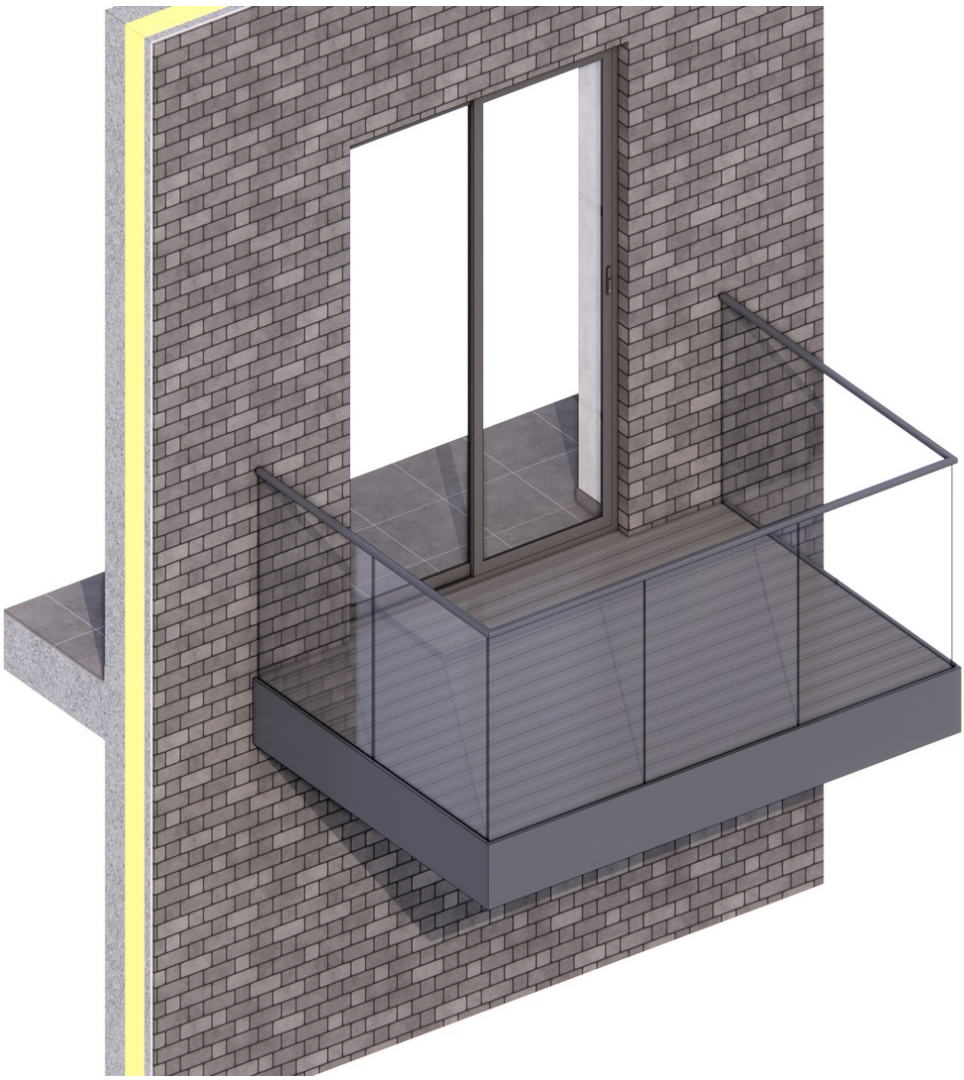
ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN15804+A2

Forte Pespa Balcony Glass 7m2



Owner of the declaration:
Forte Pespa

Product:
Forte Pespa Balcony Glass 7m2

Declared unit:
1 pcs

This declaration is based on Product Category Rules:
EN 15804:2012+A2:2019, EPD Ireland PCR Part A, Version 2.1, 2022
EPD Ireland PCR Part A, Version 2.1, 2022

Program operator:
EPD Ireland - Irish Green Building Council

Declaration number:
EPDIE-25-218

Issue date:
29.08.2025

Valid to:
28.08.2030

General information

Product

Forte Pespa Balcony Glass 7m2

Owner of the declaration:

Forte Pespa
Contact person: Administration
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e-mail: info@fortepespa.ie

Program operator:

