ENVIRONMENTAL PRODUCT DECLARATION

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

KoskiVeneer
Koskisen Oyj

EPD HUB, HUB-3568
Published on 04.07.2025, last updated on 04.07.2025, valid until 03.07.2030

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	Koskisen Oyj
Address	Otavantie 395, 52550 HIRVENSALMI, Finland
Contact details	info@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	Manufactured 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	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	KoskiVeneer
Place(s) of raw material origin	Finland
Place of production	Hirvensalmi, Finland
Place(s) of installation and use	Finland, EU
Period for data	1.1.- 31.12.2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	n/a

ENVIRONMENTAL DATA SUMMARY

Declared unit	one cubic meter
Declared unit mass	655 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	4,34E+02
GWP-total, A1-A3 ($kgCO_2e$)	-1,13E+03
Secondary material, inputs (%)	0,04
Secondary material, outputs (%)	60
Total energy use, A1-A3 (kWh)	6130
Net freshwater use, A1-A3 (m^3)	6,92

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.
The main products are sawn timber, plywood, chipboard, thinplywood and veneers. The 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.

Decorative veneer production is located at Hirvensalmi. The produced veneer thicknesses are 0,15 mm - 1,5 mm and the used wood is birch. The production process is planned only to produce nice decorative thin veneers for decorative end uses; like furniture manufacturers, lamps, decorations.

PRODUCT DESCRIPTION

Product Rotary cut birch veneers in various sizes up to 2550 mm x 1310mm and various thickness 0,6 mm - 1,5 mm.
Veneer is throughout birch wood.

Qualities are A, AB, R, ABC and CD
KoskiVeneer is suitable especially for veneers for worktops, decorative faces for partitions and walls, laminating to frames, doorskins, moulded shaped/forms, form pressing, laminated veneer planks, dyed veneer and veneer layons.

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	0	-
Bio-based materials	100	Finland

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	311
Biogenic carbon content in packaging, kg C	6,1

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	one cubic meter
Mass per declared unit	655 kg
Functional unit	n/a
Reference service life	n/a

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.

This EPD represents birch veneers produced in Hirvensalmi, Finland. The veneers are used in various end use like molding for furniture item as surface and core and production for thin plywood products.

A1: Wood material are sourced from Finland and it is certified according to PEFC or FSC.

A2: All raw materials are reach the site by road.

A3: Electricity is used during the manufacturing process and is supplied from the local grid network. Heat is generated on-site at the manufacturing plant by combusting wood chips produced as waste during the production process. Wood arrive to Hirvensalmi, after immersion into the water they are peeled into veneers, dried, cut and packed.

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 customer 724 km, estimation is based on average distance from Hirvensalmi to customers.

A5: The transporting of the packing material after usage (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)

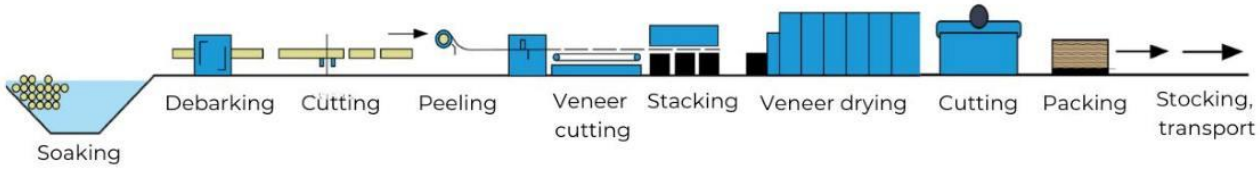
C1: Assumed energy consumption in demolition process is 6,5 kWh/m3.

C2: Transportation to the waste treatment to land filled is 50 km. Transportation to 150 km.

C3-4: Wood treatment scenario is based on Finnish waste statistic 2023: 58% recycling, 33% energy recovery, 2% compost, 7% landfill.

D: The benefits of material incineration and recycling are included

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 revenue
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	Not applicable
Variation in GWP-fossil for A1-A3, %	-

This EPD is product and factory specific.

