ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Contour Ventilation Louvres System

Maple Façades Ltd.

EPD HUB, HUB-2340
Publishing date 15 November 2024, last updated on 15 November 2024, valid until 15 November 2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Maple Façades Ltd.
Address	Units 11a – 11d, Bramhall Moor Technology Park, Pepper Road, Hazel Grove, Stockport, Cheshire, SK7 5SA, United Kingdom
Contact details	sales@maplefacades.co.uk
Website	https://maplefacades.co.uk/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Adeleh Ghodsizadeh (Blue Marble Environmental Partnerships Ltd.)
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Contour Ventilation Louvres System
Additional labels	-
Product reference	VL50, VL75, VL100
Place of production	Stockport, United Kingdom
Period for data	2023 (Calendar Year)
Averaging in EPD	Multiple Products
Variation in GWP-fossil for A1-A3	-22% / +14 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m2
Declared unit mass	17.2 kg
GWP-fossil, A1-A3 (kgCO2e)	141
GWP-total, A1-A3 (kgCO2e)	142
Secondary material, inputs (%)	29.2
Secondary material, outputs (%)	70.2
Total energy use, A1-A3 (kWh)	562
Total water use, A1-A3 (m3e)	1.25

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Maple is a leading designer, manufacturer and installer of rainscreen cladding, architectural façades, solar shading and screening for building exteriors and interiors.

Since 1983, we've been combining innovation, technical excellence and exceptional customer service to deliver projects that save energy, create visual impact and make buildings more comfortable for their occupants.

PRODUCT DESCRIPTION

Contour VL ventilation louvre system is a modular and efficient solution designed for plant and HVAC machinery rooms, offering natural ventilation and protection against water ingress. Available in pitch options of 50mm, 75mm, and 100mm, it caters to various airflow and free area requirements. The single-bank louvre blades are securely installed to prevent theft and vandalism and can be powder-coated or anodised to match architectural designs. The system includes options for louvred doors and insect/vermin mesh, and it has been BSRIA-tested to ensure it meets project performance requirements.

This is an average EPD and applies to Contour Ventilation Louvre System with 3 variations (VL50, VL75 and VL100).

Further information can be found at https://maplefacades.co.uk/.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	100	Global
Minerals	-	
Fossil materials	-	
Bio-based materials	-	

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.0207

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m2
Mass per declared unit	17.2 kg
Functional unit	-
Reference service life	-

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
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		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

This product is an assembly of (1) Cleats, (2) Mullions and Clips and (3) Louvre Blades. Raw materials for components are sourced globally, though predominantly from Europe, with fixings sourced from the Far East.

A weighted average of transportation distances has been calculated to account for raw material transportation.

Cleats are manufactured in the UK using pre-galvanised steel. Other parts are fabricated and powder coated in the UK. Fixings are produced outside of the UK. All components are transported to Maple Façades for assembly and packaging before transportation to site. (A1, A2).

Assembly occurs on-site at the facilities of Maple Façades in Stockport, UK. Assembly requires the use of low and medium voltage electricity and heat production. (A3). 10% production losses are accounted for as manufacturing waste. Manufacturing waste is assumed to travel 50 km for waste treatment via >32 tonne lorry. Recycling of manufacturing wastes is assumed at 92% and 96% for Aluminium (+) and Steel (+) respectively. Residual waste is transferred to landfill (A3).

The components are packaged separately, using pallets, plastic wrapping and either polystyrene blocks or timber battening layers for protection. (A3).

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

A typical scenario has been modelled for transportation to site at 161km (100 miles) via fully laden 7.5 tonne lorry. (A4).

High-level installation is via diesel-powered aerial lift and hand-held power tools (A5). Steel fixings are used for the installation of the product (A5).

Packaging waste leaves the system at the point of installation, with pallets / timber recycled at a rate of 44.1% (DEFRA, 2022). With plastic packaging sent to landfill. It is assumed that waste treatment occurs no more than 50km from the installation site and transport is via >32 tonne lorry. (A5).

