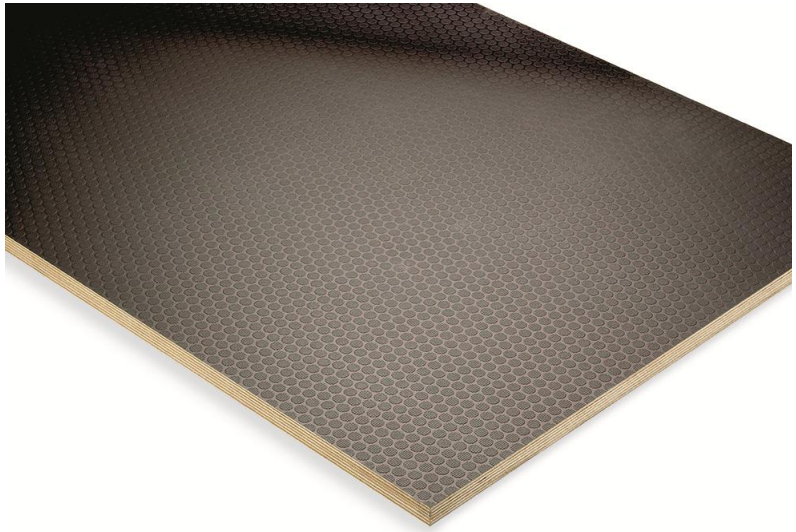
ENVIRONMENTAL PRODUCT DECLARATION

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

Phenol coated birch KoskiPlywood
Koskisen Oyj



EPD HUB, HUB-2536
Published on 28.02.2025, last updated on 28.02.2025, valid until 27.02.2030

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+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Sister EPD
Parent EPD number	HUB-2535
Scope of the EPD	Cradle to gate with 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	Sarah Curpen, 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	Phenol coated birch KoskiPlywood
Place of production	Kärkölä, Järvelä, Finland
Period for data	1.1.2023 - 31.12.2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	0 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	One cubic meter of phenol coated Birch plywood
Declared unit mass	712 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	5,03E+02
GWP-total, A1-A3 ($kgCO_2e$)	-7,89E+02
Secondary material, inputs (%)	0.53
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	7970
Net freshwater use, A1-A3 (m^3)	8.17

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

The Panel industry business segment produces plywood, thin plywood, veneer, chipboard and interior solutions for utility vehicles.

The largest customer groups are the construction and furniture industries. Birch plywood panels and flooring products are produced for construction, light and heavy utility vehicles, packaging, interior decoration, furniture and carpentry.

PRODUCT DESCRIPTION

Phenol coated plywood with density 712 kg/m3 (uncoated 680 kg/m3). The moisture content of the product in the delivery to customers is around 11 %. Plywood is made out of Finnish wood and veneers are glued with phenol-formaldehyde resin or urea-melamine formaldehyde resins and coated with phenol formaldehyde impregnated coatings. The panels are available in various thickness 4 mm- 50 mm in various sizes.
Coated plywood is used in various end uses like construction, vehicle floors and walls with various coatings and lots of various applications depending on the customer needs.

The Birch plywood has a declaration of performance according to EN 13986:2004 + A1:2015.
Further information www.koskisen.com

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	1	Finland; part of hardener
Fossil materials	16	Finland
Bio-based materials	83	Finland

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	257.1
Biogenic carbon content in packaging, kg C	5.7

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	One cubic meter of phenol coated Birch plywood
Mass per declared unit	712 kg
Functional unit	m3
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	MND	MND	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.

This EPD represents phenol coated birch plywood produced in Järvelä, Finland. Coated birch plywood is a Finnish plywood with high-quality. The product is used in various end uses like construction, die-cutting, and with various coatings in vehicle business.

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. Pre-prepared resin is produced in Finland.

A3: Manufacturing process needs electricity which is sourced from the local grid network and heat is provided from own power plant from wood chips of waste and losses.

Ancillary materials is process water, washing water of the gluing system is recycled back to the process, and mixed waste is handled according to the regulation.

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 harbour is in average 100 km by 32t lorry, then the ferry to Germany and as an average distance to the customer 413 km.