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	-2,95E+03	3,53E+01	1,78E+03	-1,13E+03	5,21E+01	2,32E+01	MND	MND	MND	MND	MND	MND	MND	2,36E+00	1,06E+01	1,45E+03	1,09E+02	-5,33E+01
GWP – fossil	kg CO_2e	2,73E+01	3,53E+01	3,71E+02	4,34E+02	5,20E+01	8,15E-01	MND	MND	MND	MND	MND	MND	MND	2,36E+00	1,06E+01	6,44E+00	7,12E-01	-7,06E+01
GWP – biogenic	kg CO_2e	-2,98E+03	0,00E+00	1,41E+03	-1,57E+03	0,00E+00	2,24E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,44E+03	1,08E+02	1,74E+01
GWP – LULUC	kg CO_2e	7,35E-01	1,58E-02	2,08E-01	9,59E-01	1,96E-02	2,58E-04	MND	MND	MND	MND	MND	MND	MND	2,42E-04	4,73E-03	9,10E-03	1,97E-04	-1,17E-01
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	4,14E-07	5,21E-07	3,98E-06	4,92E-06	1,05E-06	2,96E-09	MND	MND	MND	MND	MND	MND	MND	3,62E-08	1,56E-07	8,63E-08	8,00E-09	-9,05E-07
Acidification potential	mol H^+e	1,48E-01	1,20E-01	4,51E+00	4,78E+00	1,68E-01	1,07E-03	MND	MND	MND	MND	MND	MND	MND	2,13E-02	3,61E-02	7,74E-02	7,39E-03	-4,13E-01
EP-freshwater[2)]	kg Pe	1,36E-02	2,75E-03	1,34E-01	1,51E-01	3,51E-03	4,92E-05	MND	MND	MND	MND	MND	MND	MND	6,82E-05	8,23E-04	3,79E-03	3,08E-04	-4,56E-02
EP-marine	kg Ne	6,51E-02	3,95E-02	1,90E+00	2,00E+00	5,71E-02	1,14E-03	MND	MND	MND	MND	MND	MND	MND	9,89E-03	1,18E-02	2,22E-02	3,92E-03	-4,73E-02
EP-terrestrial	mol Ne	6,62E-01	4,30E-01	2,05E+01	2,16E+01	6,21E-01	4,26E-03	MND	MND	MND	MND	MND	MND	MND	1,08E-01	1,29E-01	3,27E-01	3,77E-02	-4,41E-01
POCP ("smog")[3)]	kg NMVOCe	3,55E-01	1,77E-01	5,07E+00	5,60E+00	2,74E-01	1,39E-03	MND	MND	MND	MND	MND	MND	MND	3,23E-02	5,31E-02	5,34E-02	9,48E-03	-1,56E-01
ADP-minerals & metals[4)]	kg Sbe	5,53E-05	9,84E-05	8,77E-04	1,03E-03	1,44E-04	7,27E-07	MND	MND	MND	MND	MND	MND	MND	8,47E-07	2,95E-05	1,47E-05	1,46E-06	-1,13E-04
ADP-fossil resources	MJ	3,71E+02	5,12E+02	5,16E+03	6,04E+03	7,54E+02	2,57E+00	MND	MND	MND	MND	MND	MND	MND	3,09E+01	1,53E+02	9,48E+01	6,31E+00	-1,19E+03
Water use[5)]	m^3e depr.	3,86E+00	2,53E+00	2,37E+02	2,44E+02	3,86E+00	8,10E-02	MND	MND	MND	MND	MND	MND	MND	7,72E-02	7,58E-01	8,76E+00	1,49E+00	-2,38E+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	1,27E-06	3,53E-06	1,19E-04	1,24E-04	5,18E-06	1,75E-08	MND	MND	MND	MND	MND	MND	MND	6,06E-07	1,06E-06	6,05E-07	8,28E-08	-2,36E-06
Ionizing radiation[6)]	kBq U235e	3,58E-01	4,46E-01	6,32E+01	6,40E+01	9,09E-01	8,09E-03	MND	MND	MND	MND	MND	MND	MND	1,37E-02	1,34E-01	1,68E+00	7,18E-03	-2,35E+01
Ecotoxicity (freshwater)	CTUe	1,38E+02	7,24E+01	1,55E+03	1,76E+03	8,89E+01	1,86E+00	MND	MND	MND	MND	MND	MND	MND	1,70E+00	2,17E+01	1,39E+02	4,83E+00	-1,49E+02
Human toxicity, cancer	CTUh	1,87E-08	5,82E-09	8,10E-07	8,35E-07	8,57E-09	1,25E-10	MND	MND	MND	MND	MND	MND	MND	2,43E-10	1,75E-09	7,15E-09	1,33E-09	-1,64E-08
Human tox. non-cancer	CTUh	1,26E-07	3,31E-07	8,28E-06	8,73E-06	4,90E-07	6,22E-09	MND	MND	MND	MND	MND	MND	MND	3,84E-09	9,94E-08	4,51E-07	8,93E-08	-6,65E-07
SQP[7)]	-	1,12E+05	5,16E+02	-3,30E+04	7,94E+04	7,60E+02	2,42E+00	MND	MND	MND	MND	MND	MND	MND	2,16E+00	1,55E+02	2,60E+01	1,77E+00	-4,81E+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	1,74E+04	7,02E+00	-1,37E+03	1,60E+04	1,23E+01	-7,30E+01	MND	MND	MND	MND	MND	MND	MND	1,96E-01	2,10E+00	-3,70E+03	-7,76E+02	3,59E+03
