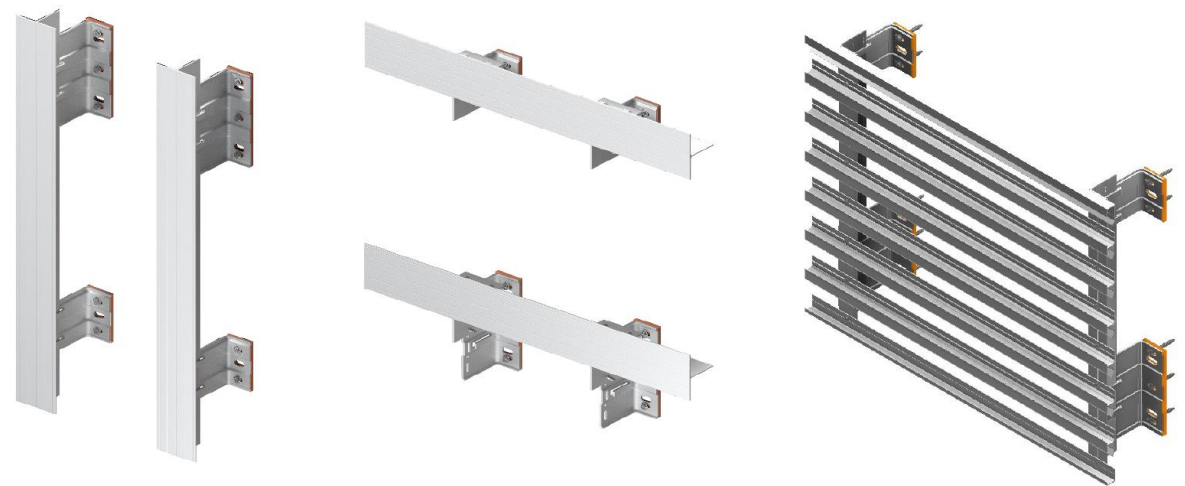




ENVIRONMENTAL PRODUCT DECLARATION

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

Aluminium Support Systems for Rainscreen Cladding
Ash & Lacy



EPD HUB, HUB-0747

Publishing date 11 October 2023, last updated on 06 December 2023, valid until 11 October 2028.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Ash & Lacy
Address	Bromford Lane, West Bromwich B70 7JJ
Contact details	spec@ashandlacy.com
Website	www.ashandlacy.com

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 1.0, 1 Feb 2022
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	Aneira Beament - Ash & Lacy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> 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	Aluminium Support Systems for Rainscreen Cladding
Additional labels	AxiAL Support Systems, NaturAL-X Support Systems, Mechslip Support Systems
Product reference	-
Place of production	Birmingham, UK
Period for data	Calendar year 2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	N.A.

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of Aluminium-based rainscreen support system
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	6,71E+00
GWP-total, A1-A3 (kgCO ₂ e)	6,82E+00
Secondary material, inputs (%)	27.9
Secondary material, outputs (%)	82.7
Total energy use, A1-A3 (kWh)	29.5
Total water use, A1-A3 (m ³ e)	1,14E-01

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Ash & Lacy manufactures a diverse range of engineered facade and roofing systems tailored to the architectural sector, complemented by a comprehensive range of fasteners, load bearing components and accessories. In-house testing facilities, as well as design and engineering analysis capabilities ensures that all Ash & Lacy products are at the forefront of technical performance, and often exceed industry standards.

We are committed to sustainable development and continually monitor systems and review targets on an on-going basis. Ash & Lacy's environmental management system is certified as compliant with the standard BS EN ISO 14001:2015, so we are not only maintaining environmental best practice, we are also constantly finding and implementing new methods of further reducing our impact on the environment. Meeting environmental legislation is an important part of this commitment, ensuring that current and future operations are conducted in a responsible manner that creates least impact upon the environment.

PRODUCT DESCRIPTION

These aluminium rainscreen support systems and lightweight framing components have been developed by industry experts to offer a diverse selection of generic framing options that can accommodate a wide spectrum of materials and design requirements. Providing both cost-effective and flexible solutions, and benefiting from the safety of mechanical fixing methodology, these products are designed to suit the needs of most new build and refurbishment projects.

Comprised of an extensive standard range of pre-assembled brackets &

rails, including thermal breaks formed using nylon material, the components and systems are manufactured from the highest quality aluminium alloys, ensuring optimum structural integrity and longevity.

Detailed technical information can be found at:

www.ashandlacy.com/products/axial-cladding-support-systems

Customer support:

Email: spec@ashandlacy.com

Telephone: 0121 525 1444

Further information can be found at www.ashandlacy.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	90	EU
Minerals	-	-
Fossil materials	10	EU
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 0.002

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit 1 kg of Aluminium-based rainscreen support system

Mass per declared unit 1 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.