EPD Ireland - Irish Green Building Council
19 Mountjoy Square, Dublin D01 E8P5
Phone: +353 (01) 6815862
web: https://www.igbc.ie/epd-home/

Manufacturer:

Forte Pespa

Declaration number:

EPDIE-25-218

Place of production:

Forte Pespa
Greenogue Business Park, 623 Jordanstown Ave
D24 A9RW Jordanstown, Rathcoole, Co. Dublin, Ireland

This declaration is based on Product Category Rules:

EN 15804:2012+A2:2019, EPD Ireland PCR Part A, Version 2.1, 2022
EPD Ireland PCR Part A, Version 2.1, 2022

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. The EPD Program operator shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Type of EPD

Specific product EPD

Issue date:

29.08.2025

Declared unit:

1 pcs Forte Pespa Balcony Glass 7m2

Valid to:

28.08.2030

Scope of the EPD:

A1, A2, A3, A4, A5, C1, C2, C3, C4, D

Year of study:

2023

Functional unit:

One Glass balcony 7m2

Comparability:

Environmental Product Declarations from different programmes may not be directly comparable if not compliant with EN 15804:2012+A2:2019. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See clause 5.3 of EN 15804:2012+A2:2019

LCA consultant or person responsible for LCA:
EcoReview, Peter Seymour

Verification:

Independent verification of the declaration and data, according to ISO14025:2010

Approved:

SIGNATURE OF PROGRAMME OPERATOR

Third party verifier:
Stephen Forson

Pat Barry, CEO - Irish Green Building Council

Product

Product description:

The main components of the balcony are extruded/powder-coated aluminium profiles, vertical rails or glass panels and fixing elements, pre-fabricated to form a single balcony systems, with either an aluminium front rail or a glass front balustrade panel. The balcony systems are pre-fabricated in the factory, and then attached to the building on-site, with additional steel brackets and other steel fixing components. They have an integrated floor and soffit, with non-slip aluminium decking profiles and modular soffit boards creating a unified, maintenance-free finish. The raw materials comprise, by weight: glass 67%; extruded aluminium 31%; plastic 2 %; metal screws/bolts <1%.

They are suitable for residential apartments, commercial buildings, and mixed-use developments. The cantilevered balcony has minimal impact on existing building structures. They are lightweight and made entirely of fully recyclable materials.

Product specification:

Designed and manufactured in accordance with BS EN 1999 (Eurocode 9), BS EN 1090-1, BS 8579, and BS 6180. Balcony system components are CE/UKCA marked, fire-rated to Class A2-s1, d0 per BS EN 13501-1, and compliant with Part K and Part B of the Building Regulations (UK and Ireland).

Technical data:

The aluminium raw materials that are used to make the extruded profiles used in the balcony is specially selected to come from low-carbon sources. The mean CO2-eq footprint of the aluminium raw material is in the order of 4.7 kg C02 per kg (excluding extrusion and post-extrusion processing).

Market/Geographical Area:

Supplied to customers throughout the island of Ireland.

Reference service life, product

50 years

Reference service life, building or construction works

LCA: Calculation rules

Declared unit:

1 pcs Forte Pespa Balcony Glass 7m2

kg per Declared unit 891

Cut-off criteria:

All relevant inputs and outputs - like emissions, energy and materials - have been taken into account in this LCA, and in accordance with EN15804+A2:2019. The study covers at least 95% of the materials and energy per module and at least 99% of the total use of materials and energy of each unit process. Long term emissions have been excluded from the study.

Allocation:

The measurement of environmental impacts in this EPD uses the LCIA methodologies recommended for PEF 3.1. In this EPD, the waste processes are allocated in the relevant module. In the case of the use of secondary materials or energy recovered from secondary fuels, the system boundary between the system under study and the previous system (providing the secondary materials) is set where outputs of the previous system, e.g. materials, products, building elements or energy, reach the end-of-waste state. The modularity and the polluter payer principles have been followed.

Data quality:

Time Representativeness: In this LCA the data relating to the usages, emissions and materials, and the data relating to the bespoke background processes for environmental impacts are less than 2 years apart, and also the Ecoinvent database version 3.9.1. Time Representativeness is considered to be Very good.

