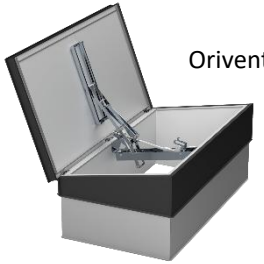
ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Orivent Smoke Vent Hatch
KeraGroup Oy

Orivent 23M taso

Orivent 23M harja



Orivent 31M

Orivent 51M

EPD HUB, HUB-3743
Published on 31.07.2025, last updated on 31.07.2025, valid until 31.07.2030

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	KeraGroup Oy
Address	Käkeläntie 41,16300, Orimattila, FI
Contact details	info@keragroup.fi
Website	https://www.keragroup.fi/fi/keragroup/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Tommi Tuominen
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Imane Uald Lamkaddam as an authorized verifier for EPD Hub

This EPD is intended for business-to-business and/or business-to-consumer communication. 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	Orivent Smoke Vent Hatch
Additional labels	Orivent 23M Flat, Orivent 23M Ridge, Orivent 51 and Orivent 31
Product reference	
Place(s) of raw material origin	
Place of production	Hevostie 6 Oriville factory, Finland
Place(s) of installation and use	
Period for data	2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-2,6%/+10%
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	85,8

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 Kg of the representative product
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	3,76E+00
GWP-total, A1-A3 ($kgCO_2e$)	3,76E+00
Secondary material, inputs (%)	16
Secondary material, outputs (%)	77
Total energy use, A1-A3 (kWh)	12,9
Net freshwater use, A1-A3 (m^3)	0,07

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Kera Group Oy is a company based in Orimattila that manufactures plastic products for the construction industry. The company's expertise is focused on various daylight solutions and fire safety-enhancing smoke ventilation systems. The main products include smoke vents, roof domes, and various home and living solutions such as light-transmitting roofing sheets, terraces, and terrace glazing.

PRODUCT DESCRIPTION

Orivent 23, 31, and 51 are CE-marked smoke ventilation hatches tested according to the EN 12101-2 standard. They are particularly suitable for industrial and commercial buildings, such as logistics centers and warehouses and also into office buildings. The hatches provide effective smoke extraction and can also be used for daily ventilation with motorized openers. Installation on low-pitched or flat roofs. Multiple options available for opening mechanisms. The products are thermally insulated, using mineral wool as the insulation material.

Detailed technical information and dimensions are available on the manufacturer's website:

https://www.keragroup.fi/fi/keragroup

Further information can be found at:
https://www.keragroup.fi/fi/keragroup/

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	90,75	EU, China
Minerals	8,67	Finland
Fossil materials	0,58	EU
Bio-based materials	0	

BIOGENIC CARBON CONTENT

Product’s biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0,005945455
Biogenic carbon content in packaging, kg C	0,028363636

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Kg of the representative product
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	Deconstruction/ demolition	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.

A market-based approach is used in modelling the electricity mix utilized in the factory.

The body is sheet metal and core is mineral wool. Outer and inner face sheets are hot-dip galvanized, pre-finished thin sheet metal and core is made of mineral wool, thickness 70/100 mm. The components are manufactured in several countries in Europe and transported to the manufacturing facility in Orimattila Finland. Some minor parts are manufactured in China. The manufacturing process includes cutting, bending, (painting), assembly and finally packaging. These process requires electricity and heating. A wooden pallet, plastic packing material and metal strap are used as packaging materials for transporting the finished product from the factory.
The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

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.

Distance of the representative product transportation from production plant to building site is 216 km and the transportation method is assumed to be a lorry. To be conservative, empty returns are included in this study as implemented through an average load factor in the Ecoinvent transport datapoints. Transportation does not cause losses as product is packed properly. Environmental impacts from installation into the building include waste packaging materials (A5) and release of biogenic carbon dioxide from wood pallets/cardboard boxes. The impact of material production, its processing and its disposal as installation waste are also included. Electricity and diesel consumption for installation of the system is included based on an assumed scenario for product installation.

PRODUCT USE AND MAINTENANCE (B1-B7)

Routine maintenance includes checking functionality, and any emissions are negligible. Maintenance inspection is part of the general inspection of the building. Therefore, these modules have been left out of consideration. Sometimes parts may be replaced if they are broken, but it depends on the application and the technology installed in the product.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

C1 – Deconstruction/Demolition:

Manual disassembly is assumed with negligible environmental impact.

C2 – Transport:

The product is transported by truck to a regional waste treatment facility. The distance reflects a typical regional scenario based on standard LCA assumptions. In this project it is assumed to be 130 km.

