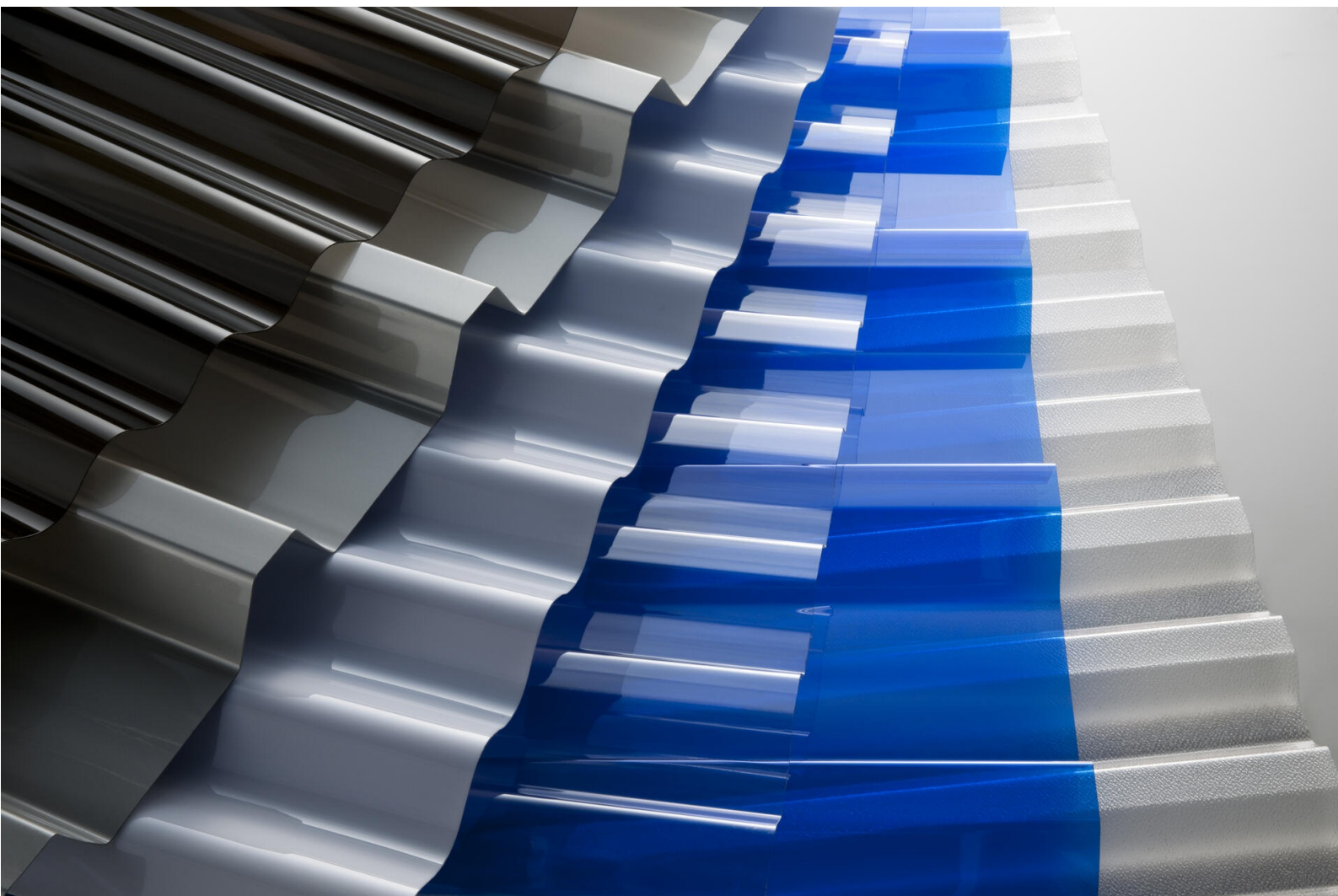


Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Marlon CS



Owner of the declaration:

BRETT MARTIN LTD

Product:

Marlon CS

Declared unit:

1 kg

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR

NPCR Part A: Construction products and services
(application for plastic products)

Program operator:

EPD-Global

Declaration number:

NEPD-17908-22524

Issue date:

06.10.2026

Valid to:

06.10.2031

EPD software:

