

ENVIRONMENTAL PRODUCT DECLARATION

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



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	Silvia Vilcekova, 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	Tikkurila Vinha Tikkurila Pika-teho Tikkurila Valtti Opaque Tikkurila Pinja Protect Top 25 Tikkurila Pinja Protect M 20 Tikkurila Pinja Protect GM Tikkurila Pinja Mid Pro Tikkurila Ultra Pro 10 Tikkurila Ultra Pro H10 CP Tikkurila Ultra Pro 30 Tikkurila Ultra Classic Tikkurila Ultra Pro Plus 30 Alcro Bestå Accent Alcro Modern Oljefärg Alcro Bestå Utsikt Alcro Bestå Arkitekt Alcro Grundfärg Beckers Perfekt Helmatt FönsterSnickeri Plus Beckers Perfekt Oljefärg Beckers Perfekt FönsterSnickeri Plus Beckers Perfekt Helmatt Fasad Plus Beckers Primex Trägrund plus Vivacolor Villa Ultima Vivacolor Villa Akva
Place of production	Vantaa and Nykvarn facilities
Period for data	Calendar year 2019
Averaging in EPD	Multiple products and multiple factories

Variation in GWP-fossil for
A1-A3 40 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 liter of paint
Declared unit mass	1.204 kg
GWP-fossil, A1-A3 (kgCO₂e)	2,23E0
GWP-total, A1-A3 (kgCO₂e)	2,28E0
Secondary material, inputs (%)	6.55
Secondary material, outputs (%)	36.0
Total energy use, A1-A3 (kWh)	9.17
Total water use, A1-A3 (m³e)	0.0314

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

Tikkurila Valtti Opaque

Exterior wood paint

- Withstands extreme weather conditions.
- Offers greater protection against mold.
- Creates a water-repellent paint film that is water vapor-permeable, allowing moisture to escape from the structure.
- The semi-matt paint gives the wood an attractive appearance and emphasizes the structure of the wood.

Tikkurila Vinha

- For new wooden surfaces and surfaces previously treated with Vinha, acrylate paint, oil paint or translucent wood finish. Also suitable for factory primed wood.
- Emphasizes the wood structure
- UV and moisture protection
- Protection against mould on paint film

Tikkurila Pinja Protect Top 25

A water-borne acrylic topcoat

- High-quality industrial Nordic Swan ecolabelled topcoat for exterior claddings
- Fast drying topcoat
- Excellent gloss retention

Tikkurila Pika-Teho

Oil-modified acrylic paint for exterior wooden surfaces.

- For wooden houses adheres well to new, factory-primed surfaces as well as previously painted surfaces. The paint makes deep contact with the wood.
- Durable by nature, formulated to withstand weather
- Ensures a long-lasting colour

Tikkurila Ultra Classic

Polyacrylate paint for untreated, industrially primed or surfaces treated previously with exterior paints

- Strong colour retention
- Flexible on the wood without cracking and flaking
- Keep the surface clean longer
- Contains an anti-mould agent that protects the paint layer

Tikkurila Ultra Pro Plus 30

A water-borne one-component, polyacrylate exterior topcoat with optimal price-quality ratio.

- Outstanding protection against weathering, standard EN 927
- Extremely low water absorption, standard EN 927
- Can be used in Nordic Swan ecolabelled buildings

Tikkurila Pinja Mid Pro

An all-around water-borne acrylic primer and mid-coat for exterior wood.

- Mid-coat with a primer's adhesion
- Easy to use
- Available in thousands of colors

Tikkurila Valtti Opaque

The semi-matt paint gives the wood an attractive appearance and emphasizes the structure of the wood

- For new wooden surfaces and surfaces previously treated with Valtti Opaque
- Withstands extreme weather conditions
- Vapor-permeable, allows moisture to escape from the structure

Tikkurila Ultra Pro 10

A water-borne one-component, polyacrylate exterior topcoat with optimal price-quality ratio.

- Dries even without oven
- Excellent protection against weathering

Tikkurila Pinja Protect GM

A water-borne all-round alkyd primer to ensure high quality result.

- For priming and midcoating prior to Alcro and Beckers high-quality exterior paints
- Swan and CMP approved
- Available in thousands of colors

Tikkurila Ultra Pro 30

A water-borne one-component, polyacrylate exterior topcoat with optimal price-quality ratio.

