ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

ZeroPan
Koskisen Oyj

EPD HUB, HUB-3494
Published on 19.06.2025, last updated on 20.06.2025, valid until 18.12.2026

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	Koskisen Oyj
Address	Tehdastie 2, 16600 Järvelä, Finland
Contact details	riitta.ahokas@koskisen.com
Website	www.koskisen.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Design phase EPD
Parent EPD number	HUB-2306
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Riitta Ahokas
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Haiha Nguyen, as an authorized verifier acting for EPD Hub Limited

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	ZeroPan
Additional labels	-
Product reference	-
Place(s) of raw material origin	Finland
Place of production	Kärkölä, Järvelä, Finland
Place(s) of installation and use	Finland
Period for data	1.1.2024 - 31.12.2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	0
A1-A3 Specific data (%)	55,8

ENVIRONMENTAL DATA SUMMARY

Declared unit	one cubic meter
Declared unit mass	700 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	1,90E+02
GWP-total, A1-A3 ($kgCO_2e$)	-1,01E+03
Secondary material, inputs (%)	100
Secondary material, outputs (%)	60
Total energy use, A1-A3 (kWh)	577
Net freshwater use, A1-A3 (m^3)	5,44

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Koskisen is a pioneer in the sawmill and panel industry. We process sustainable and responsibly sourced wood raw material into high-quality products and sells them to demanding customers in Finland and around the world.
business built over a hundred years is based on forests and continuous renewal, which is why caring for nature and the environment from one generation to the next is at the core of our operations and strategy. Koskisen's business consists of the Sawmill and Panel Industry segments.The Panel industry business segment produces plywood, thin plywood, veneer, chipboard and interior solutions for utility vehicles. Koskisen's production facilities are located in Järvelä and Hirvensalmi in Finland and Toporów in Poland. A new wood processing in Järvelä, where production starts gradually during 2023 and 2024. It increases the Sawmill business segment's current annual sawn timber production capacity of 300,000 cubic meters to 400,000 cubic meters. With the investment, the new production facility will become a fully integrated wood processing unit.

PRODUCT DESCRIPTION

Zero furniture board is a completely new type of interior board in which the fossil binder has been replaced with a renewable wood-based binder lignin. The wood raw materials for Zero board come from the side streams of Koskisen's manufacturing processes. The main component is wood chips and the lignin based resin.
Zero furniture board meets the standards set for furniture boards in terms of bending strength and internal tensile strength. Zero board is manufactured in strength class P2 (EN 312), the surface of the board is tight and smooth making it is easy to coat.
Raw material Sawdust and wood chip side streams from Koskisen's wood industry
E312
EPA 40 CFR, TSCA Title VI, § 770.10.
Thickness 6–36mm
Sizes Uncoated: 1220x2630mm, 1290x3045mm, 1830x2630mm, 1200–1830x1830–4580mm, Other sizes at request
Coated: 1830x2750mm
Density 700kg/m3
The panel has 6 % of moisture after the process in the packing stage. Zero furniture board is used for: cabinetry, furniture, doors, office and shop furniture, kitchen and bathroom furniture, window and curtain boards and other flat surfaces.

Further information can be found at:
www.koskisen.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	
Minerals	0	
Fossil materials	1	EU
Bio-based materials	99	Finland

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	319
Biogenic carbon content in packaging, kg C	9,5

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	one cubic meter
Mass per declared unit	700 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.

A1: Wood material are sourced from Finland and it is certified according to PEFC or FSC. The glue is bio-based.
A2: All raw materials are reach the site by road. Preprepared resin is produced in Finland. Chipboard is produced from our own side streams. Transportation distance vary from 0,5 to 93 km.
A3: Manufacturing process includes following steps; wood dust may contain bigger particles which needs chipping - drying - sieving of core and surface particles - gluing - forming - pressing - cutting - sanding - packing. Manufacturing process needs electricity which is sourced from the local grid network. Manufacturing losses are incinerated in our own factory and heat is used for drying. Heating is supplemented by fuel oil. Fossil based glue is replaced with bio-based glue and it does not affect to the manufacturing process.

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.

A4: Transport distance from the manufacturing site to users or warehouses is in average 204 km by 32t lorry, estimation is based on average distance from Järvelä to customers. (waste) is assumed to be 50 km. End of life of packing is based on European statistic data. Plastic 40 % recycled, 37 % incinerated, 23 % land filled. Paper 83 % recycled, 8 % incinerated, 9 % land filled. wood 23 % recycled, 30 % incinerated, 38 % land filled.