Geographical Representativeness: The processes used in the production of the balconies are geographically representative, insofar as the production location (Ireland) lies within the region for which the relevant Ecoinvent (version 3.9.1) environmental records have been selected. The dataset is up-to-date and representative for the current technology used in the processes of manufacturing the products. Geographical Representativeness is considered to be Very good.

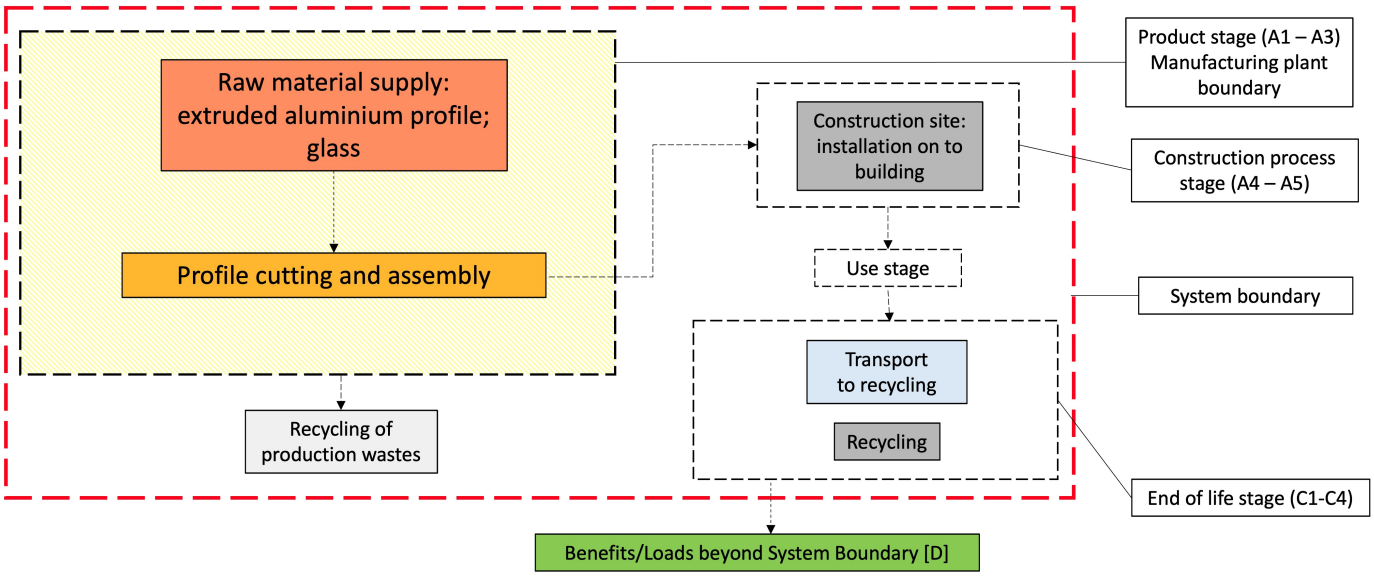
Technical Representativeness: Processes and energies used in the process have been modelled exactly as described by Forte Pespa, and are based directly on the production data supplied by Forte Pespa, in relation to processes, fuels used and emissions, and without any significant need for improvement. Technical Representativeness is considered to be Very good.

Scope and type of EPD (X = Module declared; ND = Module not declared)

Product stage			Construction installation stage		Use stage							End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

System boundary:

This LCA covers the Product (A1, A2 and A3), Construction (A4, A5) End of Life (C1 to C4) and Benefits/loads beyond the system boundary (D) Stages, as indicated above. This is termed: "Cradle to gate with options, modules C1 to C4, and module D". A schematic of these stages is presented in the flow diagram below.



Additional technical information:

Electricity modelling
Electricity is supplied from the grid, and is modelled as the Residual Mix for Ireland. The CO2 intensity of the electricity is 0.659 kg CO2eq per kWh.

LCA: Scenarios and additional technical information

The following information describes the scenarios in the different modules of the EPD.

A4. Transport
Transport is by road truck to site. Mean diesel consumption for transport to site for the 7m2 balcony is 3.94 litres per unit.

A5. Installation
Installation materials are steel brackets, beam and connectors. The weight of these for the 7m2 unit is 480.5 kg. Crane energy diesel use per unit installation is 8 litres of diesel.

