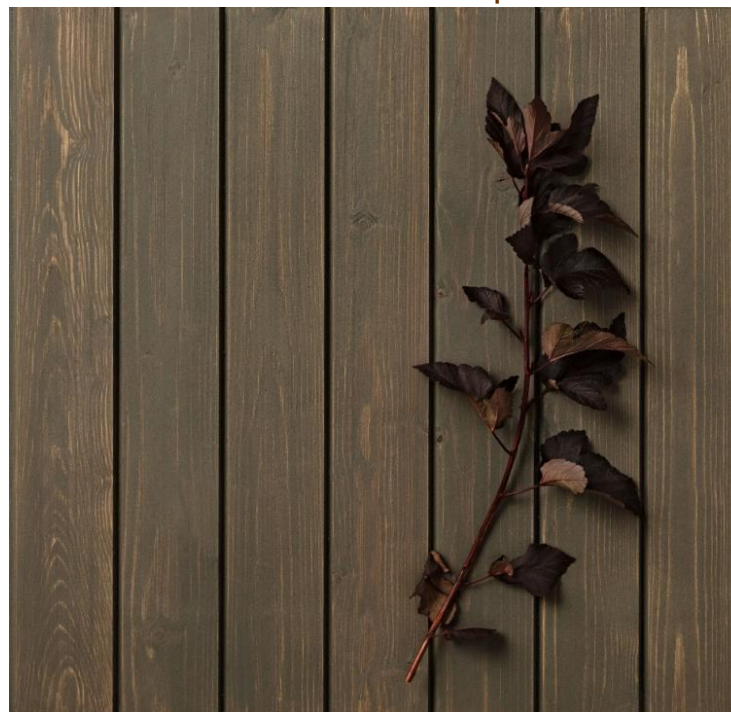


ENVIRONMENTAL PRODUCT DECLARATION

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

**Pinja Color Plus, Pinja Wood Stain, Villa Lasur Akva,
Ultra Primer, Ultra pro
Tikkurila Group**



EPD HUB, HUB-0247

Publishing date 20 January 2023, last updated date 20 January 2023, valid until 20 January 2028

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Tikkurila Group
Address	Heidehofintie 2, 01300 Vantaa, Finland
Contact details	epd-team@tikkurila.com
Website	tikkurila.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	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Andrey Iskorkin
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
EPD verifier	S.V, 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	Pinja Color Plus, Pinja Wood Stain, Villa Lasur Akva, Ultra Primer, Ultra pro
Place of production	Vantaa facility, Finland
Period for data	Calendar year 2019
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	40 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 liter of paint
Declared unit mass	1,00 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	9,82E-1
GWP-total, A1-A3 (kgCO ₂ e)	1,02E0
Secondary material, inputs (%)	2.57
Secondary material, outputs (%)	7.5
Total energy use, A1-A3 (kWh)	2.58
Total water use, A1-A3 (m ³ e)	0.00548

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Tikkurila offers a broad range of decorative paints for consumers and professionals for surface protection and decoration. The product offering includes, among others, interior paints, lacquers, and effect products, exterior products for wood, masonry, and metal surfaces, as well as services related to painting. In addition, Tikkurila produces paints and coatings for the metal and wood industries.

PRODUCT DESCRIPTION

Pinja Color Plus

A water-borne tintable semi-transparent wood stain.

- Deep and intense Super Colors
- Protects wood effectively
- Exceptionally high UV and weather resistance

Pinja Wood Stain

A water-borne priming oil/semi-transparent wood stain for exterior wooden

surfaces providing translucent colorful protection for wood.

- Fast-drying stain for wood
- Protects the wood surface
- Both transparent and semi-transparent colors

Villa Lasur Akva

Protects wood from moisture, sunlight and dirt. Reduces cracking of the wooden surface.

- Excellent UV protection and color fastness
- Protects wood from moisture, sunlight, and dirt
- Suitable for use as a wood impregnant before painting with Villa Akva or Villa Ultima surface paints

Ultra Primer

Polyacrylate paint for untreated or industrially primed wooden facades or surfaces treated previously with exterior paints.