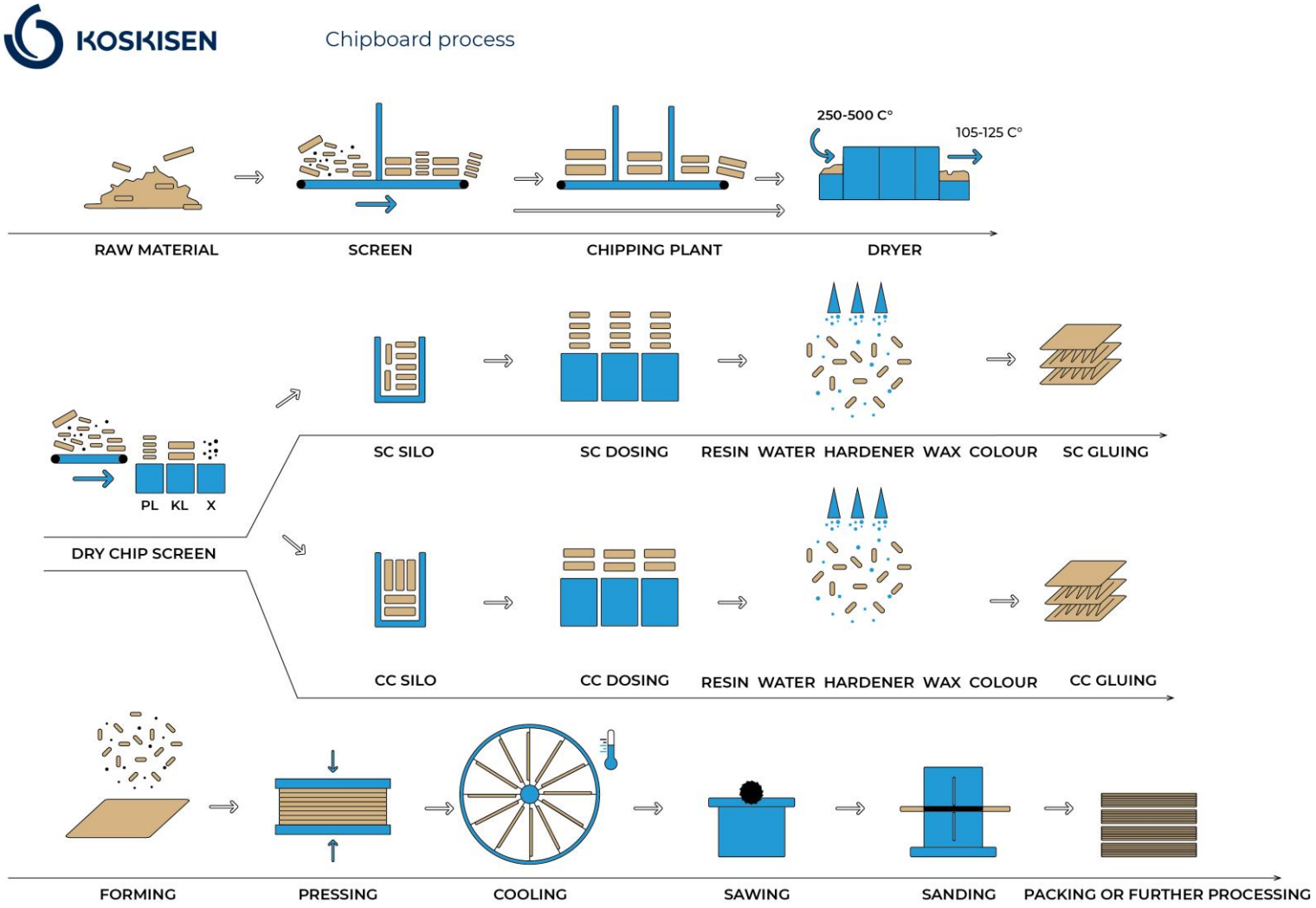
PRODUCT USE AND MAINTENANCE (B1-B7)

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)

C1: Assumed energy consumption in demolition process is 7 kWh/m3.
C2: Transportation to the waste treatment is 50 km. Transportation to incineration 150 km.
waste 93 % are burned and the rest 7 % is land filled. Burned with energy recovering.
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	No allocation
Packaging material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	-
Variation in GWP-fossil for A1-A3, %	0

The thickness and dimensions of the products may vary, but it does not affect any variety in the raw materials. Energy of the production has been gathered from the whole mill and those have been allocated according to the mass, no variety can been seen.