C3 – Waste processing:

The product consists of 90,75 % metals, 8,64 % minerals, and 0,58 % fossil-based materials. Steel is 85 % recycled.

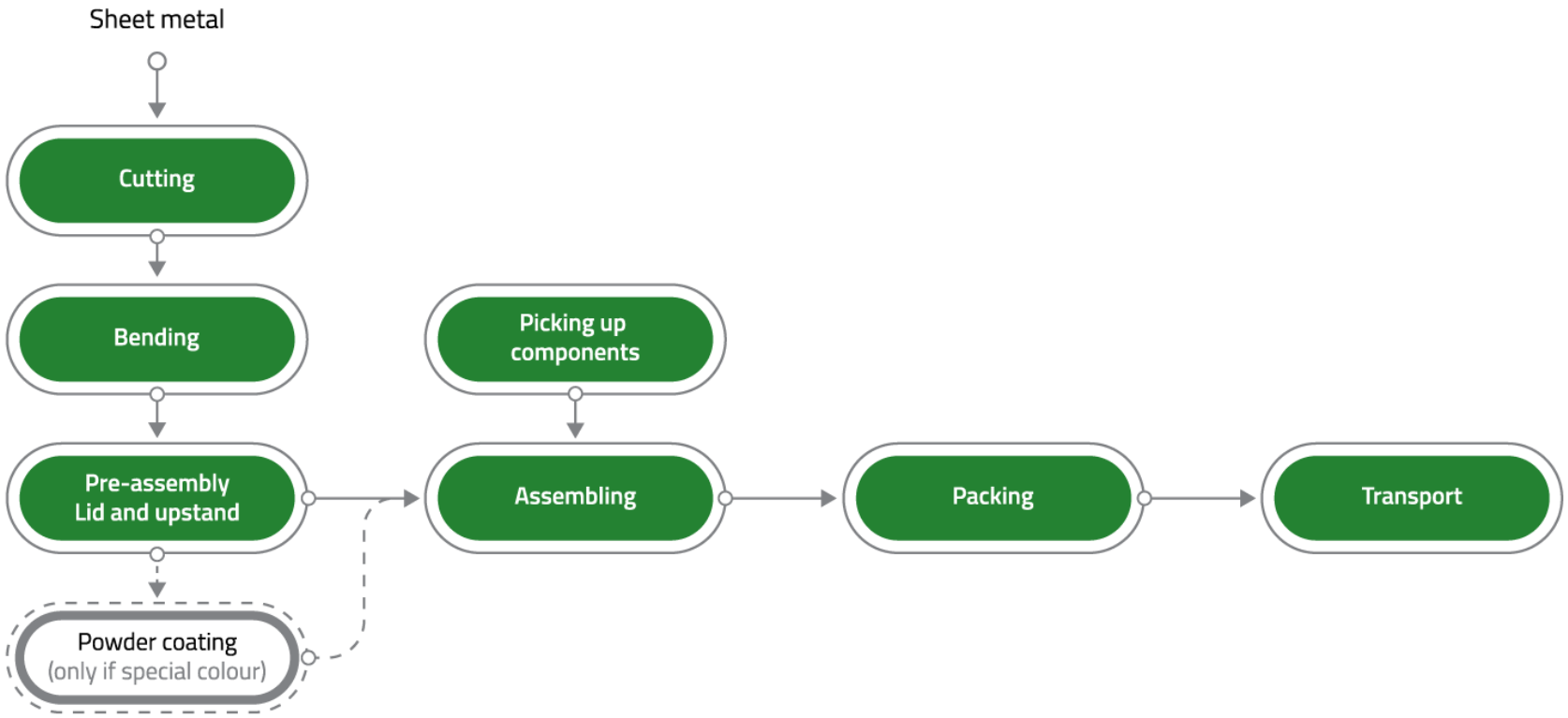
C4 – Disposal:

Residual non-recyclable materials, including mineral wool and fossil-based components, are disposed of through landfill or municipal waste treatment in accordance with regional regulations.

Module D – Benefits and loads beyond the system boundary:

Recycled steel has been accounted for and calculated in Module 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.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

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	Partly allocated by mass or volume
Packaging material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by revenue

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	-2,6%/+10%

Variation GWP -fossil with max and min compared to representative is -2,6%/+10% Shafts are made in various sizes. The sizes presented here are min. 900x900x450, max. 1200x2400x750, and representative 1000x1000x750. The calculations have been made based on the representative size. The process and raw materials are the same regarding the materials, with slight variations possible depending on the product size. The product weights are 125 kg (min.), 211 kg (max.), and 132 kg (representative). The finished products are packed on a pallet.