- optimized to retard the appearance of resin and wood bleeding through the paint.
- under the finishing paint protects a wooden house facade from moisture and ensures the adhesion of topcoat. For the increased durability, paint with Ultra Primer before finishing with Ultra house paints or Pika-Teho.

Ultra Pro

A water-borne one-component, polyacrylate exterior topcoat with optimized hiding properties.

- Extremely low water absorption, standard EN 927
- Short throughput time
- Excellent protection against weathering

Further information can be found at tikkurila.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	0	
Minerals	0	
Fossil materials	15,5	
Bio-based materials	0	

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C

Biogenic carbon content in packaging, kg C 0.0045

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit 1 liter of paint

Mass per declared unit 1,00 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	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.

The paint production process at the manufacturing plant consists of several separate steps. In the initial step water, powders, and additives, are mixed together and then dispersed to a homogeneous paste. The following step is the let-down stage: binders, water, additives, etc. are mixed with the paste to obtain a ready-to-use paint. At the next quality control stage, the compliance of the product with the specified quality is checked. In the packaging stage, paint is filled into cans of various sizes on filling machines, and then, by robots, it is loaded onto pallets and

transferred to the warehouse. Eventually, the paint is transported to the construction site.

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.

Transportation impacts occurred from final product delivery to the construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions. The transportation distance is defined according to EPD HUB. The average distance of transportation from the production plant to the building site is assumed as 179 km and the transportation method is assumed to be a lorry. Transportation does not cause losses as products are packaged properly.

PRODUCT USE AND MAINTENANCE (B1-B7)

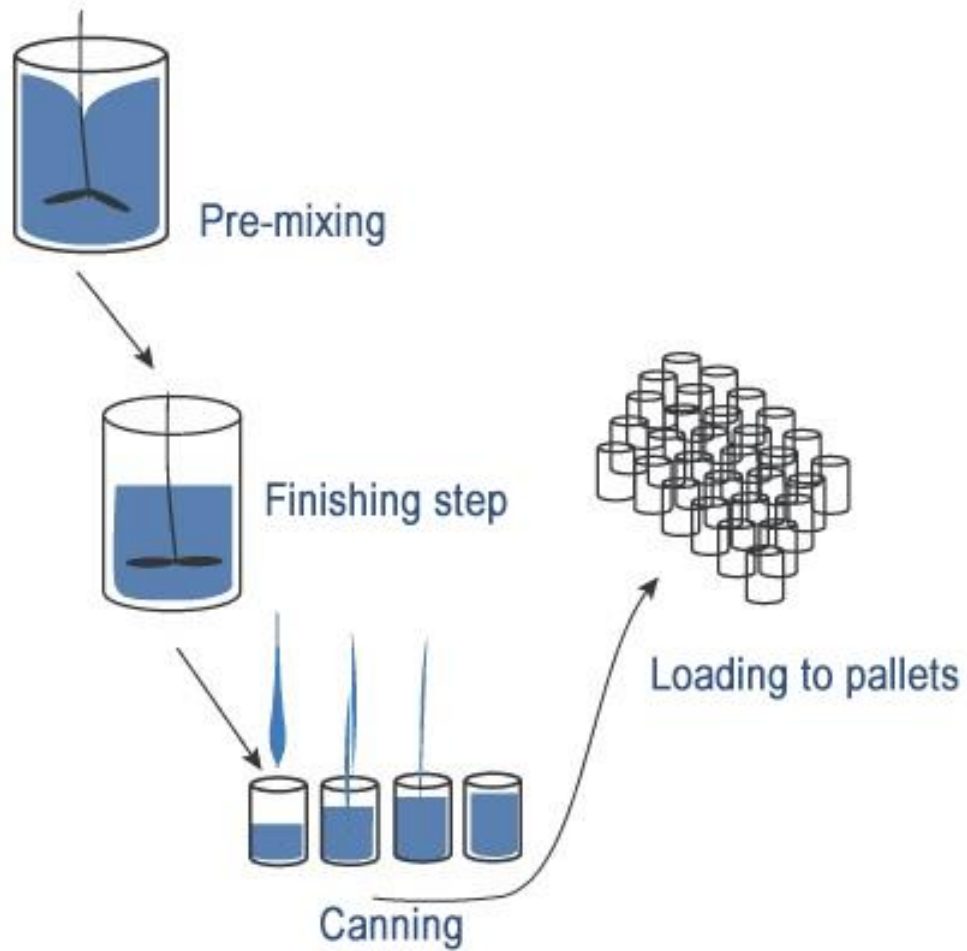
This EPD does not cover the use phase.

