})$:	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	24 (-2; -4)	dB	(EN ISO 717-1)	
Sound absorption, α_w :	0.10	0.10	0.10	0.10	0.10	0.10		(EN ISO 11654)	
Durability:	Pass - all colours								

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