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

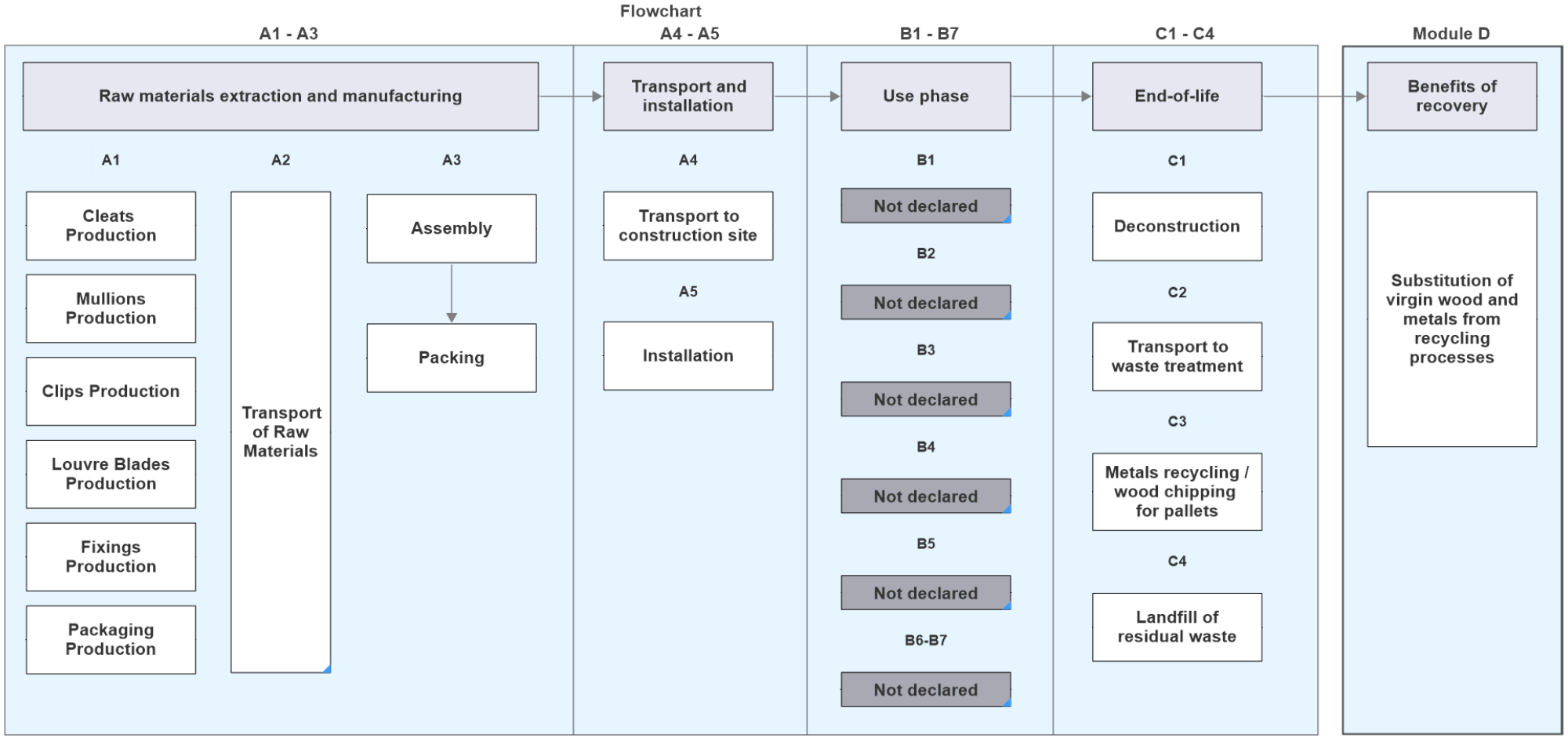
At the end of life, the product is assumed to be removed using diesel powered aerial lift and hand-held power tools (C1).