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

PRODUCT END OF LIFE (C1-C4, D)

Since the consumption of energy and natural resources is negligible for disassembling the end-of-life product, the impacts of demolition are assumed zero (C1). All the end-of-life products are assumed to be sent to the closest facilities (C2). It is assumed that about 75% of the paint for wood substrates is incinerated (C3) and 25% is landfilled (C4). Wooden pallets are used for transportation 10 times and then go to recycling. Kraft paper and cardboard from the packaging go to recycling. (D).

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in EN 15804:2012+A2:2019 and EPD HUB. The study does not exclude any hazardous materials or substances.

The study includes all major raw materials and energy consumption. All inputs and outputs of the unit processes for which data are available are included in the calculation. There is no neglected unit process of more than 1% of total mass and energy flows. The total neglected input and output flows do also not exceed 5% of energy usage or mass. The life cycle analysis covers all industrial processes from raw material acquisition to production, distribution, and end-of-life stages.

To simplify the modelling and due to the lack of accuracy in the available modelling resources, many constituents under 1% of product mass are excluded. These include preservatives and biocides which are only present in very small quantities in the product and do not have a significant impact on product emissions.

Major equipment manufacturing, construction and infrastructure activities, raw materials packaging, equipment maintenance and operation, personnel-related activities, energy, and water use related to company management and sales activities are excluded.

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 materials	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Averaged by shares of total revenue
Variation in GWP-fossil for A1-A3	40 %

The EPD is made for a representative product with the highest sales volumes. The variation of GWP fossils for A1 to A3 in the group is +32% for the highest value and -20% for the lowest value.

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 ¹⁾	kg CO ₂ e	3,52E-1	2,09E-2	6,47E-1	1,02E0	3,52E-2	4,48E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,62E-4	8,44E-2	1,39E-3	4,22E-3
GWP – fossil	kg CO ₂ e	3,08E-1	2,09E-2	6,53E-1	9,82E-1	3,55E-2	3,01E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,62E-4	8,43E-2	1,39E-3	1,38E-2
GWP – biogenic	kg CO ₂ e	4,42E-2	1,24E-5	-5,91E-3	3,83E-2	1,9E-5	1,46E-2	MND	MND	MND	MND	MND	MND	MND	0E0	3E-7	8,78E-5	2,2E-6	-9,74E-3
GWP – LULUC	kg CO ₂ e	4,19E-7	7,22E-6	4,49E-4	4,57E-4	1,26E-5	4,81E-6	MND	MND	MND	MND	MND	MND	MND	0E0	2,44E-7	3,86E-6	1,3E-7	1,84E-4
Ozone depletion pot.	kg CFC-11e	2,82E-8	4,8E-9	3,03E-8	6,33E-8	8,08E-9	8,02E-10	MND	MND	MND	MND	MND	MND	MND	0E0	1,45E-10	1,46E-9	8,2E-11	1,54E-9
Acidification potential	mol H ⁺ e	2,11E-3	1,4E-4	3,51E-3	5,76E-3	1,45E-4	5,08E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2,77E-6	4,05E-5	2,27E-6	8,59E-5
EP-freshwater ²⁾	kg Pe	1,12E-3	1,69E-7	2,44E-5	1,14E-3	2,97E-7	2,65E-7	MND	MND	MND	MND	MND	MND	MND	0E0	6,61E-9	1,79E-7	4,83E-9	1,8E-6
EP-marine	kg Ne	7,4E-4	3,88E-5	6,05E-4	1,38E-3	4,32E-5	1,32E-5	MND	MND	MND	MND	MND	MND	MND	0E0	8,04E-7	1,17E-5	7,65E-7	1,31E-5
EP-terrestrial	mol Ne	3,63E-3	4,29E-4	6,75E-3	1,08E-2	4,77E-4	1,45E-4	MND	MND	MND	MND	MND	MND	MND	0E0	8,89E-6	1,31E-4	8,43E-6	1,38E-4
POCP (“smog”) ³⁾	kg NMVOCe	1,12E-3	1,27E-4	2,96E-3	4,21E-3	1,46E-4	4,18E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2,78E-6	3,54E-5	2,7E-6	3,88E-5
ADP-minerals & metals ⁴⁾	kg Sbe	5,36E-6	3,62E-7	1,68E-5	2,26E-5	9,61E-7	2,16E-7	MND	MND	MND	MND	MND	MND	MND	0E0	1,61E-8	1,45E-7	2,84E-9	6,42E-7
ADP-fossil resources	MJ	6,28E0	3,18E-1	6,54E0	1,31E1	5,36E-1	7,39E-2	MND	MND	MND	MND	MND	MND	MND	0E0	9,88E-3	8,29E-2	6,24E-3	2,5E-1
Water use ⁵⁾	m ³ e depr.	2,18E-2	1,16E-3	5,54E-1	5,77E-1	1,73E-3	1,94E-2	MND	MND	MND	MND	MND	MND	MND	0E0	4,09E-5	1,6E-2	2,78E-4	1,05E-2