The rainscreen support system is made of aluminium components with nylon on some of the components for thermal isolation purposes. The components are manufactured in the UK and shipped. Principal materials present in the components are aluminium and nylon. The manufacturing process requires electricity and fuels for the different equipment as well as heating. Cardboard boxes are used as packaging material for transporting

the various components of the rainscreen support system from the factory gate.

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.

The transportation distance is defined according to the PCR. Average distance of transportation from production plant to building site is assumed as 175.98 km and the transportation method is assumed to be lorry. Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as product is packaged properly.

Environmental impacts from installation into the building include waste packaging materials (A5) and release of biogenic carbon dioxide from cardboard boxes. The impacts of material production, its processing and its disposal as installation waste are also included.

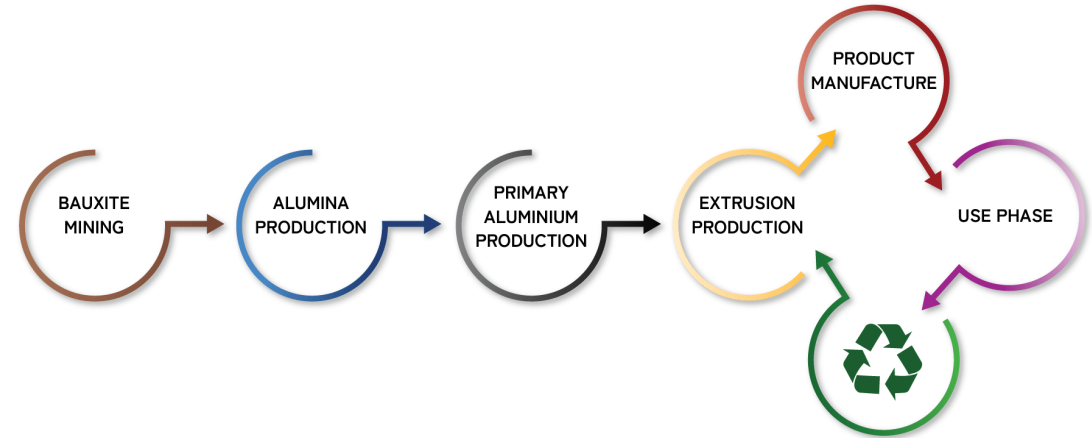
PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

Air, soil, and water impacts during the use phase have not been studied.

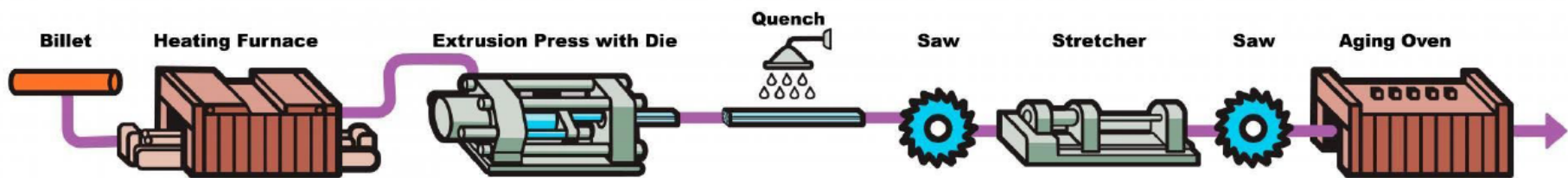
PRODUCT END OF LIFE (C1-C4, D)

The construction of the waste processing facility and the appropriate equipment are not a part of this model. All product waste was transported an assumed maximum 50 km to reach the processing facility/ landfill site. Due to the material and energy recovery potential of the materials, a part of the end-of-life product is converted into recycled raw materials. The cardboard boxes are recycled. Recycled raw materials lead to avoided virgin material production. The benefits and loads of recycling are included in Module D for packaging materials as well.

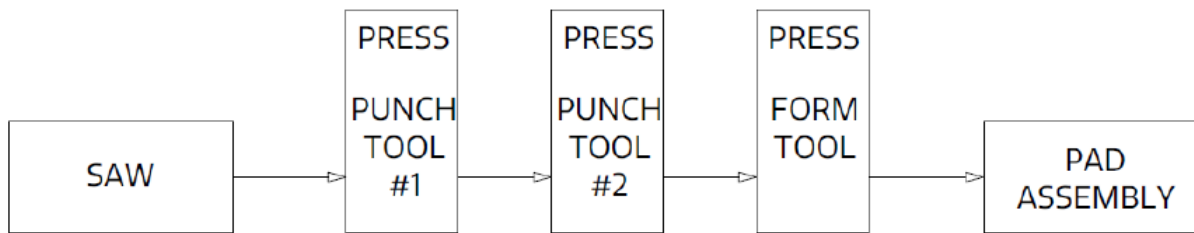


MANUFACTURING PROCESS

Aluminium Extrusion Press Process



Aluminium Bracket Forming 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	Allocated by mass or volume
Packaging materials	Allocated by mass or volume
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	N.A.