A5: The transporting of the packing material after usage (waste) is assumed to be 50 km. Packing materials are partly recycled, incinerated and put into landfill.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

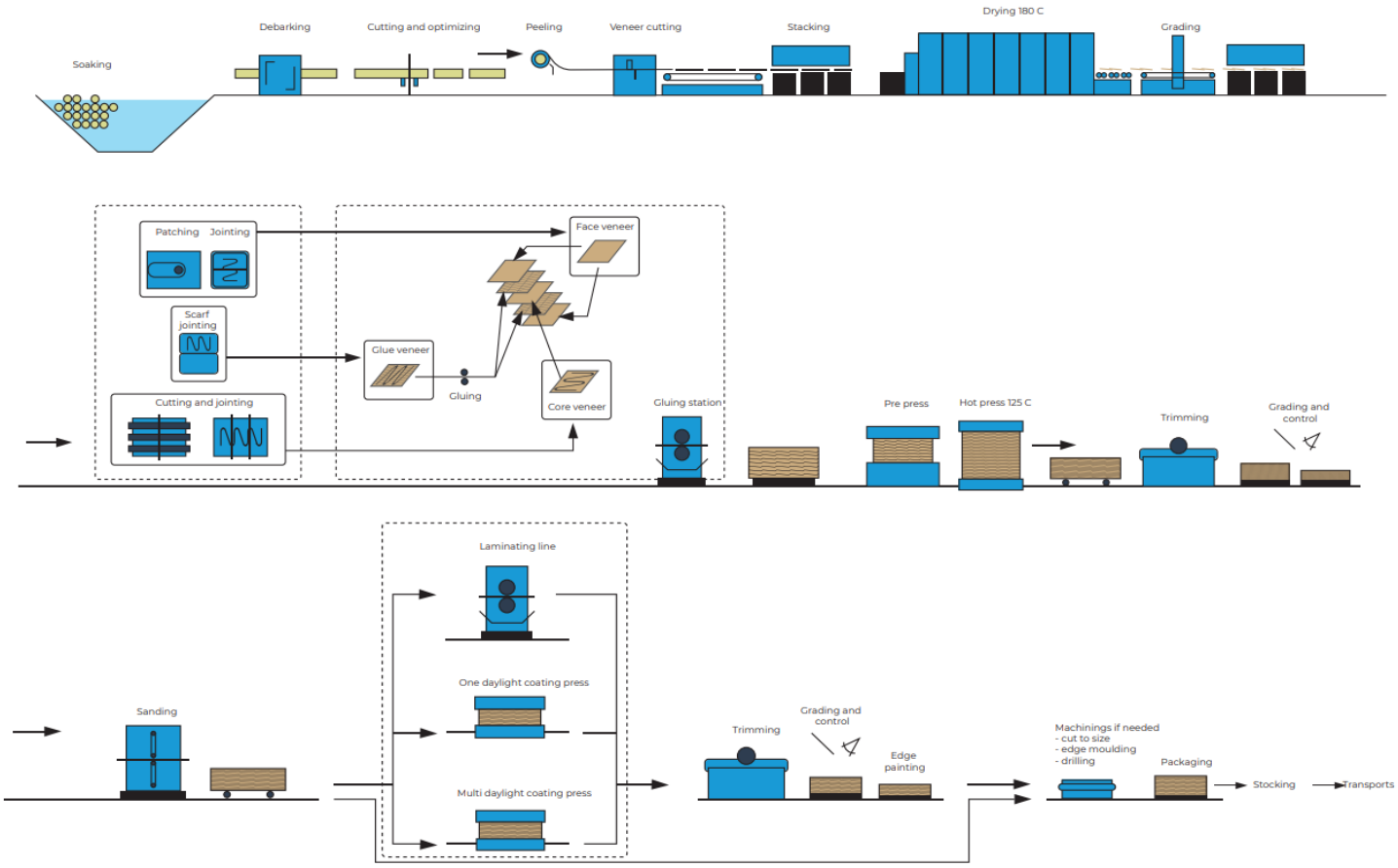
Air, soil, and water impacts during the use phase have not been studied.

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.
C3-C4: According to Finnish statistic from 2019 wooden waste 93 % are burned and the rest 7 % is land filled. Burned with energy recovering.
D: The benefits of material incineration and recycling are counted 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.