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	6,31E-12	1,73E-9	4,73E-8	4,9E-8	2,48E-9	7,34E-10	MND	MND	MND	MND	MND	MND	MND	0E0	5,04E-11	3,87E-10	4,32E-11	4,92E-10
Ionizing radiation ⁶⁾	kBq U235e	3,12E-5	1,38E-3	1,51E-2	1,65E-2	2,34E-3	3,5E-4	MND	MND	MND	MND	MND	MND	MND	0E0	4,12E-5	3,46E-4	2,46E-5	1,74E-3
Ecotoxicity (freshwater)	CTUe	3,39E0	2,44E-1	1,95E1	2,31E1	4,14E-1	2,37E-1	MND	MND	MND	MND	MND	MND	MND	0E0	8,45E-3	1,65E0	2,1E-2	5,1E-1
Human toxicity, cancer	CTUh	2,05E-8	6,93E-12	7,91E-9	2,84E-8	1,2E-11	1,08E-11	MND	MND	MND	MND	MND	MND	MND	0E0	2,2E-13	7,78E-12	1,67E-13	7,97E-12
Human tox. non-cancer	CTUh	1,28E-7	2,79E-10	2,68E-8	1,55E-7	4,68E-10	3,08E-10	MND	MND	MND	MND	MND	MND	MND	0E0	8,94E-12	5,31E-10	6,15E-12	2,27E-10
SQP ⁷⁾	-	2,83E-4	4,25E-1	1,6E0	2,03E0	4,46E-1	4,05E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,09E-2	7,52E-2	2,21E-2	2,4E-2

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	6,32E-4	3,81E-3	2,83E0	2,84E0	7,56E-3	8,05E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1,13E-4	5,93E-3	1,1E-4	5,23E-2
Renew. PER as material	MJ	0E0	0E0	2,17E-1	2,17E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	1,37E-1
Total use of renew. PER	MJ	6,32E-4	3,81E-3	3,05E0	3,05E0	7,56E-3	8,05E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1,13E-4	5,93E-3	1,1E-4	1,89E-1
Non-re. PER as energy	MJ	3,98E-3	3,18E-1	6,12E0	6,44E0	5,36E-1	7,39E-2	MND	MND	MND	MND	MND	MND	MND	0E0	9,88E-3	8,29E-2	6,24E-3	2,5E-1
Non-re. PER as material	MJ	0E0	0E0	4,21E-1	4,21E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of non-re. PER	MJ	3,98E-3	3,18E-1	6,54E0	6,86E0	5,36E-1	7,39E-2	MND	MND	MND	MND	MND	MND	MND	0E0	9,88E-3	8,29E-2	6,24E-3	2,5E-1
Secondary materials	kg	0E0	0E0	2,57E-2	2,57E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	9,88E-3
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	8,08E-4	6,26E-5	4,61E-3	0,00548	9,16E-5	1,08E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1,89E-6	1,39E-3	7,02E-6	2,64E-4

