

DECLARATION OF PERFORMANCE No: 04/2021

1. Name and unique identification of the construction product type:

Marcegaglia sandwich panels in steel cladding with a core of polyisocyanurate rigid foam
PIR **100L** of thickness: 50, 60, 80, 100, 120 and 150 mm.

2. Intended use or uses:

Insulating-structural sandwich panels in steel cladding are designed for use in buildings as external
walls, internal walls and ceilings.

3. Name and registered address of the manufacturer and place of manufacture of the product:

MARCEGAGLIA POLAND Sp. z o.o.; ul. Kaliska 72; 46 - 320 Praszka
Production Plant in Praszka; ul. Kaliska 72; 46 - 320 Praszka

4. Name and registered address of the authorized representative: Not applicable.

5. Application system for assessment and verification of constancy of performance:

Conformity assessment system 3

6. Harmonized standard:

PN – EN 14509:2013-12

Notified bodies involved in product type testing.

INSTITUTE OF BUILDING TECHNOLOGY in Warsaw No. 1488

FIRES s.r.o. Batizovce No. 1396

CERT-BUD in Warsaw No. 2310

The performance characteristics of the product specified above are in accordance with all the declared performance characteristics listed in subsection 7. This declaration of performance has been issued in accordance with regulation (EU) No. 305/2011 under the sole responsibility of the manufacturer.

7. Declared performance:

Appendix 1

Registered seat:

Marcegaglia Poland Sp. z o.o.
ul. Kaliska 72 • 46-320 Praszka - Poland
C. S. : 108.400.000,00 zł • KRS 0000221496
NIP PL 5761485249 • Regon 532467246

MARCEGAGLIA POLAND

Administration offices and Plant:

ul. Kaliska 72 • 46-320 Praszka - Poland • phone +48 . 34 . 350 15 00 • fax +48 . 34 . 350 15 01
poland@marcegaglia.com • www.marcegaglia.pl

Plant: Ligota Dolna - ul. Przemysłowa, 1 • 46-200 Kluczbork, Poland
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Appendix 1 to DoP No.04/2021

Product type	100 L					
Thickness	50	60	80	100	120	150
Insulation core	PIR					
Density [kg/m ³]	40 +/- 3					
Weight [kg/ m ²]	10,5	10,9	11,6	12,4	13,2	14,3
Application	WALLS					
Type and weight of metallic coatings	Z 100, Z 140, Z 187, Z 275					
Thickness of external cladding (tN1)	0,5					
Type of external coating /steel grade	MP1,MP3,MP20,PVC,PVDF, INOX/S 280GD,DX51D					
Thickness of internal cladding (tN1)	0,5					
Type of internal coating / steel grade	MP1,MP3,MP20,PVC,PVDF, INOX/S 280GD,DX51D					
Thermal conductivity coefficient λd (W/mK)	0,022					
Thermal transmittance coefficient Ud, S (W/mK)	0,45	0,37	0,27	0,22	0,18	0,15
Mechanical resistance						
Tensile strength	≥ 0,100 [MPa]					
Shear strength	≥ 0,100 [MPa]					
Shear modulus of elasticity (core)	≥ 2,00 [MPa]					
Compressive strength (core):	0,095 ÷ 0,230 [MPa]					
Bending resistance in the span						
positive bending [kNm/m]	1,91	2,29	3,78	4,73	5,68	7,41
positive bending - elevated temperature [kNm/m]	0,78	0,94	1,55	1,94	2,33	3,04
negative bending [kNm/m]	1,80	2,16	3,40	4,25	5,10	6,59
negative bending - elevated temperature [kNm/m]	0,74	0,89	1,39	1,74	2,09	2,7
Bending resistance at an internal support						
positive bending [kNm/m]	2,66	3,20	3,22	4,63	5,56	6,96
positive bending - elevated temperature [kNm/m]	1,09	1,31	1,32	1,9	2,28	2,85
negative bending [kNm/m]	1,95	2,34	3,33	3,93	4,72	5,9
negative bending - elevated temperature [kNm/m]	0,8	0,96	1,37	1,61	1,94	2,42
Wrinkling strength (external face)						
in the span (MPa)	77	77	95	95	95	99
in the span - elevated temperature (MPa)	31,57	31,57	38,95	38,95	38,95	40,59
at a support for suction loads (MPa)	79	79	84	79	79	79
at a support for suction loads - elevated temperature (MPa)	32,39	32,39	34,44	32,39	32,39	32,39
Wrinkling strength (internal face)						
in the span (MPa)	73	73	85	85	85	88
at an internal support for loads pressing on a support (MPa)	107	107	81	93	93	93
Reaction to fire	Bs2d0			Bs1d0		
Fire resistance	Horizontal	NPD		EI 15		
	Vertical	NPD	EI 15		EI 30	
External fire performance	*					
Water permeability	A					
Air permeability	no leakage					
Airborne sound insulation	26 (-3; -4)					
Sound absorption	0,15					
Durability	satisfactory for all colors					