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	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by revenue

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Averaged by shares of total mass
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 v3.10.1 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_2e	-2,88E+03	3,71E+01	2,05E+03	-7,89E+02	5,55E+01	2,11E+01	MND	MND	MND	MND	MND	MND	MND	2,57E+00	3,84E+00	1,60E+03	6,43E+01	-8,86E+02
GWP – fossil	kg CO_2e	3,06E+02	3,71E+01	1,60E+02	5,03E+02	5,54E+01	2,81E-01	MND	MND	MND	MND	MND	MND	MND	2,57E+00	3,84E+00	3,92E+02	5,60E-01	-8,85E+02
GWP – biogenic	kg CO_2e	-3,19E+03	0,00E+00	1,89E+03	-1,30E+03	0,00E+00	2,09E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,21E+03	6,37E+01	-5,26E-01
GWP – LULUC	kg CO_2e	1,42E+00	1,49E-02	1,19E+00	2,63E+00	2,15E-02	1,78E-04	MND	MND	MND	MND	MND	MND	MND	2,23E-04	1,54E-03	3,77E-03	1,37E-04	-6,32E-01
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	3,03E-05	5,47E-07	2,15E-06	3,30E-05	1,03E-06	2,15E-08	MND	MND	MND	MND	MND	MND	MND	3,93E-08	5,66E-08	2,12E-07	6,28E-09	-7,72E-06
Acidification potential	mol H^+e	1,72E+00	1,27E-01	2,19E+00	4,04E+00	6,71E-01	1,44E-03	MND	MND	MND	MND	MND	MND	MND	2,32E-02	1,31E-02	1,43E-01	5,81E-03	-6,35E+00
EP-freshwater[2)]	kg Pe	2,72E-02	3,39E-04	6,73E-03	3,42E-02	3,70E-04	6,69E-06	MND	MND	MND	MND	MND	MND	MND	9,02E-06	3,51E-05	2,01E-04	7,73E-06	-5,19E-02
EP-marine	kg Ne	3,89E-01	4,10E-02	9,02E-01	1,33E+00	2,04E-01	1,25E-03	MND	MND	MND	MND	MND	MND	MND	1,07E-02	4,25E-03	6,36E-02	2,78E-03	-7,50E-01
EP-terrestrial	mol Ne	4,35E+00	4,52E-01	9,96E+00	1,48E+01	2,26E+00	5,47E-03	MND	MND	MND	MND	MND	MND	MND	1,18E-01	4,68E-02	6,86E-01	2,96E-02	-8,76E+00
POCP ("smog")[3)]	kg NMVOCe	1,69E+00	1,86E-01	2,48E+00	4,36E+00	6,80E-01	1,64E-03	MND	MND	MND	MND	MND	MND	MND	3,51E-02	1,93E-02	1,74E-01	7,45E-03	-2,76E+00
ADP-minerals & metals[4)]	kg Sbe	3,98E-03	1,03E-04	7,33E-04	4,82E-03	1,25E-04	1,32E-06	MND	MND	MND	MND	MND	MND	MND	9,21E-07	1,07E-05	4,27E-05	1,15E-06	-5,14E-04
ADP-fossil resources	MJ	7,35E+03	5,38E+02	3,86E+03	1,18E+04	7,73E+02	2,60E+00	MND	MND	MND	MND	MND	MND	MND	3,36E+01	5,57E+01	1,32E+02	4,96E+00	-1,09E+04
Water use[5)]	m^3e depr.	2,94E+02	2,59E+00	1,58E+02	4,54E+02	3,42E+00	2,76E-01	MND	MND	MND	MND	MND	MND	MND	8,22E-02	2,68E-01	3,81E+01	1,17E+00	-1,40E+02