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

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	-1,12E+03	1,56E+01	8,71E+01	-1,01E+03	1,60E+01	3,60E+01	MND	MND	MND	MND	MND	MND	MND	2,52E+00	1,13E+01	1,10E+03	8,27E+01	-4,60E+01
GWP – fossil	kg CO_2e	1,12E+02	1,56E+01	6,28E+01	1,90E+02	1,59E+01	9,83E-01	MND	MND	MND	MND	MND	MND	MND	2,52E+00	1,13E+01	6,88E+00	7,61E-01	-5,70E+01
GWP – biogenic	kg CO_2e	-1,23E+03	1,73E-03	2,38E+01	-1,21E+03	3,35E-03	3,50E+01	MND	MND	MND	MND	MND	MND	MND	2,57E-04	0,00E+00	1,09E+03	8,20E+01	1,13E+01
GWP – LULUC	kg CO_2e	6,10E-01	6,97E-03	4,91E-01	1,11E+00	5,96E-03	1,19E-03	MND	MND	MND	MND	MND	MND	MND	2,59E-04	5,06E-03	9,73E-03	2,10E-04	-3,17E-01
Ozone depletion pot.	kg CFC_{-11}e	3,25E-05	2,30E-07	9,25E-07	3,36E-05	3,24E-07	1,30E-08	MND	MND	MND	MND	MND	MND	MND	3,86E-08	1,67E-07	9,22E-08	8,54E-09	-6,57E-07
Acidification potential	mol H^+e	9,80E-01	5,31E-02	5,79E-01	1,61E+00	8,88E-02	4,42E-03	MND	MND	MND	MND	MND	MND	MND	2,28E-02	3,85E-02	8,27E-02	7,90E-03	-3,28E-01
EP-freshwater[2)]	kg Pe	6,34E-02	1,21E-03	1,76E-02	8,22E-02	1,07E-03	2,12E-04	MND	MND	MND	MND	MND	MND	MND	7,28E-05	8,80E-04	4,05E-03	3,29E-04	-2,33E-02
EP-marine	kg Ne	2,78E-01	1,75E-02	2,19E-01	5,14E-01	3,71E-02	4,78E-03	MND	MND	MND	MND	MND	MND	MND	1,06E-02	1,27E-02	2,37E-02	4,19E-03	-3,37E-02
EP-terrestrial	mol Ne	2,38E+00	1,90E-01	2,40E+00	4,97E+00	4,05E-01	1,79E-02	MND	MND	MND	MND	MND	MND	MND	1,16E-01	1,38E-01	3,49E-01	4,03E-02	-3,47E-01
POCP ("smog")[3)]	kg NMVOCe	8,34E-01	7,83E-02	6,36E-01	1,55E+00	1,37E-01	5,89E-03	MND	MND	MND	MND	MND	MND	MND	3,45E-02	5,68E-02	5,71E-02	1,01E-02	-1,20E-01
ADP-minerals & metals[4)]	kg Sbe	1,35E-03	4,35E-05	2,50E-04	1,65E-03	4,37E-05	2,30E-06	MND	MND	MND	MND	MND	MND	MND	9,05E-07	3,15E-05	1,57E-05	1,56E-06	-1,23E-04
ADP-fossil resources	MJ	2,69E+03	2,26E+02	1,38E+03	4,30E+03	2,32E+02	1,13E+01	MND	MND	MND	MND	MND	MND	MND	3,30E+01	1,64E+02	1,01E+02	6,74E+00	-1,15E+03
Water use[5)]	m^3e depr.	1,05E+02	1,12E+00	4,73E+01	1,54E+02	1,18E+00	3,06E-01	MND	MND	MND	MND	MND	MND	MND	8,25E-02	8,10E-01	9,36E+00	1,60E+00	-2,33E+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