- Excellent protection against weathering, standard EN 927
- Extremely low water absorption, standard EN 927
- Dries even without oven

Tikkurila Ultra Pro H10

A water-borne one-component, polyacrylate exterior topcoat.

- Short throughput time
- Extremely low water absorption, standard EN 927

Alcro Bestå Accent

A water-borne window paint that can also be used on wooden house details

- Full matt finish with excellent gloss and color retention.
- Easy to apply and doesn't drip.
- The product is easy to paint sparingly against glass surfaces.

Alcro Modern Oljefärg

A water-borne oil-based topcoat for various wooden surfaces, such as wooden facades, knot boards, railings, fences, window linings and windshields outdoors. The paint dries quickly and has a good gloss retention. Modern Oil Paint is developed to be painted on many different surfaces.

Alcro Bestå Utsikt

A windowpaint which provides a semigloss weather-resistant surface with excellent gloss and color retention. It is easy to apply and doesn't drip. A water-borne window paint that can also be used on wooden house details.

Alcro Grundfärg is a primer for windows and facades, exterior wood. The primer dries quickly, has good opacity and provides good adhesion to substrates and topcoats. Reduces the risk of penetration of tannins from the wood and effectively penetrates the substrate and prevents moisture from penetrating into the wood.

Alcro Bestå Arkitekt

provides a beautiful full matt surface for wooden facades outdoors. The paint is specially developed to give the facade a stylish look that remains matt and keeps the color over time. Bestå Arkitekt can be tinted in any outdoor color. Bestå Arkitekt provides a surface with deep color reproduction, especially in dark colors.

Beckers Perfekt FönsterSnickeri Plus

A water-borne window paint that can also be used on wooden house details

- A semigloss weather-resistant surface
- Excellent gloss and color retention
- Easy to apply and doesn't drip.

Beckers Perfekt Oljefärg

A waterborne alkyd paint braced with acrylate

- Adapted for painting of wooden façades, fences, bargeboards, doors and the like.
- Easy to apply, does not drip and gives a nice semi-gloss surface.

Beckers Perfekt Helmatt Fasad Plus

A waterborne paint that gives a fully matt elegant look on previously painted or unpainted wood outdoors. The paint has very good outdoor durability and keeps the color for many years. Paint with Perfekt Helmatt Fasad Plus if you want a simple paint to work with and at the same time a beautiful and sustainable result. Use Perfekt Helmatt Fasad Plus together with Primex Grundolja Trä Plus and Primex Trägrund Plus for best result.

Beckers Primex Trägrund Plus is a primer that protects and counteracts moisture absorption. It has good covering ability and provides a good attachment for the topcoat. Primex Trägrund Plus has a specially developed quick-drying formula that allows you, with the weather on your side, to prime and paint with topcoat the same day. Primex Trägrund Plus gives an excellent protection and durability. When painting windows, follow the instructions for Perfekt Plus Fönster & Snickerifärg.

Beckers Perfekt Fönster & Snickerifärg Helmatt Plus

Full matt paint that dries quickly and gives windows and carpentry maximum protection.

- It is specially adapted for painting wooden windows and carpentry.
- The paint is flow-proof, easy to apply

Vivacolor Villa Ultima

Semi-matte water-based alkyd-reinforced wood protection paint for exterior work.

- Weatherproof up to 15 years
- Forms a paint surface that repels dirt and water
- Perfect for painting sawn wooden surfaces

Vivacolor Villa Akva

Matt water-based wooden house paint.

- Weatherproof up to 15 years
- Dirt and water repellent paint surface
- With very good tone and gloss stability

Further information can be found at tikkurila.com, alcro.se, beckers.se and vivacolor.ee

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals		
Minerals	20	Europe
Fossil materials	25	Europe
Bio-based materials	2	Europe

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0.007
Biogenic carbon content in packaging, kg C	0.0045

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 liter of paint
Mass per declared unit	1.204 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