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	1,69E-05	3,70E-06	6,10E-05	8,16E-05	5,39E-06	1,83E-08	MND	MND	MND	MND	MND	MND	MND	6,58E-07	3,83E-07	1,27E-06	6,50E-08	-6,23E-05
Ionizing radiation[6)]	kBq U235e	6,67E+00	1,85E-01	6,99E+01	7,68E+01	2,89E-01	2,79E-02	MND	MND	MND	MND	MND	MND	MND	5,84E-03	1,92E-02	1,02E-01	2,17E-03	-3,74E+01
Ecotoxicity (freshwater)	CTUe	6,10E+03	1,30E+02	1,12E+03	7,35E+03	1,69E+02	7,16E+00	MND	MND	MND	MND	MND	MND	MND	4,76E+00	1,35E+01	7,45E+02	6,55E+00	-1,73E+03
Human toxicity, cancer	CTUh	1,07E-06	1,84E-07	1,22E-06	2,47E-06	3,17E-07	3,72E-10	MND	MND	MND	MND	MND	MND	MND	1,00E-08	1,91E-08	1,95E-07	1,02E-08	-1,06E-06
Human tox. non-cancer	CTUh	3,66E-06	3,56E-07	4,15E-06	8,17E-06	5,12E-07	1,19E-08	MND	MND	MND	MND	MND	MND	MND	4,56E-09	3,68E-08	1,20E-06	7,05E-08	-7,26E-06
SQP[7)]	-	1,24E+05	5,41E+02	-1,56E+04	1,09E+05	5,97E+02	3,14E+00	MND	MND	MND	MND	MND	MND	MND	2,35E+00	5,60E+01	3,98E+01	1,39E+00	-5,99E+03

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	1,89E+04	7,06E+00	8,00E+01	1,90E+04	1,06E+01	1,89E-01	MND	MND	MND	MND	MND	MND	MND	2,05E-01	7,31E-01	-9,39E+03	-6,10E+02	-2,10E+03
Renew. PER as material	MJ	1,60E+04	0,00E+00	-9,37E+03	6,61E+03	0,00E+00	-1,82E+02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-6,10E+03	-3,21E+02	4,81E-01
Total use of renew. PER	MJ	3,49E+04	7,06E+00	-9,29E+03	2,56E+04	1,06E+01	-1,82E+02	MND	MND	MND	MND	MND	MND	MND	2,05E-01	7,31E-01	-1,55E+04	-9,31E+02	-2,10E+03
Non-re. PER as energy	MJ	5,43E+03	5,38E+02	3,69E+03	9,65E+03	7,73E+02	2,60E+00	MND	MND	MND	MND	MND	MND	MND	3,36E+01	5,57E+01	-3,18E+03	4,96E+00	-1,09E+04
Non-re. PER as material	MJ	8,30E-01	0,00E+00	2,53E+01	2,62E+01	0,00E+00	-2,54E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-7,51E-01	-3,95E-02	8,03E-01
Total use of non-re. PER	MJ	5,43E+03	5,38E+02	3,71E+03	9,68E+03	7,73E+02	-2,28E+01	MND	MND	MND	MND	MND	MND	MND	3,36E+01	5,57E+01	-3,18E+03	4,92E+00	-1,09E+04
Secondary materials	kg	3,81E+00	2,29E-01	3,69E+00	7,73E+00	3,38E-01	3,11E-03	MND	MND	MND	MND	MND	MND	MND	1,39E-02	2,37E-02	2,37E-01	1,16E-02	-1,12E+00
Renew. secondary fuels	MJ	2,97E+00	2,91E-03	9,03E+00	1,20E+01	3,35E-03	2,39E-05	MND	MND	MND	MND	MND	MND	MND	3,65E-05	3,01E-04	2,32E-03	2,75E-05	-8,40E-03
Non-ren. secondary fuels	MJ	3,07E+00	0,00E+00	0,00E+00	3,07E+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+00	7,79E-02	3,89E+00	8,17E+00	9,67E-02	1,39E-03	MND	MND	MND	MND	MND	MND	MND	2,18E-03	8,06E-03	4,80E-01	7,21E-03	-7,77E+00

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	2,18E+01	9,17E-01	1,27E+01	3,54E+01	1,09E+00	1,92E-02	MND	MND	MND	MND	MND	MND	MND	3,75E-02	9,49E-02	1,55E+01	2,33E-01	-7,56E+01
Non-hazardous waste	kg	4,79E+02	1,70E+01	1,16E+03	1,65E+03	2,02E+01	7,62E+00	MND	MND	MND	MND	MND	MND	MND	5,13E-01	1,76E+00	7,08E+02	3,70E+01	-2,15E+03
Radioactive waste	kg	5,81E-03	1,16E-04	3,21E-02	3,80E-02	1,95E-04	6,79E-06	MND	MND	MND	MND	MND	MND	MND	3,69E-06	1,21E-05	7,82E-05	1,42E-06	-2,99E-02