C. End of Life Stage
C1. De-construction demolition
Deconstruction by a medium-capacity mobile crane is 8 litres of diesel per balcony unit.

C2. Transport
Transport of materials from site to recycling processing is assumed to be 50km.

C3. Waste processing
Waste processing is the treatment at the waste recycling plant of the waste steel, aluminium and glass. It is assumed that 100% of these materials are recycled.

C4. Disposal
No disposal of materials occurs. 100% of materials are recovered and recycled.

D. Reuse, Recovery, Recycling potential
As all the aluminium, steel and glass is recycled, these replace the manufacture and production of primary aluminium, steel and glass, in accordance with the amount of primary virgin raw materials contained within them. Recycled material in the raw materials do not count for replacement of primary raw materials in the next life cycle.

Biogenic Carbon
These is no Biogenic Carbon in the product.

Database used: Ecoinvent v 3.9.1

LCA tool used: Ecochain Helix v 4.3.1

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact												
Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	GWP-total	kg CO_2 -eq	2.85E+03	3.17E+01	1.94E+01	1.45E+01	4.00E+03	2.93E+01	8.33E+00	2.53E+02	0.00E+00	-3.50E+03
	GWP-fossil	kg CO_2 -eq	1.38E+03	3.17E+01	1.83E+01	1.45E+01	3.88E+03	2.93E+01	8.32E+00	2.47E+02	0.00E+00	-3.43E+03
	GWP-biogenic	kg CO_2 -eq	9.93E+00	3.14E-02	1.04E+00	3.78E-03	1.15E+02	7.63E-03	8.25E-03	5.30E+00	0.00E+00	-2.05E+01
	GWP-luluc	kg CO_2 -eq	3.66E+00	1.54E-02	1.75E-02	1.60E-03	4.17E+00	3.23E-03	4.04E-03	2.58E-01	0.00E+00	-5.07E+01
	ODP	kg CFC11 -eq	6.83E-05	6.72E-07	3.92E-07	2.25E-07	4.26E-05	4.55E-07	1.77E-07	4.52E-06	0.00E+00	-8.45E-05
	AP	mol H+ -eq	1.77E+01	6.75E-02	9.48E-02	1.31E-01	2.04E+01	2.65E-01	1.77E-02	3.18E+00	0.00E+00	-2.07E+01
	EP-FreshWater	kg P -eq	1.13E-01	2.51E-04	6.05E-04	5.11E-05	1.65E-01	1.03E-04	6.59E-05	1.57E-02	0.00E+00	-1.53E-01
	EP-Marine	kg N -eq	2.12E+00	1.66E-02	1.67E-02	6.07E-02	3.65E+00	1.23E-01	4.36E-03	2.63E-01	0.00E+00	-2.89E+00
	EP-Terrestial	mol N -eq	2.47E+01	1.73E-01	1.82E-01	6.61E-01	4.06E+01	1.33E+00	4.54E-02	3.33E+00	0.00E+00	-3.30E+01
	POCP	kg NMVOC -eq	7.27E+00	1.05E-01	5.72E-02	1.96E-01	1.39E+01	3.95E-01	2.75E-02	1.08E+00	0.00E+00	-1.26E+01
	ADP-minerals&metals[1]	kg Sb-eq	1.75E-02	1.01E-04	1.29E-03	4.94E-06	7.73E-02	9.98E-06	2.65E-05	3.22E-02	0.00E+00	-1.04E-02
	ADP-fossil[1]	MJ	3.06E+04	4.38E+02	2.01E+02	1.85E+02	4.37E+04	3.74E+02	1.15E+02	2.76E+03	0.00E+00	-4.41E+04
	WDP[1]	m^3	6.76E+02	1.81E+00	1.40E+01	4.03E-01	9.28E+02	8.14E-01	4.76E-01	1.84E+02	0.00E+00	-2.86E+01

GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment: EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"
*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

