ENVIRONMENTAL PRODUCT DECLARATION

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

KÄHRS 13MM ENGINEERED WOOD FLOORS KÄHRS GROUP
Kährs Group

EPD HUB, EPDHUB-0109
Publishing date 31 August 2022, last updated date 31 August 2022, valid until 31 August 2027

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Kährs Group
Address	Ångbåtsbron 1, 211 20 Malmö, Sweden
Contact details	info@kahrs.se
Website	www.kahrs.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 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Sister EPD (HUB-0008)
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Neena Chandramathy, One Click LCA
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier	E.A as an authorized verifier acting for EPD Hub

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	KÄHRS 13MM ENGINEERED WOOD FLOORS KÄHRS GROUP
Additional labels	Kährs, Karelia (other brands on request)
Product reference	Wood floor coverings according to EN 13489:2017 and EN 14342:2013
Place of production	Satulung, Romania
Period for data	2021
Averaging in EPD	No averaging

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 square meter
Declared unit mass	8,3415 kg
GWP-fossil, A1-A3 (kgCO2e)	6,38
GWP-total, A1-A3 (kgCO2e)	-7,54
Secondary material, inputs (%)	7,88E-2
Secondary material, outputs (%)	9,9E1
Total energy use, A1-A3 (kWh)	5,95E1
Total water use, A1-A3 (m3e)	4,21E-2

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

PRODUCT DESCRIPTION

Kährs 3-layer floors consist of a surface layer, core layer, and backing. The core material is made from pine/spruce lamella. The total thickness of the floor is 13 mm. The surface layer can be re-sanded 3-4 times. Kährs 3-layer floors can both be installed floating on a level, solid surface such as concrete, particleboard, wood or glued down. Products can have either an oil or lacquer surface treatment and various species. Our lamella-constructed wood floors are not only strong and stable, but they also use raw materials more effectively so they have a lower environmental impact.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	-	-
Minerals	-	-
Fossil materials	5	EU
Bio-based materials	95	EU

BIOGENIC CARBON CONTENT

Product’s biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	3,97
Biogenic carbon content in packaging, kg C	0,03

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 square meter
Mass per declared unit	8.3415 kg

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

Quality control is involved with every process step of production. The high-quality raw material is sourced from hundreds of forest owners each year as logs and also sourced as sawn planks or backside veneers. The material is sawn and dried for core and top layer material. The surface material is graded, then strip glued then glued to core/backside material. Then as needed filler, sanding, lacquering/oil applied. Profiling of the board. Final inspection and then packing of flooring, then placed in our warehouse and shipped to the customer.

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. The transportation is allocated based on the product distribution market scenario for the year of 2021.

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.
Transportation of warehouse material is shipped to customers. Initially, shipment is by truck/lorry to either end-user customer. (A4) covers all transport from the factory to the final customer. Installing a wood floor from Kährs is quick and simple and glueless, thanks to our innovative locking joint system Woodloc®. The glueless system locks the boards together mechanically, eliminating gapping in between the boards. The superior fit also enhances the performance and durability of the floor.

