

ENVIRONMENTAL PRODUCT DECLARATION

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

Facade Plank door
Outline Vinduer A/S



EPD HUB, HUB-1361

Published on 03.05.2024, last updated on 03.05.2024, valid until 03.05.2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Outline Vinduer A/S
Address	Fabriksvej, 4 9640 Farsø
Contact details	ordre@outline.dk
Website	https://www.outline.dk/

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 EN 17213 Windows and doors
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	HUB-1359
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Indra Petersone, Outline Vinduer A/S
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Elma Avdyli, 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	Facade Plank door
Additional labels	Wood and wood/ alu-clad products
Product reference	Plank door wood/ alu-clad
Place of production	9640 Farsø, Denmark
Period for data	Calendar year 2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	0 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1m ² of a plank door with aluminum cladding
Declared unit mass	24.3 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	5,66E+01
GWP-total, A1-A3 (kgCO ₂ e)	2,82E+01
Secondary material, inputs (%)	3.89
Secondary material, outputs (%)	76.8
Total energy use, A1-A3 (kWh)	276
Net fresh water use, A1-A3 (m ³)	0.57

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Outline Vinduer A/S is one of Denmark's leading manufacturers of energy-optimized windows and doors in wood and wood/aluminum for all types of homes. We have over 30 years of experience and all products are based on quality craftsmanship, designed and manufactured in Farsø.

Our windows and doors are tailored to the customer's wishes and needs and are delivered with the market's fastest delivery time of down to 4 days. We deliver quality on time, and provide an extended warranty in addition to the Window Industry's general warranty conditions of 5 years. We give a 10-year guarantee on our product series in wood, wood/aluminum, wood/aluminum 3-layer and wood/aluminum Daylight.

The products are sold through builders, merchants and retailers all over the country to both professional and private customers.

PRODUCT DESCRIPTION

This EPD covers inward opening plank doors made with an aluminium clad wooden frame and GRP threshold. The 74mm thick door blade is made from veneer inside and outside and with EPD foam insulation in between. Door is hinged and with triple-point locking system and includes handle and lock. Main application is to provide thermal insulation and access for residential buildings, U-value about 0,71W/m²K. Frame depth 124mm. Market area of the product covers Denmark.

Further information can be found at <https://www.outline.dk/>.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	20	EU and China

Minerals		
Fossil materials	21	EU
Bio-based materials	59	EU - Africa

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	8.65
Biogenic carbon content in packaging, kg C	1.45

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1m ² of a plank door with aluminum cladding
Mass per declared unit	24.3 kg
Functional unit	1 m ² plank door with GFRP threshold. In accordance with EN 17213, the indicator results have been calculated on the basis of a standard door size measuring 1.23 m x 2,18 m. The declared environmental impacts of this EPD refer to the declared unit of 1 m ²
Reference service life	No RSL is declared since EPD does not contain C-modules

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 manufacturing process includes the production and supply of raw materials as well as their processing at the factory. Manufacturing starts in the timber transformation plant where fingerjointed heartwood pine wood are cut to length for the frame. Next, the pieces are milled and the surfaces are smoothed. Pieces are jointed together with glue using tongue and groove joints and the frame is then clamped in a hydraulic press where

the corners are pressed together tightly. Next is the final milling, after which the frame is then primed/ painted. In parallel to this, the door plank follows a similar process of milling for timber and painting. Aluminium cladding and cill follows a third route of milling and cutting of ready painted profiles to be ready for assembly on frame when assembling product. Finally, customised hardware are fixated on to the frame/ plank, as well as gaskets are mounted onto plank. The finished product then passes through inspection before being loaded onto wooden pallet and secured with corner pads and plastic wrapping for distribution. Timber shavings are collected by suction system into silos to be used for heating on-site. Other manufacturing wastes include aluminium and metal waste, paint and primer, which are collected separately and sent to local waste contractor close to factory to be recycled/ incinerated. The production line uses electricity, and shavings for heat.

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.