Renew. PER as material	MJ	1,49E+04	0,00E+00	-6,98E+03	7,90E+03	0,00E+00	-1,75E+02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-7,18E+03	-5,41E+02	-4,36E+02
Total use of renew. PER	MJ	3,23E+04	7,02E+00	-8,36E+03	2,39E+04	1,23E+01	-2,48E+02	MND	MND	MND	MND	MND	MND	MND	1,96E-01	2,10E+00	-1,09E+04	-1,32E+03	3,15E+03
Non-re. PER as energy	MJ	3,72E+02	5,12E+02	5,11E+03	6,00E+03	7,54E+02	-1,85E+01	MND	MND	MND	MND	MND	MND	MND	3,09E+01	1,53E+02	9,48E+01	6,31E+00	-1,19E+03
Non-re. PER as material	MJ	0,00E+00	0,00E+00	2,63E+01	2,63E+01	0,00E+00	-2,63E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,28E+01
Total use of non-re. PER	MJ	3,72E+02	5,12E+02	5,14E+03	6,02E+03	7,54E+02	-4,48E+01	MND	MND	MND	MND	MND	MND	MND	3,09E+01	1,53E+02	9,48E+01	6,31E+00	-1,18E+03
Secondary materials	kg	2,41E-01	2,18E-01	2,31E+00	2,77E+00	3,26E-01	2,61E-03	MND	MND	MND	MND	MND	MND	MND	1,28E-02	6,53E-02	1,01E-01	1,48E-02	5,45E-02
Renew. secondary fuels	MJ	1,18E-03	2,77E-03	1,01E+01	1,01E+01	4,12E-03	2,28E-05	MND	MND	MND	MND	MND	MND	MND	3,35E-05	8,30E-04	5,56E-04	3,50E-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	1,27E-01	7,57E-02	6,71E+00	6,92E+00	1,11E-01	-5,73E-03	MND	MND	MND	MND	MND	MND	MND	2,04E-03	2,27E-02	9,23E-02	9,20E-03	-9,17E-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	1,03E+00	8,67E-01	3,45E+01	3,64E+01	1,09E+00	2,44E-02	MND	MND	MND	MND	MND	MND	MND	3,44E-02	2,60E-01	1,60E+00	2,97E-01	-5,24E+00
Non-hazardous waste	kg	2,82E+01	1,60E+01	3,36E+03	3,40E+03	2,18E+01	1,07E+01	MND	MND	MND	MND	MND	MND	MND	4,69E-01	4,81E+00	2,35E+02	4,71E+01	-2,44E+02
Radioactive waste	kg	8,76E-05	1,09E-04	1,48E-02	1,50E-02	2,25E-04	2,03E-06	MND	MND	MND	MND	MND	MND	MND	3,36E-06	3,27E-05	4,32E-04	1,79E-06	-6,04E-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	4,14E+03	4,14E+03	0,00E+00	1,99E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	3,93E+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	1,33E+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	1,01E+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	4,28E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	3,47E+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	5,87E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	4,78E+02	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	2,79E+01	3,51E+01	3,70E+02	4,33E+02	5,17E+01	9,83E-01	MND	MND	MND	MND	MND	MND	MND	2,35E+00	1,05E+01	6,77E+00	7,05E-01	-7,04E+01
Ozone depletion Pot.	kg $CFC_{-11}e$	3,33E-07	4,16E-07	3,30E-06	4,05E-06	8,33E-07	2,39E-09	MND	MND	MND	MND	MND	MND	MND	2,86E-08	1,25E-07	7,10E-08	6,63E-09	-7,53E-07
Acidification	kg SO_2e	1,07E-01	9,19E-02	3,25E+00	3,45E+00	1,27E-01	7,92E-04	MND	MND	MND	MND	MND	MND	MND	1,50E-02	2,75E-02	5,15E-02	5,17E-03	-3,58E-01
Eutrophication	kg PO_4^3e	8,05E-02	2,24E-02	5,01E+00	5,12E+00	3,22E-02	3,78E-04	MND	MND	MND	MND	MND	MND	MND	3,50E-03	6,71E-03	1,46E-02	1,98E-03	-3,47E-02
POCP (“smog”)	kg C_2H_4e	3,57E-02	8,19E-03	3,07E-01	3,51E-01	1,20E-02	1,04E-04	MND	MND	MND	MND	MND	MND	MND	1,12E-03	2,45E-03	2,78E-03	4,10E-04	-1,99E-02
ADP-elements	kg Sbe	5,47E-05	9,60E-05	8,68E-04	1,02E-03	1,40E-04	7,03E-07	MND	MND	MND	MND	MND	MND	MND	8,23E-07	2,88E-05	1,34E-05	1,21E-06	-1,11E-04
ADP-fossil	MJ	3,65E+02	5,05E+02	4,18E+03	5,05E+03	7,39E+02	2,43E+00	MND	MND	MND	MND	MND	MND	MND	3,07E+01	1,51E+02	6,52E+01	6,19E+00	-7,78E+02