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.
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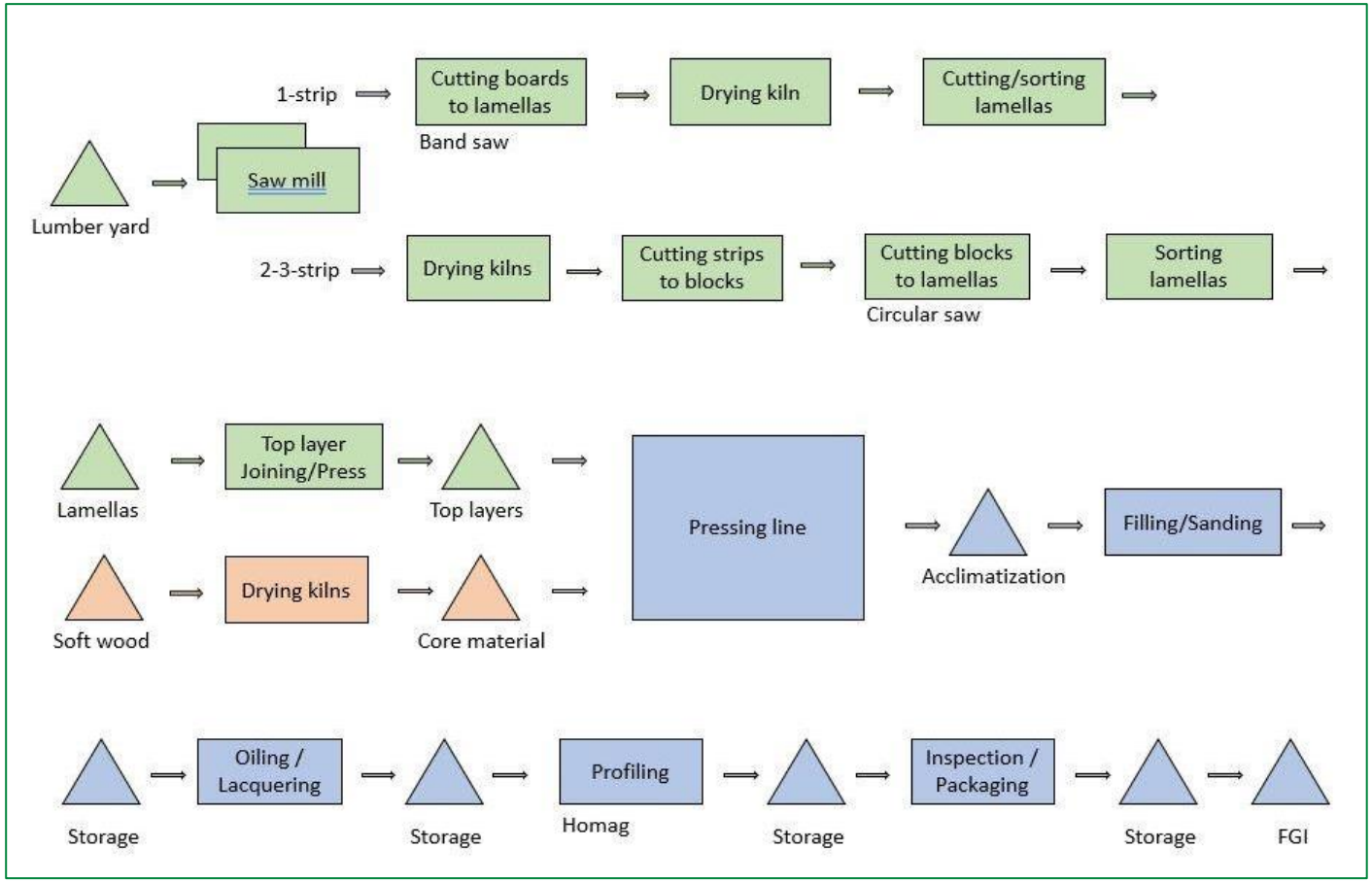
PRODUCT END OF LIFE (C1-C4, D)

All of the end-of-life product is assumed to be sent to the closest facility. End-of-life scenarios for wood products are almost 100% incineration with energy recovery, as it is assumed that it is the most probable treatment for the product and incineration is common in Nordic market. The transport between a construction site and waste/energy facility is by truck.

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 study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 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 life cycle analysis includes all industrial processes from raw material acquisition to production, distribution, and end-of-life stages.
The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. In this study, as per the reference standard, allocation is conducted in the following order;

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g., mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

Allocation is based on annual production rate and made with high accuracy and precision. The values for 1 m2 of the produced product which is used within this study are calculated by considering the total product area per annual production. The product output is fixed to 1 m2 and the corresponding amount of product is used in the calculations.
There is no waste as an output since the only outputs are the product itself and by-product wood chip which is sold to a pellet factory for fuel production. Allocation for by-product is handled by mass ratio. Since the shares of raw materials in the main product and by-product is known, allocation is done considering these shares, energy consumption is allocated considering final produced amounts.
Electricity is sourced from several types of energy sources combined in Romania. Independent research suggests that the use of hydropower instead of fossil fuels for electricity generation has helped to avoid more than 100 billion tonnes of carbon dioxide in the past 50 years alone, exceedingly even the emissions averted by nuclear power. That's roughly equivalent to the total annual carbon footprint of the United States for 20 years.
Allocation used in Ecoinvent 3.6 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 -standard.
All estimates and assumptions are given below:

- Module A2, A4 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. It may vary but as the role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are not considered as it is assumed that return trip is used by transportation companies to serve the needs of other clients.
- Module A4: Transportation doesn't cause losses as products are packaged properly. The volume capacity utilisation factor is assumed to be 1 for the nested packaged products. Additionally, transportation distances and vehicle types are assumed according to the exports in the last year.