LCAno EPD generator ID: 1491433

General information

Product:

Marlon CS

Program operator:

EPD-Global
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-global.com

Declaration number:

NEPD-17908-22524

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR Part A: Construction products and services (application for plastic products)

Statement of liability:

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

Declared unit:

1 kg Marlon CS

Declared unit with option:

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

Functional unit:

Not relevant

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Global's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Global, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Global's General Programme Instructions for further information on EPD tools

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPD-Global's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Elisabet Amat, GREENIZE projects

(no signature required)

Owner of the declaration:

BRETT MARTIN LTD
Contact person: Stephen Keys
Phone: 02890849999
e-mail: stephenkeys@brettmartin.com

Manufacturer:

BRETT MARTIN LTD

Place of production:

BRETT MARTIN LTD
24 Roughfort Road
BT36 4RB Mallusk, Co Antrim, United Kingdom

Management system:

ISO 9001:2015

Organisation no:

GB760 9875 85

Issue date:

06.10.2026

Valid to:

06.10.2031

Year of study:

2025

Comparability:

EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not viewed in a building context.

Development and verification of EPD:

The declaration is created using EPD generator v2025.09, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD-Global. NEPDT242

Developer of EPD: Nyaradzo Hove

Reviewer of company-specific input data and EPD: Stephen Keys

Approved:

Håkon Hauan, CEO EPD-Global

Product:

Product description:

Marlon CS is a high quality, extruded, corrugated polycarbonate sheet with a co-extruded UV resistant coating manufactured by Brett Martin. Combining strength and impact resistance with high optical clarity and light transmission, this lightweight rooflight material is ideal for applications which require high performance characteristics. Marlon CS rooflights can be used to form complete roof coverings or can be incorporated into any corrugated metal roofing and cladding system, ranging from simple single skin to advanced composite panel. Applications include rooflights and sidelights, vertical glazing, composite rooflights, canopies, and decorative displays.

Product specification:

Materials	kg	%
Inorganic Binder	0.03	3.05
Pigments	0.02	2.03
Plastic - Polycarbonate (PC)	0.934	94.92
Total	0.984	100.00

Packaging	kg	%
Packaging - Cardboard	0.002	9.48
Packaging - Plastic	0.019	90.05
Packaging - Plastic straps	0.0001	0.4739
Total incl. packaging	1.01	100.00

Technical data:

Marlon CS is a corrugated polycarbonate sheet manufactured to EN 1013 standard for light-transmitting single skin profiled plastic sheets for internal and external use roofs, walls, and ceilings. Marlon CS is available in a range of profiles, surface finishes, thicknesses, UV protection (single and dual sided), clear, diffuser, heatguard and tinted. Marlon CS is REACH and RoHS compliant, and has been independently tested to the EN 13501-1 Fire Standard.

Properties	Description	Test Method	Value	Units
Mechanical	Tensile strength at yield	DIN 53455	>60	MPa
Mechanical	Tensile strength at break	DIN 53455	>70	MPa
Mechanical	Modulus of elasticity	DIN 53457	>2300	MPa
Physical	Specific gravity	DIN 53479	1.20	g/cm3
Thermal	Softening temperature - Vicat 'B'	DIN 53460	148	oC
Thermal	Linear thermal expansion	DIN 53752	6.8×10^{-5}	m/m.K
Thermal	Maximum service temperature	Permanent	100	oC
Thermal	- no loading	Short term	130	oC

Market:

Marlon CS products are sold across the UK, EU, USA, and international markets. An EU average transport scenario has been applied based on representative sales volumes.

Reference service life, product:

Marlon CS sheets are manufactured under Quality Management System BS EN ISO 9001. Marlon CS has a limited warranty, and mechanical performance is known to remain stable for prolonged service in temperatures up to 100°C. Marlon CS should be cleaned with water and a soft cloth or sponge, avoiding dry rubbing to prevent surface damage. Marlon CS is 100% recyclable and reusable if separated from other materials at the end of its life cycle - contact your local recycling center for more information.

Reference service life, building or construction works:

Not relevant

LCA: Calculation rules

Declared unit:

1 kg Marlon CS

Cut-off criteria:

All major raw materials and all the essential energy are included. The production processes for raw materials and energy flows with very small amounts (less than 1%) may not be included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.