Remarks on environmental impacts

Additional environmental impact indicators

Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	PM	Disease incidence	1.14E-04	2.29E-06	7.54E-07	3.66E-06	2.84E-04	7.38E-06	6.02E-07	1.58E-05	0.00E+00	-2.69E-04
	IRP[2]	kgBq U235 -eq	2.97E+01	2.22E-01	3.55E-01	3.79E-02	1.04E+02	7.65E-02	5.84E-02	7.56E+00	0.00E+00	-2.02E+02
	ETP-fw[1]	CTUe	4.66E+04	4.27E+02	8.00E+02	1.58E+02	1.52E+05	3.20E+02	1.12E+02	2.28E+04	0.00E+00	-7.39E+04
	HTP-c[1]	CTUh	2.81E-05	1.41E-08	2.05E-08	4.34E-09	2.00E-05	8.77E-09	3.71E-09	5.25E-07	0.00E+00	-1.04E-05
	HTP-nc[1]	CTUh	3.18E-03	3.96E-07	6.38E-07	9.55E-08	9.86E-05	1.93E-07	1.04E-07	3.49E-05	0.00E+00	-1.16E-04
	SQP[1]	dimensionless	3.84E+03	2.67E+02	1.01E+02	1.27E+01	2.12E+04	2.56E+01	7.00E+01	2.44E+03	0.00E+00	-7.59E+03

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"
*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator
2. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Resource use												
Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	PERE	MJ	2.67E+04	6.89E+00	2.15E+01	1.05E+00	8.75E+03	2.13E+00	1.81E+00	4.21E+02	0.00E+00	-1.39E+04
	PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	PERT	MJ	2.67E+04	6.89E+00	2.15E+01	1.05E+00	8.75E+03	2.13E+00	1.81E+00	4.21E+02	0.00E+00	-1.39E+04
	PENRE	MJ	2.81E+04	4.66E+02	2.16E+02	1.97E+02	4.66E+04	3.98E+02	1.22E+02	2.97E+03	0.00E+00	-4.68E+04
	PENRM	MJ	4.36E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	PENRT	MJ	3.25E+04	4.66E+02	2.16E+02	1.97E+02	4.66E+04	3.98E+02	1.22E+02	2.97E+03	0.00E+00	-4.68E+04
	SM	kg	8.89E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	FW	m^3	2.03E+04	5.89E-02	3.27E-01	1.30E-02	2.39E+01	2.63E-02	1.55E-02	4.90E+00	0.00E+00	-9.00E+01

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"
*INA Indicator Not Assessed

End of life - Waste

Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	HWD	kg	9.40E-01	2.79E-03	1.05E-01	1.25E-03	1.13E-01	2.52E-03	7.33E-04	2.68E+00	0.00E+00	-1.42E-01
	NHWD	kg	8.62E+02	2.18E+01	3.63E+00	2.65E-01	3.18E+03	5.35E-01	5.72E+00	1.48E+02	0.00E+00	-8.71E+02
	RWD	kg	2.50E-01	1.44E-04	2.20E-04	2.03E-05	6.81E-02	4.10E-05	3.79E-05	5.33E-03	0.00E+00	-1.60E-01

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"
*INA Indicator Not Assessed

End of life - Output flow

Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	MFR	kg	0.00E+00	0.00E+00	1.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E+03	0.00E+00	0.00E+00
	MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"
*INA Indicator Not Assessed

Biogenic Carbon Content

Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	0.00E+00

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2

Additional requirements

Dangerous substances

None of the substances contained in the product are listed in the “Candidate List of Substances of Very High Concern for authorisation”, or they do not exceed the limit for registration with the European Chemicals Agency.

Mandatory additional information on release of dangerous substances to indoor air, soil and water.

Bibliography

[1] 'ISO 14040: Environmental management -Life cycle assessment – Principles and Framework, International Organization for Standardization, ISO14040:2006.

[2] 'ISO 14044: Environmental management - Life cycle assessment - Requirements and guidelines, International Organization for Standardization, ISO14044:2006.

[3] 'ISO 14025: Environmental labels and declarations - Type III environmental declarations - Principles and procedures, International Organization for Standardization, ISO14025:2006.

[4] EN 15804:2012+A2:2019: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products EN 15804:2012+A2:2019.

[5] Product Category Rules: Part A, Implementation and use of EN 15804:2012+A2:2019 and CEN TR 16970:2016 in Ireland for the development of Environmental Product Declarations; Version 2.1, issue date: 05.03.2022, published by the EPD Ireland Programme operator (Irish Green Building Council).

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