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	5,52E-03	0,00E+00	2,54E+03	2,54E+03	0,00E+00	5,82E+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 energy rec	kg	2,42E-03	0,00E+00	0,00E+00	2,42E-03	0,00E+00	3,04E-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	MJ	1,49E-01	0,00E+00	0,00E+00	1,49E-01	0,00E+00	1,92E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,21E+04	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	3,13E+02	3,69E+01	1,61E+02	5,10E+02	5,51E+01	8,48E-01	MND	MND	MND	MND	MND	MND	MND	2,55E+00	3,82E+00	3,92E+02	5,54E-01	-8,82E+02
Ozone depletion Pot.	kg CFC_{-11}e	3,17E-05	4,36E-07	1,85E-06	3,40E-05	8,22E-07	1,76E-08	MND	MND	MND	MND	MND	MND	MND	3,11E-08	4,52E-08	1,79E-07	5,20E-09	-6,59E-06
Acidification	kg SO_2e	1,35E+00	9,67E-02	1,57E+00	3,02E+00	5,19E-01	1,08E-03	MND	MND	MND	MND	MND	MND	MND	1,63E-02	1,00E-02	1,01E-01	4,06E-03	-5,42E+00
Eutrophication	kg PO_4^3e	5,44E-01	2,35E-02	2,72E+00	3,29E+00	8,03E-02	1,49E-02	MND	MND	MND	MND	MND	MND	MND	3,81E-03	2,44E-03	3,46E-02	1,56E-03	-4,66E-01
POCP (“smog”)	kg C_2H_4e	2,07E-01	8,61E-03	1,56E-01	3,71E-01	3,11E-02	1,76E-04	MND	MND	MND	MND	MND	MND	MND	1,22E-03	8,91E-04	7,53E-03	3,23E-04	-2,99E-01
ADP-elements	kg Sbe	3,97E-03	1,01E-04	7,28E-04	4,80E-03	1,22E-04	1,29E-06	MND	MND	MND	MND	MND	MND	MND	8,95E-07	1,04E-05	2,97E-05	9,50E-07	-5,08E-04
ADP-fossil	MJ	7,35E+03	5,38E+02	3,77E+03	1,17E+04	7,73E+02	2,60E+00	MND	MND	MND	MND	MND	MND	MND	3,36E+01	5,57E+01	1,32E+02	4,96E+00	-1,09E+04

ENVIRONMENTAL IMPACTS – FRENCH NATIONAL COMPLEMENTS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-elements	kg Sbe	3,96E-03	1,01E-04	7,28E-04	4,79E-03	1,22E-04	1,29E-06	MND	MND	MND	MND	MND	MND	MND	8,95E-07	1,04E-05	2,97E-05	9,50E-07	-5,08E-04
Hazardous waste disposed	kg	1,26E+01	9,17E-01	1,27E+01	2,61E+01	1,09E+00	1,92E-02	MND	MND	MND	MND	MND	MND	MND	3,75E-02	9,49E-02	1,55E+01	2,33E-01	-7,56E+01
Non-haz. waste disposed	kg	4,73E+02	1,70E+01	1,16E+03	1,65E+03	2,02E+01	7,62E+00	MND	MND	MND	MND	MND	MND	MND	5,13E-01	1,76E+00	7,08E+02	3,70E+01	-2,15E+03
Air pollution	m^3	5,43E+04	8,14E+03	1,06E+05	1,69E+05	1,19E+04	5,32E+01	MND	MND	MND	MND	MND	MND	MND	4,18E+02	8,42E+02	4,46E+03	2,06E+02	-3,47E+05
Water pollution	m^3	5,46E+02	2,47E+02	8,88E+02	1,68E+03	4,12E+02	1,36E+01	MND	MND	MND	MND	MND	MND	MND	1,69E+01	2,55E+01	8,80E+01	2,91E+00	-4,93E+03

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

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	3,06E+02	3,71E+01	1,60E+02	5,03E+02	5,54E+01	2,81E-01	MND	MND	MND	MND	MND	MND	MND	2,57E+00	3,84E+00	3,92E+02	5,60E-01	-8,85E+02

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.