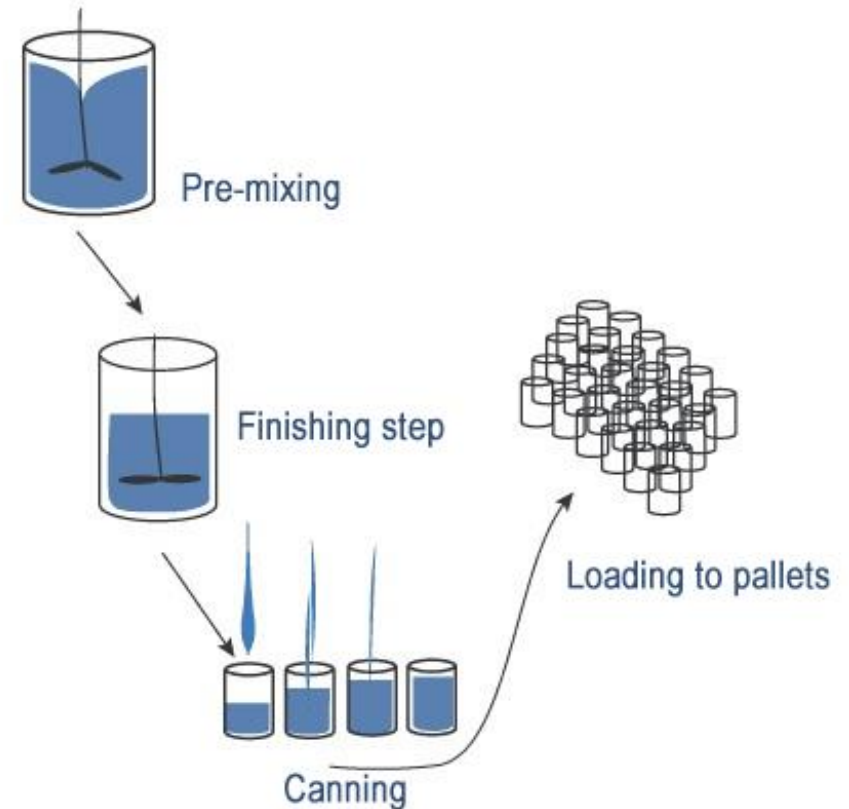
Modules not declared = MND. Modules not relevant = MNR.

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).