There is no average result considered in this study since EPD refers to one specific product produced in one production plant.

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. Ecoinvent 3.8 and One Click LCA databases versions 3.6 and 3.8 were used 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 ₂ e	6,78E+00	1,21E-02	3,63E-02	6,82E+00	1,61E-02	7,38E-02	MND	MND	MND	MND	MND	MND	MND	7,32E-02	4,72E-03	1,42E-01	9,67E-03	-4,65E+00
GWP – fossil	kg CO ₂ e	6,65E+00	1,21E-02	4,48E-02	6,71E+00	1,61E-02	7,32E-02	MND	MND	MND	MND	MND	MND	MND	7,30E-02	4,72E-03	1,41E-01	7,61E-03	-4,53E+00
GWP – biogenic	kg CO ₂ e	1,91E-02	2,73E-06	-8,56E-03	1,05E-02	0,00E+00	3,82E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,21E-03	2,06E-03	-1,96E-02
GWP – LULUC	kg CO ₂ e	1,07E-01	4,41E-06	4,39E-05	1,07E-01	5,77E-06	1,53E-04	MND	MND	MND	MND	MND	MND	MND	1,53E-04	1,74E-06	2,99E-05	2,56E-06	-9,78E-02
Ozone depletion pot.	kg CFC ₁₁ e	4,15E-07	2,81E-09	6,09E-09	4,24E-07	3,84E-09	2,47E-09	MND	MND	MND	MND	MND	MND	MND	2,46E-09	1,08E-09	2,64E-09	3,53E-10	-3,23E-07
Acidification potential	mol H ⁺ e	4,72E-02	5,08E-05	7,23E-05	4,73E-02	6,70E-05	3,72E-04	MND	MND	MND	MND	MND	MND	MND	3,71E-04	2,00E-05	2,81E-04	1,65E-05	-3,69E-02
EP-freshwater ²⁾	kg Pe	2,26E-04	9,35E-08	5,22E-07	2,27E-04	1,10E-07	3,83E-06	MND	MND	MND	MND	MND	MND	MND	3,83E-06	3,86E-08	9,95E-07	6,73E-08	-1,28E-04
EP-marine	kg Ne	6,94E-03	1,52E-05	2,58E-05	6,98E-03	2,03E-05	6,29E-05	MND	MND	MND	MND	MND	MND	MND	6,27E-05	5,93E-06	6,68E-05	1,04E-05	-4,30E-03
EP-terrestrial	mol Ne	6,61E-02	1,68E-04	2,13E-04	6,65E-02	2,24E-04	7,00E-04	MND	MND	MND	MND	MND	MND	MND	6,99E-04	6,55E-05	7,53E-04	4,84E-05	-4,79E-02
POCP (“smog”) ³⁾	kg NMVOCe	2,20E-02	5,37E-05	5,80E-05	2,21E-02	7,20E-05	1,89E-04	MND	MND	MND	MND	MND	MND	MND	1,89E-04	2,09E-05	2,03E-04	1,54E-05	-1,61E-02
ADP-minerals & metals ⁴⁾	kg Sbe	1,36E-05	2,83E-08	5,19E-08	1,37E-05	3,77E-08	3,44E-07	MND	MND	MND	MND	MND	MND	MND	3,42E-07	1,11E-08	2,55E-06	6,03E-09	-9,87E-06
ADP-fossil resources	MJ	6,99E+01	1,82E-01	8,12E-01	7,09E+01	2,46E-01	9,51E-01	MND	MND	MND	MND	MND	MND	MND	9,50E-01	7,08E-02	2,87E-01	3,73E-02	-4,16E+01
Water use ⁵⁾	m ³ e depr.	5,60E+00	8,23E-04	4,68E-03	5,60E+00	1,13E-03	2,00E-02	MND	MND	MND	MND	MND	MND	MND	2,00E-02	3,17E-04	9,23E-03	4,03E-04	-3,77E+00

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.