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Product type	100 L					
Thickness	50	60	80	100	120	150
Insulation core	PIR					
Density [kg/m ³]	40 +/- 3					
Weight [kg/ m ²]	9,63	10,01	10,77	11,53	12,29	13,43
Application	WALLS					
Type and weight of metallic coatings	Z 100, Z 140, Z 187, Z 275					
Thickness of external cladding (tN1)	0,5					
Type of external coating /steel grade	MP1,MP3,MP20,PVC,PVDF, INOX/S 280GD,DX51D					
Thickness of internal cladding (tN1)	0,4					
Type of internal coating / steel grade	MP1,MP3,MP20,PVC,PVDF, INOX/S 280GD,DX51D					
Thermal conductivity coefficient λd (W/mK)	0,022					
Thermal transmittance coefficient Ud, S (W/mK)	0,45	0,37	0,27	0,22	0,18	0,15
Mechanical resistance						
Tensile strength	≥ 0,100 [MPa]					
Shear strength	≥ 0,100 [MPa]					
Shear modulus of elasticity (core)	≥ 2,00 [MPa]					
Compressive strength (core):	0,095 ÷ 0,230 [MPa]					
Bending resistance in the span						
positive bending [kNm/m]	2,28	2,74	4,26	5,33	6,40	4,76
positive bending - elevated temperature [kNm/m]	0,93	1,12	1,75	2,19	2,62	1,95
negative bending [kNm/m]	2,01	2,42	2,62	3,28	3,94	3,3
negative bending - elevated temperature [kNm/m]	0,82	0,98	1,07	1,34	1,62	1,35
Bending resistance at an internal support						
positive bending [kNm/m]	2,00	2,40	3,01	3,77	4,53	4,82
positive bending - elevated temperature [kNm/m]	0,82	0,99	1,23	1,55	1,86	1,98
negative bending [kNm/m]	1,74	2,09	2,92	3,65	4,38	4,96
negative bending - elevated temperature [kNm/m]	0,71	0,86	1,2	1,5	1,8	2,03
Wrinkling strength (external face)						
in the span (MPa)	115	115	134	134	134	80
in the span - elevated temperature (MPa)	47,15	47,15	54,94	54,94	54,94	32,8
at a support for suction loads (MPa)	88	88	92	92	92	83
at a support for suction loads - elevated temperature (MPa)	36,08	36,08	37,72	37,72	37,72	34,03
Wrinkling strength (internal face)						
in the span (MPa)	101	101	82	82	82	55
at an internal support for loads pressing on a support (MPa)	101	101	95	95	95	81
Reaction to fire	Bs2d0					
Fire resistance	Horizontal	NPD			EI 15	
	Vertical	NPD	EI 15		EI 30	
External fire performance	*					
Water permeability	A					
Air permeability	no leakage					
Airborne sound insulation	26 (-3; -4)					
Sound absorption	0,15					
Durability	satisfactory for all colors					

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Product type	100 L					
Thickness	50	60	80	100	120	150
Insulation core	PIR					
Density [kg/m ³]	40 +/- 3					
Weight [kg/ m ²]	8,76	9,14	9,9	10,64	11,42	12,56
Application	WALLS					
Type and weight of metallic coatings	Z 100, Z 140, Z 187, Z 275					
Thickness of external cladding (tN1)	0,4					
Type of external coating / steel grade	MP1,MP3,MP20,PVC,PVDF, INOX/S 280GD,DX51D					
Thickness of internal cladding (tN1)	0,4					
Type of internal coating / steel grade	MP1,MP3,MP20,PVC,PVDF, INOX/S 280GD,DX51D					
Thermal conductivity coefficient λd (W/mK)	0,022					
Thermal transmittance coefficient Ud, S (W/mK)	0,45	0,37	0,27	0,22	0,18	0,15
Mechanical resistance						
Tensile strength	≥ 0,100 [MPa]					
Shear strength	≥ 0,100 [MPa]					
Shear modulus of elasticity (core)	≥ 2,00 [MPa]					
Compressive strength (core):	0,095 ÷ 0,230 [MPa]					
Bending resistance in the span						
positive bending [kNm/m]	2,18	2,61	4,05	5,07	6,09	4,53
positive bending - elevated temperature [kNm/m]	0,89	1,07	1,66	2,08	2,5	1,86
negative bending [kNm/m]	2,01	2,42	2,62	3,28	3,94	3,3
negative bending - elevated temperature [kNm/m]	0,82	0,99	1,07	1,34	1,62	1,35
Bending resistance at an internal support						
positive bending [kNm/m]	2,00	2,40	3,01	3,77	4,53	4,82
positive bending - elevated temperature [kNm/m]	0,82	0,98	1,23	1,55	1,86	1,98
negative bending [kNm/m]	1,58	1,90	2,65	3,32	3,99	4,73
negative bending - elevated temperature [kNm/m]	0,65	0,78	1,09	1,36	1,64	1,94
Wrinkling strength (external face)						
in the span (MPa)	110	110	127	127	127	76
in the span - elevated temperature (MPa)	45,1	45,1	52,07	52,07	52,07	31,16
at a support for suction loads (MPa)	80	80	83	83	83	79
at a support for suction loads - elevated temperature (MPa)	32,8	32,8	34,03	34,03	34,03	32,39
Wrinkling strength (internal face)						
in the span (MPa)	101	101	82	82	82	55
at an internal support for loads pressing on a support (MPa)	101	101	95	95	95	81
Reaction to fire	Bs2d0					
Fire resistance	Horizontal	NPD		EI 15		
	Vertical	NPD	EI 15	EI 30		
External fire performance	*					
Water permeability	A					
Air permeability	no leakage					
Airborne sound insulation	26 (-3; -4)					
Sound absorption	0,15					
Durability	satisfactory for all colors					

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Additional performance characteristics not included in the list of characteristics according to the PN-EN 14509 NRO standard - fire classification with regard to lack of fire propagation through walls when exposed to fire from the outside in accordance with the PN-B-02867:2013-06 standard

PRASZKA, 20.12.2021
(place and date of issue)

MARCEGAGLIA POLAND Sp. z o.o.

Filippo Nicoli
Członek Zarządu

(name and signature of authorized person)

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