- Module A5: The impacts of the ancillary materials and consumed energy during installation are assumed zero since they are negligible. Weight loss from product is assumed as 1% by mass.
- Module C1: The impacts of the disassembly stage are assumed zero, since the consumption of energy and natural resources for disassembling the end-of-life product is negligible.
- Module C2: Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is assumed as lorry which is the most common.
- Module C3, C4, D: 100% of the end-of-life product is assumed to be recovered to energy.

Allocation used in environmental data sources is aligned with the above.

AVERAGES AND VARIABILITY

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. Ecoinvent and One Click LCA databases were used 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	kg CO_2e	-1.64E1	4.47E-1	8.4E0	-7.54E0	1.63E-1	2.54E-1	MND	MND	MND	MND	MND	MND	MND	0E0	5.27E-2	1.33E-1	0E0	5.13E0
GWP – fossil	kg CO_2e	1.38E0	4.47E-1	4.55E0	6.38E0	1.65E-1	5.49E-2	MND	MND	MND	MND	MND	MND	MND	0E0	5.26E-2	1.33E-1	0E0	-6.95E0
GWP – biogenic	kg CO_2e	-1.78E1	3.13E-4	3.84E0	-1.39E1	1.2E-4	1.99E-1	MND	MND	MND	MND	MND	MND	MND	0E0	3.22E-5	2.47E-4	0E0	1.21E1
GWP – LULUC	kg CO_2e	9.42E-3	1.38E-4	4.44E-3	1.4E-2	4.95E-5	1.39E-6	MND	MND	MND	MND	MND	MND	MND	0E0	1.86E-5	2.47E-4	0E0	-2.7E-4
Ozone depletion pot.	kg CFC_{-11}e	4.85E-7	1.05E-7	3.52E-7	9.42E-7	3.87E-8	7.3E-10	MND	MND	MND	MND	MND	MND	MND	0E0	1.21E-8	4.67E-9	0E0	-1.45E-6
Acidification potential	mol H^+e	8.19E-3	1.87E-3	3.32E-2	4.33E-2	6.91E-4	4.52E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2.17E-4	6.57E-4	0E0	-3.54E-2
EP-freshwater[3)]	kg Pe	1.04E-4	3.65E-6	8.73E-4	9.81E-4	1.34E-6	5.86E-8	MND	MND	MND	MND	MND	MND	MND	0E0	4.55E-7	6.65E-6	0E0	-1.22E-5
EP-marine	kg Ne	1.65E-3	5.62E-4	5.6E-3	7.82E-3	2.08E-4	2.01E-5	MND	MND	MND	MND	MND	MND	MND	0E0	6.42E-5	1.16E-4	0E0	-6.04E-3
EP-terrestrial	mol Ne	1.82E-2	6.21E-3	6.93E-2	9.37E-2	2.3E-3	2.13E-4	MND	MND	MND	MND	MND	MND	MND	0E0	7.09E-4	1.3E-3	0E0	-6.12E-2
POCP (“smog”)	kg NMVOCe	7.06E-3	1.98E-3	1.9E-2	2.8E-2	7.4E-4	5.39E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2.23E-4	3.52E-4	0E0	-1.75E-2
ADP-minerals & metals	kg Sbe	2.99E-5	8.21E-6	2.94E-5	6.75E-5	2.81E-6	9.4E-8	MND	MND	MND	MND	MND	MND	MND	0E0	1.31E-6	2.77E-7	0E0	-2.57E-6
ADP-fossil resources	MJ	2.66E1	6.92E0	8.37E1	1.17E2	2.56E0	5.67E-2	MND	MND	MND	MND	MND	MND	MND	0E0	8.03E-1	1.58E0	0E0	-8.89E1
Water use[2)]	m^3e depr.	8.85E-1	2.53E-2	9.72E-1	1.88E0	9.52E-3	1.06E-3	MND	MND	MND	MND	MND	MND	MND	0E0	2.85E-3	2.8E-2	0E0	-2.74E0