ENVIRONMENTAL IMPACTS – 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	2,80E+01	3,53E+01	3,72E+02	4,35E+02	5,21E+01	8,15E-01	MND	MND	MND	MND	MND	MND	MND	2,36E+00	1,06E+01	6,45E+00	7,12E-01	-7,07E+01

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	Electricity, medium voltage, residual mix (Reference product: electricity, medium voltage)
Electricity CO2e / kWh	0,66
District heating data source and quality	Heat production, wood chips from industry, at furnace 5000kW (Reference product: heat, district or industrial, other than natural gas)
District heating CO2e / kWh	0,063

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	724
Capacity utilization (including empty return) %	100
Bulk density of transported products	655
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 / m³	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	Wood: 4,22 kg Plastic: 0,52 kg Cardboard: 0,77 kg
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	Plastic: 40 % recycled, 37 % incinerated, 23 % land filled Paper: 83 % recycled, 8 % incinerated, 9 % land filled Wood: 32 % recycled, 30 % incinerated, 38 % land filled
Direct emissions to ambient air, soil and water / kg	0

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	609
Collection process – kg collected with mixed waste	46
Recovery process – kg for re-use	0
Recovery process – kg for recycling	393
Recovery process – kg for energy recovery	216
Disposal (total) – kg for final deposition	46
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
04.07.2025

VERIFIED ISO 14025