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 v3.10.1 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

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	3,17E+00	1,00E-01	4,92E-01	3,76E+00	2,55E-02	3,47E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,95E-02	3,56E-02	1,24E-02	-1,31E+00
GWP – fossil	kg CO_2e	3,19E+00	9,99E-02	4,67E-01	3,76E+00	2,54E-02	6,79E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,95E-02	2,00E-02	1,24E-02	-1,32E+00
GWP – biogenic	kg CO_2e	-2,34E-02	2,19E-05	2,44E-02	1,02E-03	5,76E-06	2,79E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,62E-06	1,56E-02	-5,62E-07	8,40E-03
GWP – LULUC	kg CO_2e	2,06E-03	4,40E-05	5,19E-04	2,62E-03	1,14E-05	3,76E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,75E-05	2,15E-05	8,63E-07	-1,72E-04
Ozone depletion pot.	kg CFC_{-11}e	3,17E-08	1,63E-09	1,27E-08	4,61E-08	3,75E-10	4,14E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,52E-10	2,35E-10	4,44E-11	-4,56E-09
Acidification potential	mol H^+e	1,22E-02	6,58E-04	9,03E-04	1,38E-02	8,67E-05	1,43E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,32E-04	2,08E-04	1,16E-05	-5,22E-03
EP-freshwater[2)]	kg Pe	2,80E-04	7,53E-06	5,16E-05	3,40E-04	1,98E-06	6,69E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,07E-06	1,12E-05	1,45E-07	-5,65E-04
EP-marine	kg Ne	2,51E-03	2,21E-04	2,39E-04	2,97E-03	2,85E-05	1,47E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,27E-05	4,61E-05	4,55E-06	-1,15E-03
EP-terrestrial	mol Ne	3,11E-02	2,42E-03	2,30E-03	3,58E-02	3,10E-04	5,82E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,64E-04	5,20E-04	4,84E-05	-1,27E-02
POCP ("smog")[3)]	kg NMVOCe	9,20E-03	7,97E-04	1,28E-03	1,13E-02	1,28E-04	1,89E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,83E-04	1,54E-04	1,67E-05	-4,31E-03
ADP-minerals & metals[4)]	kg Sbe	2,15E-04	2,73E-07	1,23E-06	2,16E-04	7,10E-08	7,97E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,29E-07	1,23E-06	2,97E-09	-1,26E-05
ADP-fossil resources	MJ	3,33E+01	1,37E+00	7,42E+00	4,21E+01	3,69E-01	3,57E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,54E-01	2,34E-01	3,64E-02	-1,21E+01
Water use[5)]	m^3e depr.	6,43E-01	7,16E-03	8,51E-02	7,35E-01	1,82E-03	1,05E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,57E-03	4,27E-03	6,72E-04	-2,21E-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, EF 3.1

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	1,12E-07	8,62E-09	1,09E-08	1,32E-07	2,55E-09	2,48E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,14E-09	2,82E-09	2,37E-10	-8,67E-08
Ionizing radiation[6)]	kBq U235e	4,92E-02	1,56E-03	1,82E-02	6,90E-02	3,21E-04	9,76E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,49E-04	1,98E-03	2,81E-05	4,51E-02
Ecotoxicity (freshwater)	CTUe	2,52E+01	1,98E-01	8,32E-01	2,62E+01	5,22E-02	1,34E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,75E-02	1,37E-01	2,12E-02	-3,21E+00
Human toxicity, cancer	CTUh	2,71E-08	1,80E-11	3,60E-11	2,71E-08	4,20E-12	1,42E-12	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,71E-12	1,56E-11	3,87E-13	-2,11E-10
Human tox. non-cancer	CTUh	3,36E-08	7,77E-10	1,90E-09	3,63E-08	2,39E-10	7,32E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,47E-10	1,06E-09	9,68E-12	-1,04E-08
SQP[7)]	-	9,52E+00	9,11E-01	9,54E+00	2,00E+01	3,72E-01	3,46E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,34E-01	4,55E-01	6,91E-02	-3,83E+00