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	1.09E-7	3.92E-8	9.58E-7	1.11E-6	1.49E-8	4.71E-10	MND	MND	MND	MND	MND	MND	MND	0E0	4.06E-9	5.39E-9	0E0	-2.85E-7
Ionizing radiation[5)]	kBq U235e	5.82E-2	3.02E-2	5.27E-1	6.15E-1	1.12E-2	1.79E-4	MND	MND	MND	MND	MND	MND	MND	0E0	3.51E-3	5.57E-3	0E0	-3.93E-1
Ecotoxicity (freshwater)	CTUe	2.87E1	5.29E0	1.13E2	1.47E2	1.96E0	1.6E-1	MND	MND	MND	MND	MND	MND	MND	0E0	6.27E-1	2.49E0	0E0	-4.38E1
Human toxicity, cancer	CTUh	1.68E-9	1.38E-10	2.49E-9	4.31E-9	5E-11	1.1E-11	MND	MND	MND	MND	MND	MND	MND	0E0	1.78E-11	4.38E-11	0E0	-1.05E-9
Human tox. non-cancer	CTUh	2.91E-8	6.24E-9	1.33E-7	1.69E-7	2.32E-9	5.03E-10	MND	MND	MND	MND	MND	MND	MND	0E0	7.19E-10	1.3E-9	0E0	-2.32E-9
SQP	-	2.69E0	9.84E0	5.17E0	1.77E1	3.86E0	4.07E-2	MND	MND	MND	MND	MND	MND	MND	0E0	8.94E-1	1.52E-1	0E0	-1.27E0

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	MJ	1.87E1	8.84E-2	8.65E1	1.05E2	3.22E-2	1.18E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1.14E-2	1.61E-1	0E0	-2.3E-1
Renew. PER as material	MJ	1.82E2	0E0	1.08E0	1.83E2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-7.58E2	0E0	0E0
Total use of renew. PER	MJ	2.01E2	8.84E-2	8.76E1	2.89E2	3.22E-2	1.18E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1.14E-2	-7.58E2	0E0	-2.3E-1
Non-re. PER as energy	MJ	1.94E1	6.92E0	8.27E1	1.09E2	2.56E0	5.67E-2	MND	MND	MND	MND	MND	MND	MND	0E0	8.03E-1	1.58E0	0E0	-8.89E1
Non-re. PER as material	MJ	7.23E0	0E0	1.04E0	8.27E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-6.18E2	0E0	0E0
Total use of non-re. PER	MJ	2.66E1	6.92E0	8.37E1	1.17E2	2.56E0	5.67E-2	MND	MND	MND	MND	MND	MND	MND	0E0	8.03E-1	-6.17E2	0E0	-8.89E1
Secondary materials	kg	6.24E-3	0E0	3.39E-4	6.57E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m^3	1E-2	1.41E-3	3.07E-2	4.21E-2	5.33E-4	1.26E-4	MND	MND	MND	MND	MND	MND	MND	0E0	1.52E-4	5.48E-4	0E0	-8.66E-3

6) 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	9.45E-2	6.76E-3	1.06E-1	2.07E-1	2.49E-3	1.46E-3	MND	MND	MND	MND	MND	MND	MND	0E0	8.35E-4	0E0	0E0	1.54E-2
Non-hazardous waste	kg	2.07E0	7.1E-1	3.42E1	3.7E1	2.75E-1	1.59E-1	MND	MND	MND	MND	MND	MND	MND	0E0	6.94E-2	0E0	0E0	7.78E0
Radioactive waste	kg	5.97E-5	4.75E-5	4.05E-4	5.12E-4	1.76E-5	2.67E-7	MND	MND	MND	MND	MND	MND	MND	0E0	5.49E-6	0E0	0E0	-6.49E-4

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	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	8.26E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	1E3	0E0	0E0