Transport to waste treatment has been modelled as 50km via >32 tonne lorry (C2).

Steel components are assumed to achieve a recycling rate of 96%, with the remaining 4% reaching landfill. Aluminium components achieve a recycling rate of 92%, with the remaining 8% reaching landfill (C3, C4).

Benefits and loads are accounted for in Module D for the provision of recyclates (steel, aluminium and wood packaging) to subsequent lifecycles. (D).

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging materials	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	No allocation

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Representative product
Variation in GWP-fossil for A1-A3	-22% / +14 %

This EPD applies to Contour Ventilation Louvre System with 3 variations (VL50, VL75 and VL100). VL75 is considered as the base case due to its typical raw material composition and typical GWP (fossil) content within the range.

For the range, the variance in GWP fossil (A1-A3) is shown below:

VL50 GWP (fossil) value: 112.99 kg CO2 e

VL75 GWP (fossil) value: 145.25 kg CO2 e

VL100 GWP (fossil) value: 165.79 kg CO2 e

Variance (max +/- 50%): -22% / +14%

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10 and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	1.34E+02	2.26E+00	5.33E+00	1.42E+02	1.86E+00	1.99E+00	MND	MND	MND	MND	MND	MND	MND	1.83E+00	9.04E-02	3.24E-01	2.22E-02	-5.55E+01
GWP – fossil	kg CO_2e	1.34E+02	2.26E+00	5.40E+00	1.41E+02	1.86E+00	1.92E+00	MND	MND	MND	MND	MND	MND	MND	1.83E+00	9.04E-02	3.24E-01	2.22E-02	-5.55E+01
GWP – biogenic	kg CO_2e	0.00E+00	0.00E+00	-7.58E-02	-7.58E-02	0.00E+00	7.58E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP – LULUC	kg CO_2e	2.64E-01	7.48E-04	5.86E-03	2.71E-01	8.20E-04	2.55E-04	MND	MND	MND	MND	MND	MND	MND	1.89E-04	3.62E-05	3.84E-04	2.56E-05	-4.07E-02
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1.31E-06	4.29E-08	2.64E-07	1.62E-06	3.02E-08	2.96E-08	MND	MND	MND	MND	MND	MND	MND	2.89E-08	1.33E-09	6.15E-09	3.14E-10	-3.84E-07
Acidification potential	mol H^+e	9.29E-01	6.99E-03	1.84E-02	9.55E-01	7.89E-03	1.68E-02	MND	MND	MND	MND	MND	MND	MND	1.64E-02	3.08E-04	1.90E-03	2.59E-04	-3.19E-01
EP-freshwater[2)]	kg Pe	5.69E-03	1.77E-05	8.96E-05	5.80E-03	2.19E-05	1.06E-05	MND	MND	MND	MND	MND	MND	MND	6.81E-06	8.26E-07	5.48E-06	1.05E-06	-2.17E-03
EP-marine	kg Ne	1.31E-01	2.32E-03	3.86E-03	1.37E-01	2.53E-03	7.65E-03	MND	MND	MND	MND	MND	MND	MND	7.56E-03	9.99E-05	7.91E-04	5.71E-05	-5.15E-02
EP-terrestrial	mol Ne	1.93E+00	2.55E-02	4.71E-02	2.00E+00	2.81E-02	8.38E-02	MND	MND	MND	MND	MND	MND	MND	8.29E-02	1.10E-03	7.24E-03	6.61E-04	-5.86E-01
POCP ("smog")[3)]	kg NMVOCe	4.58E-01	1.09E-02	1.45E-02	4.83E-01	1.11E-02	2.50E-02	MND	MND	MND	MND	MND	MND	MND	2.47E-02	4.54E-04	2.30E-03	1.98E-04	-1.84E-01
ADP-minerals & metals[4)]	kg Sbe	1.95E-03	7.17E-06	7.51E-05	2.03E-03	1.25E-05	2.90E-06	MND	MND	MND	MND	MND	MND	MND	1.09E-06	2.52E-07	8.34E-07	1.50E-06	-1.63E-03
ADP-fossil resources	MJ	1.61E+03	3.17E+01	1.41E+02	1.78E+03	2.57E+01	2.53E+01	MND	MND	MND	MND	MND	MND	MND	2.43E+01	1.31E+00	5.66E+00	3.09E-01	-6.15E+02
Water use[5)]	m^3e depr.	4.27E+01	1.52E-01	1.30E+00	4.41E+01	1.52E-01	8.56E-02	MND	MND	MND	MND	MND	MND	MND	6.47E-02	6.30E-03	1.22E-01	5.13E-03	-1.30E+01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1.73E-05	1.65E-07	1.06E-07	1.76E-05	1.68E-07	4.70E-07	MND	MND	MND	MND	MND	MND	MND	4.63E-07	9.01E-09	3.52E-08	3.56E-09	-4.41E-06
Ionizing radiation[6)]	kBq U235e	4.55E+00	1.57E-02	2.12E+00	6.69E+00	1.61E-02	1.82E-02	MND	MND	MND	MND	MND	MND	MND	1.61E-02	4.52E-04	4.39E-03	8.00E-04	-1.32E+00
Ecotoxicity (freshwater)	CTUe	1.50E+03	8.21E+00	3.31E+01	1.54E+03	6.83E+00	4.36E+00	MND	MND	MND	MND	MND	MND	MND	3.43E+00	3.17E-01	2.06E+03	2.20E-01	-6.12E+02
Human toxicity, cancer	CTUh	1.89E-06	1.32E-08	1.43E-08	1.92E-06	1.07E-08	8.97E-09	MND	MND	MND	MND	MND	MND	MND	7.12E-09	4.49E-10	1.65E-09	1.97E-10	-1.60E-06
Human tox. non-cancer	CTUh	1.60E-06	1.94E-08	7.78E-08	1.70E-06	1.61E-08	5.35E-09	MND	MND	MND	MND	MND	MND	MND	3.64E-09	8.66E-10	4.75E-08	1.29E-09	-1.27E-06
SQP[7)]	-	4.60E+02	1.91E+01	8.22E+01	5.62E+02	1.12E+01	2.62E+00	MND	MND	MND	MND	MND	MND	MND	2.08E+00	1.32E+00	8.93E+00	6.02E-01	-3.03E+02