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	3,51E+00	2,41E-02	3,84E+00	7,38E+00	5,06E-03	-1,01E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,60E-03	4,36E-02	4,28E-04	-6,25E-01
Renew. PER as material	MJ	2,28E-01	0,00E+00	9,12E-01	1,14E+00	0,00E+00	-9,12E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,28E-01	-1,01E-01	6,02E-02
Total use of renew. PER	MJ	3,74E+00	2,41E-02	4,76E+00	8,52E+00	5,06E-03	-1,93E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,60E-03	-8,40E-02	-1,00E-01	-5,65E-01
Non-re. PER as energy	MJ	3,31E+01	1,37E+00	4,62E+00	3,90E+01	3,69E-01	-1,06E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,54E-01	1,81E-01	-7,70E-02	-1,21E+01
Non-re. PER as material	MJ	6,08E-02	0,00E+00	2,09E-01	2,70E-01	0,00E+00	-2,09E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-3,05E-02	-3,04E-02	7,80E-02
Total use of non-re. PER	MJ	3,31E+01	1,37E+00	4,83E+00	3,93E+01	3,69E-01	-3,15E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,54E-01	1,51E-01	-1,07E-01	-1,20E+01
Secondary materials	kg	1,60E-01	8,10E-04	2,38E-02	1,85E-01	1,57E-04	2,84E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,49E-04	2,87E-04	1,04E-05	7,19E-01
Renew. secondary fuels	MJ	3,66E-04	6,98E-06	3,27E-02	3,30E-02	2,00E-06	3,03E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,17E-06	1,33E-05	2,36E-07	-1,08E-04
Non-ren. secondary fuels	MJ	9,20E-10	0,00E+00	0,00E+00	9,20E-10	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	2,80E-02	1,93E-04	4,08E-02	6,90E-02	5,46E-05	-8,81E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,35E-05	1,25E-04	4,48E-05	-3,02E-03

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	3,21E-01	2,65E-03	1,30E-02	3,37E-01	6,25E-04	2,65E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,66E-04	1,55E-03	3,79E-04	-4,31E-01
Non-hazardous waste	kg	4,74E+00	4,68E-02	1,61E+00	6,40E+00	1,16E-02	1,59E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,81E-02	5,62E-02	7,22E-03	-3,41E+00
Radioactive waste	kg	3,32E-04	3,86E-07	3,98E-06	3,37E-04	7,87E-08	2,44E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,10E-07	5,08E-07	6,95E-09	1,17E-05

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	3,47E-05	0,00E+00	5,47E-02	5,47E-02	0,00E+00	2,47E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	7,70E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	2,91E-03	0,00E+00	7,30E-03	1,02E-02	0,00E+00	2,23E-02	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	1,83E-04	0,00E+00	0,00E+00	1,83E-04	0,00E+00	1,30E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,23E-02	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,48E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	5,20E-03	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,50E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	7,10E-03	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	1,12E+00	9,94E-02	4,65E-01	1,69E+00	2,53E-02	8,29E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,93E-02	2,00E-02	1,24E-02	-1,31E+00
Ozone depletion Pot.	kg $CFC_{-11}e$	4,78E-09	1,30E-09	1,04E-08	1,64E-08	3,00E-10	3,34E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,41E-10	1,93E-10	3,54E-11	-4,97E-09
Acidification	kg SO_2e	3,28E-03	5,00E-04	7,25E-04	4,51E-03	6,62E-05	1,06E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,01E-04	1,67E-04	8,56E-06	-4,21E-03
Eutrophication	kg PO_4^3e	1,28E-03	9,66E-05	2,37E-03	3,75E-03	1,61E-05	3,80E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,45E-05	2,42E-05	2,68E-06	-7,75E-04
POCP (“smog”)	kg C_2H_4e	2,95E-04	3,62E-05	1,17E-04	4,48E-04	5,90E-06	1,20E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,03E-06	9,89E-06	7,85E-07	-6,58E-04
ADP-elements	kg Sbe	7,70E-05	2,66E-07	1,20E-06	7,85E-05	6,92E-08	7,68E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,26E-07	1,23E-06	2,64E-09	-1,26E-05
ADP-fossil	MJ	1,32E+01	1,34E+00	2,99E+02	3,13E+02	3,64E-01	3,41E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,47E-01	1,99E-01	3,59E-02	-1,29E+01

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	3,19E+00	1,00E-01	4,68E-01	3,76E+00	2,54E-02	6,80E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,95E-02	2,01E-02	1,24E-02	-1,32E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero.

SCENARIO DOCUMENTATION

MANUFACTURING ENERGY SCENARIO DOCUMENTATION

Scenario parameter	Value
Electricity data source and quality	Electricity production, wind, 1-3MW turbine, onshore; Electricity production, hydro, run-of-river
Electricity CO2e / kWh	0,0077
District heating data source and quality	Heat production, natural gas, at industrial furnace >100kW
District heating CO2e / kWh	0,0773

TRANSPORT SCENARIO DOCUMENTATION A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	Diesel powered truck
Average transport distance, km	216
Capacity utilization (including empty return) %	100
Bulk density of transported products	176
Volume capacity utilization factor	<1

THIRD-PARTY 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.

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited
31.07.2025