Using transportation scenario from EN 17213 PCR for windows and doors.,+ Distance of transport to construction site takes place using small batches using distributors as prescribed scenario: 40T truck full capacity, 150km and return empty 150km and 7.5T truck 20% payload 50km one-way and 50km return empty. Total 400km. Transportation does not cause losses as product is packaged properly.

The most common installation scenario has been considered where the product is installed manually without the use of mechanical handling, with electrical screwdriver. No ancillary material is required and no waste generated (besides packaging). This module also considers environmental impacts from installation process due to generation of waste from packaging materials (A5). This study assumed the loads of preprocessing of packaging waste, namely wooden pallet chipped to be used as secondary fuel, PE and paper sorted for recycling.

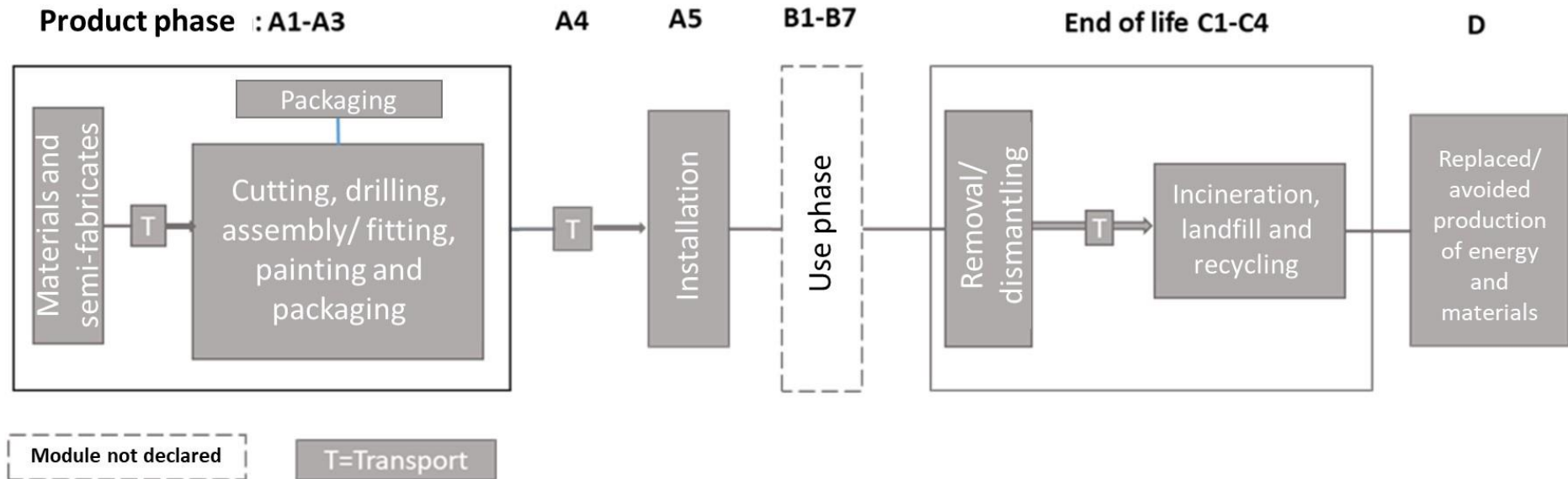
PRODUCT USE AND MAINTENANCE (B1-B7)

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 door is at its EoL dismantled manually and separately from other construction waste, hence no energy nor material is required. Per Annex B, EN 17213, 5% non glass is rejected and sent directly to landfill. The remaining 95% of non glass are sorted and sent to a local treatment facility for processing. This share of metals are recycled, while timber is conservatively assumed to be chipped to be used as secondary fuel. Module D claims the benefits of avoided production of metal through recycling, avoided production of heat and electricity through wood and plastic incineration. It also takes into account the loads of incineration and recycling activities. Specific national data are used for timber. According to Danish national statistics. 53% is recycled, 46% incinerated and 1% landfilled.

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	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
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	0 %

This EPD is product and factory specific and does not contain average calculations.