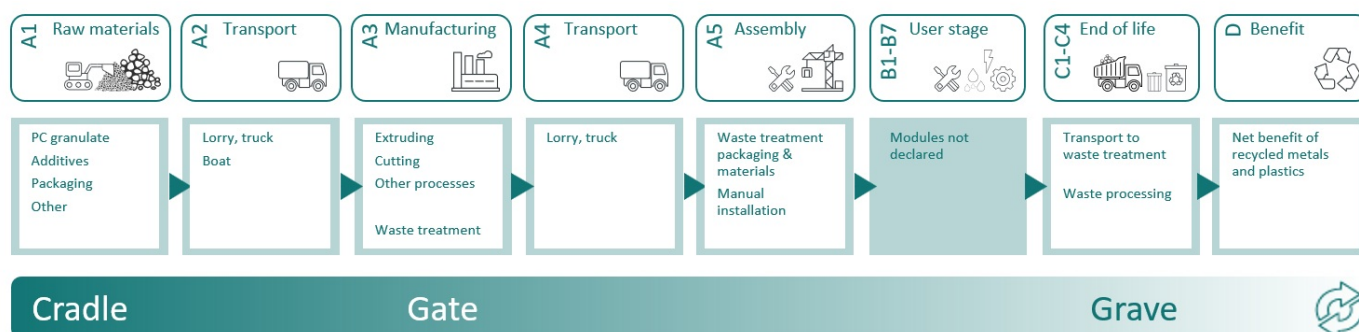
Materials	Source	Data quality	Year
Inorganic Binder	ecoinvent 3.10.1	Database	2023
Packaging - Cardboard	ecoinvent 3.10.1	Database	2023
Packaging - Plastic	ecoinvent 3.10.1	Database	2023
Packaging - Plastic	ecoinvent 3.11	Database	2024
Packaging - Plastic straps	ecoinvent 3.10.1	Database	2023
Pigments	ecoinvent 3.10.1	Database	2023
Plastic - Polycarbonate (PC)	ecoinvent 3.10.1	Database	2023

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

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	MND	MND	MND	MND	MND	MND	MND		X	X	X	X	X

System boundary:

Includes stages A1-A5; C1-C4 and D stages.



Additional technical information:

Marlon CS products can be manufactured to match a wide range of roofing and cladding profiles, with the most common being Mini, Greca, Iron, Omega, P0007, and P0619. As sheets of the same thickness can be produced in different profiles, each with a different weight per square meter, it is not possible to assign a single nominal sheet weight to a given thickness. Therefore, conversion factors are calculated individually for each sheet by dividing the declared unit (1 kg) by the Marlon CS sheet weight (kg/m²) given in the individual product data sheet.

LCA: Scenarios and additional technical information

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

Module A4 = The vast majority of Brett Martin products are sold within the EU. For Module A4 transport modelling, an average European transport scenario has been applied, based on representative sea and road freight distances from the Brett Martin manufacturing facility to Lyon, France.

Modules A5 = No energy use for installation has been quantified since this operation is assumed to be done with other products and should be assessed at a construction works level.

Module C1 = For both buildings and construction works, the plastic components will be taken out as part of a larger demolition. The energy use for the polycarbonate components removal compared to other heavier materials is assumed to be low. This module can therefore be included with zero impact

Module C2 = The transportation distance from the demolition site to the waste treatment facility is assumed to be 100 km and the mode of transport is assumed to be truck.

Modules C3 and C4 = Waste treatment of the end-of-life polycarbonate components is treated as 100% to the incineration in C3.

Module D = The recyclability of metals, plastics, and electronic components allows the producers a credit for the net scrap that is produced at the end of a product's life. The benefits from recycling of net scrap are described in formula from EN 15804:2012+A2:2019. Substitution of heat and electricity generated by the incineration with energy recovery of plastic insulation and other parts is also calculated in module D.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Ship, Freight, Transoceanic (km)	65.0 %	407.00	0.003	l/tkm	1.22
Truck, unspecified (km) - Europe	48.7 %	1264.00	0.051	l/tkm	64.46
Assembly (A5)	Unit	Value			
Waste, packaging, corrugated board box, 0 % recycled, to average treatment (kg) / correct	kg	0.002			
Waste, packaging, plastic film (LDPE), to average treatment (kg)	kg	0.0191			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, unspecified (km) - Europe	48.7 %	98.40	0.051	l/tkm	5.02
Waste processing (C3)	Unit	Value			
Waste plastic, mixture treatment of waste plastic, mixture, municipal incineration FAE (kg)	kg	0.984			
Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of electricity, in Norway (MJ)	MJ	0.00032			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	0.0003697			

