MARCEGAGLIA
CARBON STEEL

DECLARATION OF PERFORMANCE No: 06/2021 rev. 2 from 04.08.2023

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

Marcegaglia sandwich panels in steel cladding with a core of polyisocyanurate rigid foam PIR 115G 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

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
phone +48 . 77 . 45 98 200 • fax +48 . 77 . 45 98 201 • kluczbork@marcegaglia.com

MARCEGAGLIA
CARBON STEEL

Appendix 1 to DoP No. 06/2021 rev. 2 from 04.08.2023

Product type		115G					
Thickness, d_N, [mm]		50	60	80	100	120	150
Insulation core		PIR					
Density, [kg/m^3]		40 +/- 3					
Weight, [kg/m^2]		12,1	12,5	13,4	14,2	15,1	16,4
Application		WALLS					
Type and weight of metallic coatings		Z 100, Z 140, Z 187, Z 275					
Thickness of external cladding, t_{N1}, [mm]		0,5					
Type of external coating / steel grade		MP1, MP3, MP20 ,PVC, PVDF, INOX/S 280GD, DX51D					
Thickness of internal cladding, t_{N2}, [mm]		0,5					
Type of internal coating / steel grade		MP1, MP3, MP20, PVC, PVDF, INOX/S 280GD, DX51D					
Thermal conductivity coefficient, λ_D, [W/mK]		0,022					
Thermal transmittance coefficient, $U_{d,S}$, [W/m^{2}K]		0,45	0,37	0,27	0,22	0,18	0,15
Mechanical resistance							
Tensile strength, f_{Ct}, [MPa]		≥ 0,100					
Shear strength, f_{Cv}, [MPa]		≥ 0,100					
Shear modulus of elasticity (core), G_C, [MPa]		≥ 2,00					
Compressive strength (core), f_{Cc}, [MPa]		0,095 ÷ 0,230					
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 cladding)							
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 cladding)							
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		Bs-2, d0			Bs-1, d0		
Fire resistance	Horizontal	NPD		EW 20/EI 20	EW 30/EI 30		
	Vertical	NPD			EW 30/EI 15	EW 30/EI 30	
External fire performance		*					
Water permeability		A					
Air permeability, pressure, C, [m^3/(hPa^n); n		0,0285; 0,6406					
Air permeability, suction, C, [m^3/(hPa^n); n		0,0525; 0,5402					
Water vapor permeability		PASS					
Airborne sound insulation, Rw(C;C_{tr}), [dB]		26 (-3; -4)					
Sound absorption, α_w		0,15					
Durability		PASS - all colors					

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
phone +48 . 77 . 45 98 200 • fax +48 . 77 . 45 98 201 • kluczbork@marcegaglia.com

MARCEGAGLIA
CARBON STEEL

Product type		115G					
Thickness, d_N, [mm]		50	60	80	100	120	150
Insulation core		PIR					
Density, [kg/m^3]		40 +/- 3					
Weight, [kg/m^2]		11,7	11,51	12,38	13,25	14,12	15,43
Application		WALLS					
Type and weight of metallic coatings		Z 100, Z 140, Z 187, Z 275					
Thickness of external cladding, t_{N1}, [mm]		0,5					
Type of external coating / steel grade		MP1, MP3, MP20, PVC, PVDF, INOX/S 280GD, DX51D					
Thickness of internal cladding, t_{N2}, [mm]		0,4					
Type of internal coating / steel grade		MP1, MP3, MP20, PVC, PVDF, INOX/S 280GD, DX51D					
Thermal conductivity coefficient, λ_D, [W/mK]		0,022					
Thermal transmittance coefficient, $U_{d,S}$, [W/m^{2}K]		0,45	0,37	0,27	0,22	0,18	0,15
Mechanical resistance							
Tensile strength, f_{Ct}, [MPa]		≥ 0,100					
Shear strength, f_{Cv}, [MPa]		≥ 0,100					
Shear modulus of elasticity (core), G_C, [MPa]		≥ 2,00					
Compressive strength (core), f_{Cc}, [MPa]		0,095 ÷ 0,230					
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 cladding)							
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 cladding)							
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		Bs-2, d0					
Fire resistance	Horizontal	NPD		EW 20/EI 20	EW 30/EI 30		
	Vertical	NPD			EW 30/EI 15	EW 30/EI 30	
External fire performance		*					
Water permeability		A					
Air permeability, pressure, C, [m^3/(hPa^n); n		0,0285; 0,6406					
Air permeability, suction, C, [m^3/(hPa^n); n		0,0525; 0,5402					
Water vapor permeability		PASS					
Airborne sound insulation, Rw(C;C_{tr}), [dB]		26 (-3; -4)					
Sound absorption, α_w		0,15					
Durability		PASS - all colors					

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
phone +48 . 77 . 45 98 200 • fax +48 . 77 . 45 98 201 • kluczbork@marcegaglia.com

MARCEGAGLIA
CARBON STEEL

Product type		115G					
Thickness, d_N, [mm]		50	60	80	100	120	150
Insulation core		PIR					
Density, [kg/m^3]		40 +/- 3					
Weight, [kg/m^2]		10,08	10,52	11,39	12,26	13,13	14,44
Application		WALLS					
Type and weight of metallic coatings		Z 100, Z 140, Z 187, Z 275					
Thickness of external cladding, t_{N1}, [mm]		0,4					
Type of external coating / steel grade		MP1,MP3,MP20,PVC,PVDF, INOX/S 280GD,DX51D					
Thickness of internal cladding, t_{N2}, [mm]		0,4					
Type of internal coating / steel grade		MP1,MP3,MP20,PVC,PVDF, INOX/S 280GD,DX51D					
Thermal conductivity coefficient, λ_D, [W/mK]		0,022					
Thermal transmittance coefficient, $U_{d,s}$, [W/m^{2}K]		0,45	0,37	0,27	0,22	0,18	0,15
Mechanical resistance							
Tensile strength, f_{Ct}, [MPa]		≥ 0,100					
Shear strength, f_{Cv}, [MPa]		≥ 0,100					
Shear modulus of elasticity (core), G_C, [MPa]		≥ 2,00					
Compressive strength (core), f_{Cc}, [MPa]		0,095 ÷ 0,230					
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 cladding)							
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 cladding)							
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		Bs-2, d0					
Fire resistance	Horizontal	NPD		EW 20/EI 20	EW 30/EI 30		
	Vertical	NPD			EW 30/EI 15	EW 30/EI 30	
External fire performance		*					
Water permeability		A					
Air permeability, pressure, C, [m^3/(hPa^n); n		0,0285; 0,6406					
Air permeability, suction, C, [m^3/(hPa^n); n		0,0525; 0,5402					
Water vapor permeability		PASS					
Airborne sound insulation, Rw(C;C_{tr}), [dB]		26 (-3; -4)					
Sound absorption, α_w		0,15					
Durability		PASS – all colors					

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
phone +48 . 77 . 45 98 200 • fax +48 . 77 . 45 98 201 • kluczbork@marcegaglia.com

MARCEGAGLIA
CARBON STEEL

*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 standard.

Filippo Nicoli
Digitally signed by Filippo Nicoli
Date: 2023.08.05 10:44:55 +02'00'

PRASZKA, 04.08.2023
(place and date of issue)

.....
(name and signature of authorized person)

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
phone +48 . 77 . 45 98 200 • fax +48 . 77 . 45 98 201 • kluczbork@marcegaglia.com