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 v3.8, Plastics Europe, Federal LCA Commons 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 ₂ e	2,06E+01	1,04E+00	6,63E+00	2,82E+01	1,84E+00	5,56E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,14E-01	4,01E+01	1,31E+00	-2,50E+01
GWP – fossil	kg CO ₂ e	4,96E+01	1,04E+00	5,89E+00	5,66E+01	1,84E+00	2,60E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,14E-01	1,58E+01	2,98E-02	-2,21E+01
GWP – biogenic	kg CO ₂ e	-3,16E+01	1,33E-05	7,32E-01	-3,09E+01	7,73E-04	5,30E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,63E-10	2,43E+01	1,28E+00	-2,85E+00
GWP – LULUC	kg CO ₂ e	2,57E+00	5,25E-04	1,19E-02	2,58E+00	7,76E-04	1,04E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,21E-05	6,01E-04	1,20E-05	-3,66E-02
Ozone depletion pot.	kg CFC ₁₁ e	3,87E-06	2,30E-07	3,10E-07	4,41E-06	4,23E-07	6,41E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,63E-08	5,28E-08	2,15E-09	-1,32E-06
Acidification potential	mol H ⁺ e	3,51E-01	1,37E-02	2,49E-02	3,89E-01	5,22E-03	4,11E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,84E-04	6,08E-03	8,26E-05	-1,57E-01
EP-freshwater ²⁾	kg Pe	1,30E-03	6,10E-06	3,44E-04	1,65E-03	1,37E-05	4,11E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,35E-07	2,58E-05	2,86E-07	-8,41E-04
EP-marine	kg Ne	5,68E-02	3,32E-03	6,21E-03	6,64E-02	1,03E-03	1,31E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,44E-04	1,82E-03	4,30E-05	-2,07E-02
EP-terrestrial	mol Ne	5,55E-01	3,68E-02	7,17E-02	6,63E-01	1,14E-02	1,46E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,59E-03	2,00E-02	2,63E-04	-2,64E-01
POCP (“smog”) ³⁾	kg NMVOCe	1,97E-01	1,01E-02	2,04E-02	2,28E-01	4,39E-03	3,74E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,07E-04	5,07E-03	8,45E-05	-7,99E-02
ADP-minerals & metals ⁴⁾	kg Sbe	3,82E-04	2,77E-06	6,10E-05	4,45E-04	7,23E-06	3,51E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,68E-07	3,55E-05	3,04E-08	-9,40E-05
ADP-fossil resources	MJ	4,37E+02	1,47E+01	7,92E+01	5,31E+02	2,73E+01	1,05E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,72E+00	7,93E+00	2,00E-01	-2,70E+02
Water use ⁵⁾	m ³ e depr.	2,42E+01	6,08E-02	3,75E+00	2,81E+01	1,32E-01	9,79E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,68E-03	1,01E+00	1,79E-03	-4,42E+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.

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	3,08E-06	7,07E-08	2,16E-07	3,37E-06	1,41E-07	6,25E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,32E-08	6,40E-08	1,44E-09	-1,66E-06
Ionizing radiation ⁶⁾	kBq U235e	3,27E+00	7,39E-02	9,45E-01	4,28E+00	1,44E-01	1,44E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,17E-03	8,81E-02	1,06E-03	-3,68E+00
Ecotoxicity (freshwater)	CTUe	1,82E+03	1,14E+01	1,24E+02	1,96E+03	2,30E+01	1,70E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,54E+00	2,36E+01	9,93E+01	-5,49E+02
Human toxicity, cancer	CTUh	1,08E-07	4,66E-10	8,85E-09	1,18E-07	7,35E-10	9,67E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,79E-11	1,35E-09	9,29E-12	-1,45E-08
Human tox. non-cancer	CTUh	1,28E-06	1,02E-08	1,05E-07	1,40E-06	2,22E-08	3,12E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,53E-09	5,65E-08	2,54E-10	-1,88E-07