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	2.19E+02	5.77E-01	4.18E+01	2.61E+02	6.19E-01	-4.57E-01	MND	MND	MND	MND	MND	MND	MND	3.81E-01	1.72E-02	1.55E-01	5.30E-02	-1.62E+02
Renew. PER as material	MJ	0.00E+00	0.00E+00	6.63E-01	6.63E-01	0.00E+00	-6.63E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renew. PER	MJ	2.19E+02	5.77E-01	4.25E+01	2.62E+02	6.19E-01	-1.12E+00	MND	MND	MND	MND	MND	MND	MND	3.81E-01	1.72E-02	1.55E-01	5.30E-02	-1.62E+02
Non-re. PER as energy	MJ	1.59E+03	3.17E+01	1.37E+02	1.76E+03	2.57E+01	2.43E+01	MND	MND	MND	MND	MND	MND	MND	2.43E+01	1.31E+00	5.66E+00	3.09E-01	-6.15E+02
Non-re. PER as material	MJ	0.00E+00	0.00E+00	1.14E+00	1.14E+00	0.00E+00	-1.14E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-re. PER	MJ	1.59E+03	3.17E+01	1.38E+02	1.76E+03	2.57E+01	2.32E+01	MND	MND	MND	MND	MND	MND	MND	2.43E+01	1.31E+00	5.66E+00	3.09E-01	-6.15E+02
Secondary materials	kg	5.01E+00	1.39E-02	2.67E-02	5.06E+00	1.34E-02	1.79E-02	MND	MND	MND	MND	MND	MND	MND	9.92E-03	5.58E-04	2.16E-03	3.53E-04	7.53E+00
Renew. secondary fuels	MJ	4.07E-02	1.46E-04	2.33E-02	6.42E-02	1.21E-04	6.04E-05	MND	MND	MND	MND	MND	MND	MND	2.65E-05	7.08E-06	3.09E-05	1.62E-05	-1.70E-02
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	1.21E+00	4.35E-03	3.06E-02	1.25E+00	4.15E-03	1.97E-03	MND	MND	MND	MND	MND	MND	MND	1.70E-03	1.90E-04	-4.41E-02	1.76E-04	-4.42E-01