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	2,11E-5	3,3E-4	4,72E-1	4,73E-1	5,44E-4	4,71E-4	MND	MND	MND	MND	MND	MND	MND	0E0	1,3E-5	0E0	1,18E-5	1,97E-3
Non-hazardous waste	kg	8,77E-4	3,11E-2	1,13E0	1,16E0	3,74E-2	3,15E-2	MND	MND	MND	MND	MND	MND	MND	0E0	8,81E-4	0E0	2,5E-2	4,91E-2
Radioactive waste	kg	2,39E-8	2,17E-6	1,39E-5	1,61E-5	3,67E-6	4,24E-7	MND	MND	MND	MND	MND	MND	MND	0E0	6,54E-8	0E0	3,75E-8	1,36E-6

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	1,64E-2	1,64E-2	0E0	4,4E-3	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy rec	kg	0E0	0E0	4,02E-2	4,02E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	7,5E-2	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	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 ₂ e	3,08E-1	2,07E-2	6,33E-1	9,62E-1	3,52E-2	3,03E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,55E-4	8,42E-2	1,03E-3	1,37E-2
Ozone depletion Pot.	kg CFC ₁₁ e	2,8E-8	3,81E-9	2,6E-8	5,79E-8	6,43E-9	6,75E-10	MND	MND	MND	MND	MND	MND	MND	0E0	1,15E-10	1,7E-9	6,54E-11	1,72E-9
Acidification	kg SO ₂ e	1,77E-3	9,02E-5	2,87E-3	4,73E-3	7,13E-5	3,24E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2,01E-6	3,2E-5	1,68E-6	7,31E-5
Eutrophication	kg PO ₄ ³ e	1,12E-3	1,41E-5	9,79E-4	2,11E-3	1,46E-5	8,58E-5	MND	MND	MND	MND	MND	MND	MND	0E0	4,61E-7	1,51E-5	4,13E-5	3,98E-5
POCP (“smog”)	kg C ₂ H ₄ e	2,86E-4	3,72E-6	2,61E-4	5,51E-4	4,69E-6	2,39E-6	MND	MND	MND	MND	MND	MND	MND	0E0	8,7E-8	1,71E-6	2,24E-7	3,72E-6
ADP-elements	kg Sbe	5,36E-6	3,62E-7	1,68E-5	2,26E-5	9,61E-7	2,16E-7	MND	MND	MND	MND	MND	MND	MND	0E0	1,61E-8	1,45E-7	2,84E-9	6,42E-7
ADP-fossil	MJ	6,28E0	3,18E-1	6,54E0	1,31E1	5,36E-1	7,39E-2	MND	MND	MND	MND	MND	MND	MND	0E0	9,88E-3	8,29E-2	6,24E-3	2,5E-1

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 ₂ e	2,07E-4	2,07E-2	6,28E-1	6,49E-1	3,52E-2	3,04E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,54E-4	8,41E-2	1,08E-3	1,37E-2
Ozone Depletion	kg CFC ₁₁ e	2,7E-11	5,08E-9	3,49E-8	4E-8	8,56E-9	8,81E-10	MND	MND	MND	MND	MND	MND	MND	0E0	1,54E-10	1,55E-9	8,71E-11	1,95E-9
Acidification	kg SO ₂ e	1,12E-6	1,21E-4	2,96E-3	3,08E-3	1,26E-4	4,37E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2,42E-6	3,84E-5	2,7E-6	7,02E-5
Eutrophication	kg Ne	1,71E-7	1,2E-5	3E-4	3,12E-4	1,78E-5	5,8E-6	MND	MND	MND	MND	MND	MND	MND	0E0	3,36E-7	6,29E-6	3,13E-7	1,56E-5
POCP (“smog”)	kg O ₃ e	1,06E-5	2,46E-3	3,64E-2	3,89E-2	2,73E-3	8,05E-4	MND	MND	MND	MND	MND	MND	MND	0E0	5,1E-5	7,28E-4	4,85E-5	7,2E-4
ADP-fossil	MJ	1,93E-4	4,55E-2	5,02E-1	5,48E-1	7,67E-2	8,21E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1,39E-3	9,32E-3	8,58E-4	1,57E-2

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.

Silvia Vilčeková, as an authorized verifier acting for EPD Hub Limited
20.01.2023