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	3,82E+01	2,15E-03	8,17E-02	3,82E+01	3,18E-03	1,24E-01	MND	MND	MND	MND	MND	MND	MND	1,23E-01	7,98E-04	4,18E-02	1,88E-03	-3,40E+01
Renew. PER as material	MJ	0,00E+00	0,00E+00	7,40E-02	7,40E-02	0,00E+00	-7,40E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,60E-03
Total use of renew. PER	MJ	3,82E+01	2,15E-03	1,56E-01	3,83E+01	3,18E-03	4,96E-02	MND	MND	MND	MND	MND	MND	MND	1,23E-01	7,98E-04	4,18E-02	1,88E-03	-3,40E+01
Non-re. PER as energy	MJ	6,68E+01	1,82E-01	8,12E-01	6,78E+01	2,46E-01	9,52E-01	MND	MND	MND	MND	MND	MND	MND	9,50E-01	7,08E-02	2,87E-01	3,73E-02	-4,16E+01
Non-re. PER as material	MJ	3,09E+00	0,00E+00	6,01E-04	3,09E+00	0,00E+00	-6,01E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,55E+00	-1,55E+00	1,54E+00
Total use of non-re. PER	MJ	6,99E+01	1,82E-01	8,12E-01	7,09E+01	2,46E-01	9,51E-01	MND	MND	MND	MND	MND	MND	MND	9,50E-01	7,08E-02	-1,26E+00	-1,51E+00	-4,01E+01
Secondary materials	kg	2,79E-01	5,08E-05	5,74E-03	2,85E-01	6,93E-05	9,07E-05	MND	MND	MND	MND	MND	MND	MND	8,75E-05	1,97E-05	3,04E-04	1,05E-05	5,91E-01
Renew. secondary fuels	MJ	1,77E-03	4,92E-07	4,10E-04	2,18E-03	6,11E-07	6,22E-07	MND	MND	MND	MND	MND	MND	MND	6,08E-07	1,98E-07	1,52E-05	5,59E-07	-1,14E-04
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	1,14E-01	2,38E-05	1,12E-04	1,14E-01	3,26E-05	5,60E-04	MND	MND	MND	MND	MND	MND	MND	5,59E-04	9,17E-06	3,05E-04	3,25E-05	-8,09E-02

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	1,91E+00	2,26E-04	6,63E-04	1,91E+00	2,64E-04	6,16E-03	MND	MND	MND	MND	MND	MND	MND	6,14E-03	9,39E-05	2,04E-03	0,00E+00	-1,42E+00
Non-hazardous waste	kg	7,61E+00	3,78E-03	1,38E-02	7,62E+00	4,59E-03	1,65E-01	MND	MND	MND	MND	MND	MND	MND	1,65E-01	1,54E-03	1,02E-01	9,50E-02	-5,64E+00
Radioactive waste	kg	2,55E-04	1,23E-06	2,00E-06	2,58E-04	1,69E-06	2,94E-06	MND	MND	MND	MND	MND	MND	MND	2,93E-06	4,74E-07	1,17E-06	0,00E+00	-1,89E-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	0,00E+00	0,00E+00	0,00E+00	5,80E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	8,60E-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	3,47E-01	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 ₂ e	6,47E+00	1,19E-02	4,45E-02	6,53E+00	1,59E-02	7,17E-02	MND	MND	MND	MND	MND	MND	MND	7,15E-02	4,67E-03	1,41E-01	6,49E-03	-4,42E+00
Ozone depletion Pot.	kg CFC ₁₁ e	3,51E-07	2,22E-09	5,34E-09	3,58E-07	3,04E-09	2,07E-09	MND	MND	MND	MND	MND	MND	MND	2,06E-09	8,59E-10	2,16E-09	2,82E-10	-2,71E-07
Acidification	kg SO ₂ e	4,03E-02	3,94E-05	5,46E-05	4,04E-02	5,19E-05	3,10E-04	MND	MND	MND	MND	MND	MND	MND	3,10E-04	1,55E-05	2,24E-04	1,30E-05	-3,17E-02
Eutrophication	kg PO ₄ ³ e	1,01E-02	8,93E-06	2,47E-05	1,01E-02	1,16E-05	1,35E-04	MND	MND	MND	MND	MND	MND	MND	1,34E-04	3,53E-06	7,80E-05	3,25E-04	-6,91E-03
POCP ("smog")	kg C ₂ H ₄ e	3,13E-03	1,54E-06	3,79E-06	3,14E-03	2,04E-06	1,25E-05	MND	MND	MND	MND	MND	MND	MND	1,24E-05	6,06E-07	8,23E-06	1,53E-06	-2,58E-03
ADP-elements	kg Sbe	1,23E-05	2,74E-08	4,63E-08	1,24E-05	3,67E-08	3,43E-07	MND	MND	MND	MND	MND	MND	MND	3,41E-07	1,07E-08	2,54E-06	5,72E-09	-8,79E-06
ADP-fossil	MJ	6,99E+01	1,82E-01	8,11E-01	7,09E+01	2,46E-01	9,51E-01	MND	MND	MND	MND	MND	MND	MND	9,50E-01	7,08E-02	2,87E-01	3,73E-02	-4,16E+01

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

Updated 06.12.2023