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 modeling and due to the lack of accuracy in the available modeling 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, raw material packaging, construction and infrastructure activities, 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 and multiple factories
Averaging method	Represented by the highest volume sold product
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 +27% for the highest value and -24% 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	1,52E0	1,13E-1	6,47E-1	2,28E0	4,13E-2	4,47E-2	MND	MND	MND	MND	MND	MND	MND	0E0	3,82E-3	4,88E-1	8E-3	4,22E-3
GWP – fossil	kg CO ₂ e	1,46E0	1,12E-1	6,53E-1	2,23E0	4,16E-2	3E-2	MND	MND	MND	MND	MND	MND	MND	0E0	3,82E-3	4,88E-1	7,99E-3	1,38E-2
GWP – biogenic	kg CO ₂ e	5,68E-2	6,08E-5	-5,91E-3	5,09E-2	2,22E-5	1,46E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,73E-6	5,08E-4	1,27E-5	-9,74E-3
GWP – LULUC	kg CO ₂ e	8,48E-4	4,06E-5	4,49E-4	1,34E-3	1,48E-5	4,65E-6	MND	MND	MND	MND	MND	MND	MND	0E0	1,41E-6	2,23E-5	7,52E-7	1,84E-4
Ozone depletion pot.	kg CFC-11e	1,57E-7	2,54E-8	3,03E-8	2,13E-7	9,46E-9	7,94E-10	MND	MND	MND	MND	MND	MND	MND	0E0	8,39E-10	8,45E-9	4,72E-10	1,54E-9
Acidification potential	mol H ⁺ e	2,75E-2	6,67E-4	3,51E-3	3,17E-2	1,7E-4	5,03E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,6E-5	2,34E-4	1,31E-5	8,59E-5
EP-freshwater ²⁾	kg Pe	8,15E-4	9,72E-7	2,44E-5	8,41E-4	3,48E-7	2,57E-7	MND	MND	MND	MND	MND	MND	MND	0E0	3,81E-8	1,04E-6	2,78E-8	1,8E-6
EP-marine	kg Ne	2,14E-3	1,86E-4	6,05E-4	2,93E-3	5,05E-5	1,31E-5	MND	MND	MND	MND	MND	MND	MND	0E0	4,64E-6	6,79E-5	4,4E-6	1,31E-5
EP-terrestrial	mol Ne	1,68E-2	2,06E-3	6,75E-3	2,56E-2	5,58E-4	1,44E-4	MND	MND	MND	MND	MND	MND	MND	0E0	5,13E-5	7,58E-4	4,85E-5	1,38E-4
POCP (“smog”) ³⁾	kg NMVOCe	6,23E-3	6,15E-4	2,96E-3	9,81E-3	1,71E-4	4,15E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,6E-5	2,05E-4	1,55E-5	3,88E-5
ADP-minerals & metals ⁴⁾	kg Sbe	4,16E-5	2,4E-6	1,68E-5	6,08E-5	1,13E-6	2,13E-7	MND	MND	MND	MND	MND	MND	MND	0E0	9,29E-8	8,4E-7	1,64E-8	6,42E-7
ADP-fossil resources	MJ	2,42E1	1,7E0	6,54E0	3,25E1	6,28E-1	7,23E-2	MND	MND	MND	MND	MND	MND	MND	0E0	5,7E-2	4,8E-1	3,59E-2	2,5E-1
Water use ⁵⁾	m ³ e depr.	1,58E0	6,28E-3	5,54E-1	2,14E0	2,02E-3	1,38E-2	MND	MND	MND	MND	MND	MND	MND	0E0	2,36E-4	9,28E-2	1,6E-3	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	9,49E-8	8,75E-9	4,73E-8	1,51E-7	2,9E-9	7,3E-10	MND	MND	MND	MND	MND	MND	MND	0E0	2,91E-10	2,24E-9	2,49E-10	4,92E-10
Ionizing radiation ⁶⁾	kBq U235e	5,73E-2	7,3E-3	1,51E-2	7,97E-2	2,74E-3	3,39E-4	MND	MND	MND	MND	MND	MND	MND	0E0	2,38E-4	2E-3	1,42E-4	1,74E-3
Ecotoxicity (freshwater)	CTUe	3,52E1	1,34E0	1,95E1	5,61E1	4,85E-1	2,35E-1	MND	MND	MND	MND	MND	MND	MND	0E0	4,87E-2	9,56E0	1,21E-1	5,1E-1
Human toxicity, cancer	CTUh	7,28E-9	3,81E-11	7,91E-9	1,52E-8	1,41E-11	1,06E-11	MND	MND	MND	MND	MND	MND	MND	0E0	1,27E-12	4,5E-11	9,6E-13	7,97E-12
Human tox. non-cancer	CTUh	9,19E-8	1,49E-9	2,68E-8	1,2E-7	5,48E-10	3,02E-10	MND	MND	MND	MND	MND	MND	MND	0E0	5,16E-11	3,08E-9	3,55E-11	2,27E-10