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-A3	A4	A5	C1	C2	C3	C4	D
	GWP-total	kg CO ₂ -eq	6.36E+00	1.99E-01	2.68E-02	0.00E+00	1.51E-02	2.33E+00	0	-4.22E-06
	GWP-fossil	kg CO ₂ -eq	6.33E+00	1.98E-01	2.68E-02	0.00E+00	1.51E-02	2.33E+00	0	-4.08E-06
	GWP-biogenic	kg CO ₂ -eq	2.27E-02	1.35E-04	5.07E-06	0.00E+00	1.05E-05	2.81E-05	0	-5.80E-08
	GWP-luluc	kg CO ₂ -eq	5.08E-03	7.37E-05	2.32E-07	0.00E+00	5.56E-06	9.19E-06	0	-8.18E-08
	ODP	kg CFC11 -eq	1.78E-07	3.81E-09	1.70E-11	0.00E+00	2.97E-10	7.40E-10	0	-1.56E-07
	AP	mol H+ -eq	2.64E-02	9.96E-04	6.84E-06	0.00E+00	6.80E-05	4.95E-04	0	-3.28E-08
	EP-FreshWater	kg P -eq	1.75E-03	1.34E-05	8.74E-08	0.00E+00	1.03E-06	5.55E-06	0	-3.30E-10
	EP-Marine	kg N -eq	4.97E-03	3.73E-04	8.10E-06	0.00E+00	2.67E-05	2.95E-04	0	-7.43E-09
	EP-Terrestrial	mol N -eq	5.11E-02	4.08E-03	3.28E-05	0.00E+00	2.91E-04	2.49E-03	0	-8.40E-08
	POCP	kg NMVOC -eq	2.62E-02	1.43E-03	9.04E-06	0.00E+00	1.04E-04	6.23E-04	0	-2.30E-08
	ADP-minerals&metals ¹	kg Sb-eq	6.98E-05	6.22E-07	2.84E-09	0.00E+00	4.81E-08	1.46E-07	0	-1.67E-10
	ADP-fossil ¹	MJ	1.28E+02	2.83E+00	9.31E-03	0.00E+00	2.16E-01	3.48E-01	0	-5.71E-05
	WDP ¹	m ³	1.62E+00	1.42E-02	1.78E-03	0.00E+00	1.10E-03	1.55E-01	0	-4.99E-03

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"

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 to environmental impacts:

The LCA results in the EPD are calculated using a specific methodological approach for accounting energy resources, see the additional requirements section for more information. In this EPD the following approach was used: Location-based approach.

Not Relevant

Additional environmental impact indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
 PM	Disease incidence	2.53E-07	1.91E-08	5.50E-11	0.00E+00	1.48E-09	2.18E-09	0	-1.00E-12
 IRP ²	kgBq U235 -eq	6.37E-01	3.68E-03	2.14E-05	0.00E+00	2.84E-04	1.27E-03	0	-6.75E-07
 ETP-fw ¹	CTUe	2.59E+02	3.67E-01	5.71E-02	0.00E+00	2.82E-02	4.94E+00	0	-2.87E-04
 HTP-c ¹	CTUh	6.80E-09	0.00E+00	1.00E-12	0.00E+00	0.00E+00	1.30E-10	0	0.00E+00
 HTP-nc ¹	CTUh	6.30E-08	2.54E-09	6.50E-11	0.00E+00	1.98E-10	5.33E-09	0	0.00E+00
 SQP ¹	dimensionless	2.11E+01	2.08E+00	5.05E-03	0.00E+00	1.62E-01	8.45E-02	0	-2.18E-04

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"