SQP ⁷⁾	-	3,05E+02	8,83E+00	4,42E+02	7,56E+02	1,85E+01	9,05E-01	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,98E+00	5,66E+00	3,78E-01	-1,70E+02
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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	1,94E+02	1,75E-01	9,83E+01	2,92E+02	4,18E-01	4,32E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,93E-02	9,31E-01	7,74E-03	-4,69E+01
Renew. PER as material	MJ	3,74E+02	0,00E+00	-2,61E+01	3,48E+02	0,00E+00	-4,77E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-2,85E+02	-1,50E+01	8,26E+01
Total use of renew. PER	MJ	5,68E+02	1,75E-01	7,22E+01	6,40E+02	4,18E-01	-4,73E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,93E-02	-2,84E+02	-1,50E+01	3,57E+01
Non-re. PER as energy	MJ	6,14E+02	1,47E+01	7,29E+01	7,01E+02	2,73E+01	1,05E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,72E+00	7,93E+00	2,00E-01	-2,68E+02
Non-re. PER as material	MJ	9,36E+01	0,00E+00	3,67E-01	9,39E+01	0,00E+00	-8,76E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-8,09E+01	-4,26E+00	-7,91E-02
Total use of non-re. PER	MJ	7,07E+02	1,47E+01	7,33E+01	7,95E+02	2,73E+01	-7,71E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,72E+00	-7,30E+01	-4,06E+00	-2,68E+02
Secondary materials	kg	9,46E-01	5,37E-03	2,29E-01	1,18E+00	9,86E-03	7,26E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,76E-04	7,80E-03	5,96E-05	7,05E-01
Renew. secondary fuels	MJ	2,75E-02	4,10E-05	1,37E+00	1,39E+00	1,10E-04	3,92E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,81E-06	1,38E-04	2,81E-06	-5,86E-03
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	4,21E-01	1,59E-03	1,48E-01	5,70E-01	3,58E-03	1,29E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,22E-04	4,14E-03	1,87E-04	-2,41E-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	8,82E+00	1,76E-02	5,31E-01	9,36E+00	3,24E-02	5,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,28E-03	6,99E-02	0,00E+00	-3,41E+00
Non-hazardous waste	kg	7,83E+01	2,53E-01	1,80E+01	9,66E+01	5,79E-01	1,18E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,74E-02	1,33E+01	6,46E-01	-5,56E+01
Radioactive waste	kg	6,02E-03	1,02E-04	5,01E-04	6,62E-03	1,87E-04	4,97E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,15E-05	2,77E-05	0,00E+00	-1,18E-03

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	4,94E-01	4,94E-01	0,00E+00	1,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,22E+01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	3,82E+00	3,82E+00	0,00E+00	9,13E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	6,56E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	1,03E+02	1,03E+02	0,00E+00	3,56E+01	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 ₂ e	4,45E+01	1,03E+00	5,75E+00	5,13E+01	1,82E+00	2,59E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,13E-01	1,58E+01	3,50E-02	-2,15E+01
Ozone depletion Pot.	kg CFC ₋₁₁ e	3,93E-06	1,82E-07	2,63E-07	4,37E-06	3,35E-07	5,29E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,08E-08	4,53E-08	1,71E-09	-1,14E-06
Acidification	kg SO ₂ e	2,77E-01	1,10E-02	1,88E-02	3,07E-01	4,29E-03	3,12E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,76E-04	4,70E-03	6,44E-05	-1,32E-01
Eutrophication	kg PO ₄ ³ e	8,63E-02	1,40E-03	1,43E-02	1,02E-01	9,39E-04	5,33E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,56E-05	3,18E-03	1,43E-03	-3,39E-02
POCP ("smog")	kg C ₂ H ₄ e	2,20E-02	3,20E-04	1,33E-03	2,36E-02	2,17E-04	1,49E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,47E-05	1,62E-04	8,15E-06	-7,52E-03
ADP-elements	kg Sbe	5,86E-04	2,71E-06	6,06E-05	6,49E-04	7,07E-06	3,42E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,59E-07	3,54E-05	2,90E-08	-9,02E-05
ADP-fossil	MJ	6,99E+02	1,47E+01	8,17E+01	7,96E+02	2,73E+01	1,05E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,72E+00	7,93E+00	2,00E-01	-2,66E+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.

Elma Avdyli, as an authorized verifier acting for EPD Hub Limited
03.05.2024