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	1.33E0	4.43E-1	4.51E0	6.28E0	1.63E-1	5.49E-2	MND	MND	MND	MND	MND	MND	MND	0E0	5.22E-2	1.28E-1	0E0	-6.92E0
Ozone depletion Pot.	kg CFC_{-11}e	7.06E-7	8.31E-8	3.97E-7	1.19E-6	3.08E-8	6.22E-10	MND	MND	MND	MND	MND	MND	MND	0E0	9.6E-9	4.33E-9	0E0	-1.14E-6
Acidification	kg SO_2e	6.75E-3	9.07E-4	2.72E-2	3.49E-2	3.35E-4	2.81E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1.07E-4	5.56E-4	0E0	-2.97E-2
Eutrophication	kg PO_4^3e	2.13E-3	1.84E-4	2.46E-2	2.69E-2	6.76E-5	2.93E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2.23E-5	2.24E-4	0E0	-2E-3
POCP (“smog”)	kg C_2H_4e	6.68E-4	5.78E-5	1.11E-3	1.83E-3	2.12E-5	8.3E-7	MND	MND	MND	MND	MND	MND	MND	0E0	6.93E-6	2.22E-5	0E0	-1.02E-3
ADP-elements	kg Sbe	2.99E-5	8.21E-6	2.94E-5	6.75E-5	2.81E-6	9.4E-8	MND	MND	MND	MND	MND	MND	MND	0E0	1.31E-6	2.77E-7	0E0	-2.57E-6
ADP-fossil	MJ	2.66E1	6.92E0	8.37E1	1.17E2	2.56E0	5.67E-2	MND	MND	MND	MND	MND	MND	MND	0E0	8.03E-1	1.58E0	0E0	-8.89E1

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	2.98E-5	8.2E-6	2.94E-5	6.74E-5	2.8E-6	9.32E-8	MND	MND	MND	MND	MND	MND	MND	0E0	1.31E-6	2.75E-7	0E0	-2.58E-6
Hazardous waste disposed	kg	6.67E-2	4.28E-3	8.15E-2	1.52E-1	1.58E-3	2.83E-3	MND	MND	MND	MND	MND	MND	MND	0E0	5.29E-4	6.35E-3	0E0	7.74E-2
Non-haz. waste disposed	kg	2.07E0	7.1E-1	3.42E1	3.7E1	2.75E-1	1.59E-1	MND	MND	MND	MND	MND	MND	MND	0E0	6.94E-2	2.84E-1	0E0	7.78E0
Air pollution	m^3	2.09E2	5.57E1	6.72E2	9.37E2	2.12E1	7.46E-1	MND	MND	MND	MND	MND	MND	MND	0E0	5.88E0	1.53E1	0E0	-2.09E2
Water pollution	m^3	4.82E-1	1.54E-1	2.18E0	2.81E0	5.68E-2	6.39E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1.78E-2	1.97E-2	0E0	-1.77E0

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	1.33E0	4.42E-1	4.52E0	6.29E0	1.63E-1	5.49E-2	MND	MND	MND	MND	MND	MND	MND	0E0	5.21E-2	1.29E-1	0E0	-6.92E0
Ozone Depletion	kg CFC_{-11}e	5.05E-7	1.11E-7	4.97E-7	1.11E-6	4.1E-8	7.74E-10	MND	MND	MND	MND	MND	MND	MND	0E0	1.28E-8	6.26E-9	0E0	-1.52E-6
Acidification	kg SO_2e	6.9E-3	1.63E-3	2.72E-2	3.57E-2	6.02E-4	4.16E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1.88E-4	5.63E-4	0E0	-2.88E-2
Eutrophication	kg Ne	1.28E-3	2.29E-4	6.48E-3	7.99E-3	8.47E-5	1.23E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2.66E-5	6.58E-5	0E0	-2.92E-3
POCP (“smog”)	kg O_3e	9.97E-2	3.56E-2	3.42E-1	4.78E-1	1.32E-2	1.22E-3	MND	MND	MND	MND	MND	MND	MND	0E0	4.07E-3	7.3E-3	0E0	-3.43E-1
ADP-fossil	MJ	3.25E0	9.91E-1	3.93E0	8.17E0	3.67E-1	7.82E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1.15E-1	8.66E-2	0E0	-1.35E1

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Elma Avdyli as an authorized verifier acting for EPD Hub Limited
31.08.2022

VERIFIED ISO 14025