SQP ⁷⁾	-	3,56E0	1,99E0	1,6E0	7,15E0	5,23E-1	4,03E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,27E-2	4,35E-1	1,27E-1	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	1,86E0	2,11E-2	2,83E0	4,71E0	8,86E-3	7,83E-3	MND	MND	MND	MND	MND	MND	MND	0E0	6,55E-4	3,43E-2	6,34E-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	1,86E0	2,11E-2	3,05E0	4,93E0	8,86E-3	7,83E-3	MND	MND	MND	MND	MND	MND	MND	0E0	6,55E-4	3,43E-2	6,34E-4	1,89E-1
Non-re. PER as energy	MJ	2,05E1	1,7E0	6,12E0	2,83E1	6,28E-1	7,23E-2	MND	MND	MND	MND	MND	MND	MND	0E0	5,7E-2	4,8E-1	3,59E-2	2,5E-1
Non-re. PER as material	MJ	2,46E-1	0E0	4,21E-1	6,67E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of non-re. PER	MJ	2,07E1	1,7E0	6,54E0	2,9E1	6,28E-1	7,23E-2	MND	MND	MND	MND	MND	MND	MND	0E0	5,7E-2	4,8E-1	3,59E-2	2,5E-1
Secondary materials	kg	5,31E-2	0E0	2,57E-2	7,89E-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	2,64E-2	3,23E-4	4,61E-3	0,0314	1,07E-4	7,63E-4	MND	MND	MND	MND	MND	MND	MND	0E0	1,09E-5	8,06E-3	4,04E-5	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	2,17E-1	1,88E-3	4,72E-1	6,91E-1	6,37E-4	4,61E-4	MND	MND	MND	MND	MND	MND	MND	0E0	7,51E-5	0E0	6,78E-5	1,97E-3
Non-hazardous waste	kg	2,81E0	1,53E-1	1,13E0	4,1E0	4,38E-2	3,11E-2	MND	MND	MND	MND	MND	MND	MND	0E0	5,08E-3	0E0	1,44E-1	4,91E-2
Radioactive waste	kg	5,22E-5	1,15E-5	1,39E-5	7,76E-5	4,3E-6	4,15E-7	MND	MND	MND	MND	MND	MND	MND	0E0	3,77E-7	0E0	2,16E-7	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	4,34E-1	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	1,42E0	1,11E-1	6,33E-1	2,17E0	4,13E-2	3,02E-2	MND	MND	MND	MND	MND	MND	MND	0E0	3,78E-3	4,87E-1	5,92E-3	1,37E-2
Ozone depletion Pot.	kg CFC _{11e}	1,54E-7	2,02E-8	2,6E-8	2,01E-7	7,53E-9	6,65E-10	MND	MND	MND	MND	MND	MND	MND	0E0	6,66E-10	9,82E-9	3,77E-10	1,72E-9
Acidification	kg SO ₂ e	2,99E-2	4,32E-4	2,87E-3	3,33E-2	8,35E-5	3,2E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,16E-5	1,85E-4	9,67E-6	7,31E-5
Eutrophication	kg PO ₄ ^{3e}	2,82E-3	7,42E-5	9,79E-4	3,87E-3	1,72E-5	8,56E-5	MND	MND	MND	MND	MND	MND	MND	0E0	2,66E-6	8,74E-5	2,38E-4	3,98E-5
POCP (“smog”)	kg C ₂ H ₄ e	1,25E-3	1,85E-5	2,61E-4	1,53E-3	5,5E-6	2,36E-6	MND	MND	MND	MND	MND	MND	MND	0E0	5,02E-7	9,9E-6	1,29E-6	3,72E-6
ADP-elements	kg Sbe	4,16E-5	2,4E-6	1,68E-5	6,08E-5	1,13E-6	2,13E-7	MND	MND	MND	MND	MND	MND	MND	0E0	9,29E-8	8,4E-7	1,64E-8	6,42E-7
ADP-fossil	MJ	2,42E1	1,7E0	6,54E0	3,25E1	6,28E-1	7,23E-2	MND	MND	MND	MND	MND	MND	MND	0E0	5,7E-2	4,8E-1	3,59E-2	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	1,25E0	1,11E-1	6,28E-1	1,99E0	4,12E-2	3,03E-2	MND	MND	MND	MND	MND	MND	MND	0E0	3,78E-3	4,87E-1	6,21E-3	1,37E-2
Ozone Depletion	kg CFC _{11e}	1,48E-7	2,69E-8	3,49E-8	2,1E-7	1E-8	8,7E-10	MND	MND	MND	MND	MND	MND	MND	0E0	8,88E-10	8,96E-9	5,02E-10	1,95E-9
Acidification	kg SO ₂ e	2,07E-2	5,76E-4	2,96E-3	2,43E-2	1,48E-4	4,33E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,4E-5	2,22E-4	1,56E-5	7,02E-5
Eutrophication	kg Ne	1,13E-3	6,23E-5	3E-4	1,49E-3	2,08E-5	5,73E-6	MND	MND	MND	MND	MND	MND	MND	0E0	1,94E-6	3,64E-5	1,8E-6	1,56E-5
POCP (“smog”)	kg O ₃ e	7,78E-2	1,18E-2	3,64E-2	1,26E-1	3,2E-3	7,99E-4	MND	MND	MND	MND	MND	MND	MND	0E0	2,94E-4	4,21E-3	2,8E-4	7,2E-4
ADP-fossil	MJ	2,29E0	2,42E-1	5,02E-1	3,03E0	8,98E-2	8,13E-3	MND	MND	MND	MND	MND	MND	MND	0E0	8,01E-3	5,39E-2	4,94E-3	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