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-A3	A4	A5	C1	C2	C3	C4	D
	PERE	MJ	8.19E+00	4.93E-02	3.47E-04	0.00E+00	3.81E-03	2.18E-02	0	-5.32E-04
	PERM	MJ	2.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00
	PERT	MJ	8.22E+00	4.93E-02	3.47E-04	0.00E+00	3.81E-03	2.18E-02	0	-5.32E-04
	PENRE	MJ	9.92E+01	2.83E+00	9.31E-03	0.00E+00	2.16E-01	3.48E-01	0	-5.71E-05
	PENRM	MJ	2.91E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00
	PENRT	MJ	1.28E+02	2.83E+00	9.31E-03	0.00E+00	2.16E-01	3.48E-01	0	-5.71E-05
	SM	kg	1.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00
	RSF	MJ	1.15E-03	1.55E-05	1.82E-07	0.00E+00	1.20E-06	1.33E-05	0	-3.02E-07
	NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	-1.19E-05
	FW	m ³	4.38E-02	3.99E-04	3.08E-05	0.00E+00	3.08E-05	2.66E-03	0	-2.78E-06

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"

End of life - Waste										
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
 HWD	kg	3.88E-01	4.07E-03	3.38E-04	0.00E+00	3.11E-04	0.00E+00	0	-1.84E-08	
 NHWD	kg	1.48E+01	8.53E-02	2.55E-02	0.00E+00	6.57E-03	9.84E-01	0	-2.76E-06	
 RWD	kg	1.56E-04	9.14E-07	1.54E-09	0.00E+00	7.07E-08	0.00E+00	0	-3.98E-10	

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"

End of life - Output flow										
Indicator	Unit	A1-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	0.00E+00	
 MFR	kg	5.32E-03	0.00E+00	7.83E-03	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	
 MER	kg	3.80E-09	0.00E+00	2.39E-10	0.00E+00	0.00E+00	9.84E-01	0	0.00E+00	
 EEE	MJ	1.54E-05	0.00E+00	3.73E-06	0.00E+00	0.00E+00	3.19E-04	0	0.00E+00	
 EET	MJ	1.43E-05	0.00E+00	7.19E-06	0.00E+00	0.00E+00	3.50E-04	0	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"

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	8.51E-04

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

Additional requirements

Transparent energy reporting

The EPD presents environmental impact categories in the main results tables using a specific methodological approach for accounting energy resources. To ensure transparency and support informed interpretation, the table below explains the implications of the chosen methodology. It illustrates the GWP-total for energy resources used in the manufacturing stage, comparing the location-based and market-based approaches. In this EPD the following approach was used in main result tables: Location-based approach.

Electricity mix	Source	Amount	Unit	GWPtotal [kg CO ₂ /Unit]	SUM [kg CO ₂]
Location-based approach.					
Electricity, United Kingdom, low voltage	ecoinvent 3.10.1	6.16E-01	kWh	2.61E-01	1.61E-01
Electricity production, photovoltaic, 3kWp slanted-roof installation, multi-Si, panel, mounted (kWh) electricity, low voltage - GB - ecoinvent 3.10.1	ecoinvent 3.10.1	9.83E-02	kWh	8.04E-02	7.91E-03
Electricity, low voltage electricity production, wind, onshore (kWh) - GB	ecoinvent 3.10.1	7.03E-02	kWh	1.91E-02	1.34E-03
Market-based approach.					
Electricity, United Kingdom, low voltage, residual mix	ecoinvent 3.10	7.85E-01	kWh	4.53E-01	3.55E-01

"Reading example: 9.0 E-03 = 9.0*10⁻³ = 0.009"

Dangerous substances:

The product contains no substances on the REACH Candidate list at or above 100 ppm, 0,01 % by weight.

Indoor environment:

Not Relevant

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWPIOBC	kg CO ₂ -eq	6.34E+00	1.99E-01	2.68E-02	0.00E+00	1.51E-02	2.33E+00	0	-4.18E-06

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
 ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
 EN 15804:2012+A2:2019 Environmental product declaration - Core rules for the product category of construction products.
 ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products.
 ecoinvent v3, Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.
 LCA.no (2025) EPD generator v2025.09 Background information for EPD generator tool system verification, LCA.no September 2025.
 Graafland, J. and Ruttenborg, M. (2023) EPD generator for Plastic products, Background information for EPD generator application and LCA data, LCA.no report number: 06.23
 NPCR Part A: Construction products and services. Ver. 2.0. March 2021, EPD-Norge.

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