ENVIRONMENTAL IMPACTS – TRACI 2.1. / 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	3,10E+02	3,66E+01	1,60E+02	5,06E+02	5,46E+01	7,47E-01	MND	MND	MND	MND	MND	MND	MND	2,54E+00	3,79E+00	3,93E+02	5,68E-01	-8,76E+02
Ozone Depletion	kg CFC_{-11}e	3,34E-05	5,77E-07	2,28E-06	3,62E-05	1,09E-06	1,76E-08	MND	MND	MND	MND	MND	MND	MND	4,14E-08	5,97E-08	2,23E-07	6,61E-09	-8,27E-06
Acidification	kg SO_2e	1,41E+00	1,12E-01	2,01E+00	3,53E+00	5,83E-01	7,08E-02	MND	MND	MND	MND	MND	MND	MND	2,14E-02	1,16E-02	1,32E-01	5,38E-03	-5,26E+00
Eutrophication	kg Ne	5,59E-01	1,19E-02	1,01E+00	1,58E+00	3,23E-02	1,10E-03	MND	MND	MND	MND	MND	MND	MND	1,45E-03	1,23E-03	4,95E-02	2,20E-03	-4,96E-01
POCP (“smog”)	kg O_3e	2,08E+01	2,86E+00	5,69E+01	8,05E+01	1,35E+01	1,32E-03	MND	MND	MND	MND	MND	MND	MND	7,08E-01	2,96E-01	3,98E+00	1,72E-01	-4,90E+01
ADP-fossil	MJ	1,46E+03	5,38E+02	3,69E+03	5,68E+03	7,73E+02	2,53E-01	MND	MND	MND	MND	MND	MND	MND	3,36E+01	5,57E+01	-3,18E+03	4,96E+00	-1,09E+04

ENVIRONMENTAL IMPACTS – BEPALINGSMETODE, NETHERLANDS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Shadow price	€	1,12E+02	1,89E+01	1,34E+02	2,65E+02	2,88E+01	2,29E-01	MND	MND	MND	MND	MND	MND	MND	1,11E+00	1,95E+00	3,55E+01	8,48E-01	-2,13E+02
Terrestrial ecotoxicity	DCB eq	2,61E+00	8,48E-01	6,83E+00	1,03E+01	1,25E+00	2,57E-03	MND	MND	MND	MND	MND	MND	MND	4,13E-02	8,77E-02	9,39E-01	4,97E-02	-7,78E+00
Seawater ecotoxicity	DCB eq	1,33E+05	4,15E+04	2,57E+05	4,32E+05	5,74E+04	1,51E+02	MND	MND	MND	MND	MND	MND	MND	2,00E+03	4,30E+03	4,04E+04	2,13E+03	-5,93E+05
Freshwater ecotoxicity	DCB eq	1,90E+01	7,83E+00	3,80E+01	6,49E+01	1,18E+01	8,41E-03	MND	MND	MND	MND	MND	MND	MND	4,04E-01	8,10E-01	7,45E+00	3,86E-01	-4,64E+01
Human ecotoxicity	DCB eq	7,86E+02	1,32E+02	7,53E+02	1,67E+03	1,89E+02	3,50E-01	MND	MND	MND	MND	MND	MND	MND	7,39E+00	1,37E+01	1,20E+02	6,24E+00	-8,98E+02
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,07E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,82E+03	0,00E+00	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,11E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,02E+04	0,00E+00	0,00E+00
ADP Fossil Fuels	kg Sbe	3,53E+00	2,59E-01	1,81E+00	5,61E+00	3,72E-01	1,25E-03	MND	MND	MND	MND	MND	MND	MND	1,62E-02	2,68E-02	6,36E-02	2,39E-03	-5,24E+00

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.

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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.

Sarah Curpen, as an authorized verifier acting for EPD Hub Limited.
28.02.2025