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	7,16E-07	1,56E-06	1,49E-05	1,71E-05	1,97E-06	7,77E-08	MND	MND	MND	MND	MND	MND	MND	6,47E-07	1,13E-06	6,47E-07	8,84E-08	-2,40E-06
Ionizing radiation[6)]	kBq U235e	4,24E+00	1,97E-01	5,31E+01	5,75E+01	2,78E-01	3,05E-02	MND	MND	MND	MND	MND	MND	MND	1,46E-02	1,43E-01	1,80E+00	7,68E-03	-4,16E+01
Ecotoxicity (freshwater)	CTUe	6,29E+01	3,20E+01	3,65E+02	4,60E+02	2,72E+01	4,66E+00	MND	MND	MND	MND	MND	MND	MND	1,82E+00	2,32E+01	1,48E+02	5,16E+00	-1,21E+02
Human toxicity, cancer	CTUh	2,55E-06	2,57E-09	1,37E-07	2,69E-06	5,37E-09	4,04E-10	MND	MND	MND	MND	MND	MND	MND	2,59E-10	1,87E-09	7,64E-09	1,42E-09	-1,47E-08
Human tox. non-cancer	CTUh	1,13E-07	1,46E-07	1,08E-06	1,34E-06	1,81E-07	2,20E-08	MND	MND	MND	MND	MND	MND	MND	4,11E-09	1,06E-07	4,82E-07	9,54E-08	-5,70E-07
SQP[7)]	-	2,37E+04	2,28E+02	6,83E+03	3,08E+04	2,31E+02	1,05E+01	MND	MND	MND	MND	MND	MND	MND	2,31E+00	1,65E+02	2,78E+01	1,89E+00	-5,96E+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	-3,55E+03	3,10E+00	1,41E+03	-2,14E+03	3,75E+00	-3,44E+02	MND	MND	MND	MND	MND	MND	MND	2,09E-01	2,25E+00	-3,96E+03	-8,30E+02	3,80E+03
Renew. PER as material	MJ	7,50E+03	0,00E+00	-5,12E+01	7,44E+03	0,00E+00	-3,06E+02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-6,64E+03	-5,00E+02	1,34E+03
Total use of renew. PER	MJ	3,94E+03	3,10E+00	1,36E+03	5,31E+03	3,75E+00	-6,49E+02	MND	MND	MND	MND	MND	MND	MND	2,09E-01	2,25E+00	-1,06E+04	-1,33E+03	5,14E+03
Non-re. PER as energy	MJ	2,68E+03	2,26E+02	1,30E+03	4,21E+03	2,33E+02	5,30E+00	MND	MND	MND	MND	MND	MND	MND	3,30E+01	1,64E+02	1,01E+02	6,74E+00	-1,15E+03
Non-re. PER as material	MJ	1,49E+02	0,00E+00	1,86E+01	1,68E+02	0,00E+00	-2,57E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,32E+02	-9,93E+00	8,48E+02
Total use of non-re. PER	MJ	2,83E+03	2,26E+02	1,32E+03	4,37E+03	2,33E+02	-2,04E+01	MND	MND	MND	MND	MND	MND	MND	3,30E+01	1,64E+02	-3,06E+01	-3,19E+00	-3,01E+02
Secondary materials	kg	2,13E+03	9,63E-02	2,15E+00	2,14E+03	9,94E-02	7,93E-03	MND	MND	MND	MND	MND	MND	MND	1,37E-02	6,98E-02	1,08E-01	1,58E-02	-9,80E-02
Renew. secondary fuels	MJ	2,04E-03	1,22E-03	1,09E+01	1,09E+01	1,25E-03	7,79E-05	MND	MND	MND	MND	MND	MND	MND	3,58E-05	8,87E-04	5,95E-04	3,74E-05	-1,59E-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	4,17E+00	3,34E-02	1,23E+00	5,44E+00	3,40E-02	-2,87E-02	MND	MND	MND	MND	MND	MND	MND	2,18E-03	2,42E-02	9,86E-02	9,84E-03	-9,08E-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	6,35E-01	3,83E-01	4,99E+00	6,01E+00	3,33E-01	7,56E-02	MND	MND	MND	MND	MND	MND	MND	3,67E-02	2,78E-01	1,71E+00	3,17E-01	-4,73E+00
Non-hazardous waste	kg	3,48E+01	7,09E+00	1,33E+02	1,75E+02	6,66E+00	5,08E+01	MND	MND	MND	MND	MND	MND	MND	5,01E-01	5,14E+00	2,51E+02	5,03E+01	-1,34E+02
Radioactive waste	kg	1,07E-03	4,82E-05	1,15E-02	1,26E-02	6,87E-05	7,61E-06	MND	MND	MND	MND	MND	MND	MND	3,59E-06	3,50E-05	4,62E-04	1,91E-06	-9,07E-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	5,84E+01	5,84E+01	0,00E+00	7,93E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	4,20E+02	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	3,70E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	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	1,56E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	3,70E+02	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	2,14E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	5,08E+02	0,00E+00	0,00E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH4 fossil, CH4 biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Market for electricity, medium voltage (Reference product: electricity, medium voltage)
Electricity CO2e / kWh	0,14
District heating data source and quality	-
District heating CO2e / kWh	-

Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	Market for transport, freight, lorry >32 metric ton, EURO5 (Reference product: transport, freight, lorry >32 metric ton, EURO5)
Average transport distance, km	204
Capacity utilization (including empty return) %	50
Bulk density of transported products	700
Volume capacity utilization factor	1

Installation scenario documentation A5

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	0
Water use / m^3	0
Other resource use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	0
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	23,4
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	23,4
Direct emissions to ambient air, soil and water / kg	0

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	665
Collection process – kg collected with mixed waste	35
Recovery process – kg for re-use	0
Recovery process – kg for recycling	0
Recovery process – kg for energy recovery	665
Disposal (total) – kg for final deposition	35
Scenario assumptions e.g. transportation	Transportation to landfill 50 km, transport to incineration 150 km

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.

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited
19.06.2025

VERIFIED ISO 14025