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2.76E+01	4.41E-02	2.04E-01	2.78E+01	5.69E-02	9.86E-02	MND	MND	MND	MND	MND	MND	MND	2.74E-02	2.23E-03	3.88E-02	1.89E-03	-6.03E+01
Non-hazardous waste	kg	4.29E+02	9.82E-01	5.38E+00	4.35E+02	1.22E+00	1.11E+00	MND	MND	MND	MND	MND	MND	MND	3.84E-01	4.14E-02	6.40E+01	6.77E-02	-1.21E+02
Radioactive waste	kg	3.47E-03	1.12E-05	9.56E-04	4.43E-03	1.11E-05	9.35E-06	MND	MND	MND	MND	MND	MND	MND	7.99E-06	2.84E-07	2.81E-06	6.22E-07	-8.61E-04

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	1.40E+00	1.40E+00	0.00E+00	4.84E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	1.57E+01	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1.34E+02	2.24E+00	5.38E+00	1.42E+02	1.85E+00	1.91E+00	MND	MND	MND	MND	MND	MND	MND	1.82E+00	8.99E-02	3.22E-01	2.22E-02	-5.52E+01
Ozone depletion Pot.	kg $CFC_{-11}e$	1.14E-06	3.41E-08	2.16E-07	1.39E-06	2.41E-08	2.35E-08	MND	MND	MND	MND	MND	MND	MND	2.29E-08	1.06E-09	4.94E-09	2.58E-10	-3.24E-07
Acidification	kg SO_2e	7.43E-01	5.32E-03	1.45E-02	7.63E-01	6.02E-03	1.19E-02	MND	MND	MND	MND	MND	MND	MND	1.15E-02	2.36E-04	1.41E-03	2.08E-04	-2.66E-01
Eutrophication	kg PO_4^3e	1.42E-01	1.30E-03	4.13E-03	1.47E-01	1.81E-03	2.75E-03	MND	MND	MND	MND	MND	MND	MND	2.69E-03	5.73E-05	9.04E-04	3.11E-05	-3.62E-02
POCP (“smog”)	kg C_2H_4e	5.15E-02	4.99E-04	1.09E-03	5.31E-02	7.47E-04	8.89E-04	MND	MND	MND	MND	MND	MND	MND	8.63E-04	2.10E-05	1.09E-04	1.25E-05	-1.58E-02
ADP-elements	kg Sbe	1.92E-03	6.97E-06	7.47E-05	2.00E-03	1.23E-05	2.87E-06	MND	MND	MND	MND	MND	MND	MND	1.07E-06	2.46E-07	8.10E-07	1.50E-06	-1.63E-03
ADP-fossil	MJ	1.61E+03	3.17E+01	1.40E+02	1.78E+03	2.57E+01	2.53E+01	MND	MND	MND	MND	MND	MND	MND	2.43E+01	1.31E+00	5.66E+00	3.09E-01	-6.15E+02

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

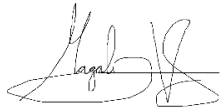
I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited
15.11.2024



VERIFIED ISO 14025