ENVIRONMENTAL PRODUCT DECLARATION

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

EVODUCT pipes

Evopipes SIA

EPD HUB, HUB-0152

Publishing date 14 October 2022, last updated date 14 October 2022, valid until 14 October 2027

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Evopipes SIA
Address	Langervaldes street 2a, Jelgava, Latvia
Contact details	info@evopipes.lv
Website	www.evopipes.lv

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 and D
EPD author	Inese Meldere, Alise Dude; Evopipes SIA
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 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	EVODUCT pipes
Additional labels	EVODUCT STANDARD N750 / EVODUCT STANDARD N1250 / EVODUCT GROOVE N750 / EVODUCT GROOVE N1250
Product reference	All products from groups No.206 (product number starts with 206).
Place of production	Latvia
Period for data	2021
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	<1 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of pipe
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	2,19E0
GWP-total, A1-A3 (kgCO2e)	2,2E0
Secondary material, inputs (%)	5,01E-1
Secondary material, outputs (%)	0E0
Total energy use, A1-A3 (kWh)	8,1E0
Total water use, A1-A3 (m3e)	5,52E-3

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Evopipes is manufacturer of plastic pipe systems for electricity, telecom, water, wastewater and gas. Our production is based in Latvia, and we supply client's requests around the world.
Our main strategy is to design advanced pipeline products that increase work efficiency in the field of installing and exploiting pipe systems.
We are certified according to EN ISO 9001 Quality Management system, EN ISO 14001 Environmental Management system and EN ISO 50001 Energy Management system.

PRODUCT DESCRIPTION

EVODUCT cable protection pipes are made of high-density polyethylene (HDPE) and designed for the installation of optical fibre cables and other communication line systems employing traditional installation methods - pulling with a cord or blowing. These pipes have a smooth outer surface and smooth inner surface (EVODUCT STANDARD) or longitudinal grooved inner surface (EVODUCT GROOVE). Coupling of pipes are made by couplers. EVODUCT has a length mark on the pipes that allow to determine the overall length during the installation process.

EVODUCT pipes are suited for use in systems requiring a high compression strength, e.g., under roads, squares, car parks. The conduits can be buried directly in the soil, in concrete, or through water barriers, in concrete pipes, channels and blocks, along bridges and flyovers.

EVODUCT pipes are made in compliance with the requirements of following standards:

EN 61386-1:2018 Conduit systems for cable management – Part 1: General requirements (IEC 61386-1:2008).

EN 61386-24:2018 Conduit systems for cable management – Part 24: Particular requirements – Conduit systems buried underground (IEC 61386-24:2004).

Conforms **DIN 8074** Polyethylene (PE) - Pipes PE 80, PE 100 – Dimensions.

Conforms **DIN 8075** Polyethylene (PE) pipes - PE 80, PE 100 - General quality requirements, testing.

DIN 16874 High-density polyethylene (HDPE) pipes for the underground telecommunications – Dimensions and technical delivery conditions.

EVODUCT pipes

PRODUCT	EVODUCT GROOVE	EVODUCT STANDARD
DN/OD, mm	16, 20, 25, 32, 40, 50, 63, 75, 90, 110	
Outer surface	smooth	
Inner surface	longitudinal grooved	smooth
Material	polyethylene (HDPE)	
Compression strength class, N/20cm	750, 1250	
Impact resistance	N (normal)	
Temperature shrinkage	≤3% 110 ºC, 1 h	
Temperature resistance	-25°C to +90°C	
Pipe type	pliable	
Length, m	300, 400, 500, 600, 750, 1000	
Colour	Orange, black with stripes	

Further information can be found at www.evopipes.lv.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	0	-
Minerals	0,055	Spain
Fossil materials	99,945	Germany
Bio-based materials	0	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	2e-7

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of pipe
Mass per declared unit	1 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.

Manufacturing materials (A1)

The first module includes extraction and production of raw materials used in manufacturing process, mainly polyethylene granulates, as well as additives used in small amounts. Environmental impact for production of packaging materials and auxiliary materials are also included in this module.

Transport for manufacturing materials (A2)

Transport distances of materials to manufacturing site was modelled taking account location of suppliers and transportation routes. Raw materials are transported by lorry, by boat and by ferry. Packaging materials and auxiliary tools are transported by lorry on the road.

Manufacturing process (A3)

1. Raw Materials conveying / dosing / mixing

Polyethylene as finished compound is supplied (in either plastic bags or bulk form) and filled into silos and storage bins. From silos raw materials are carried to each pipe extruder through vacuum pressure transfer system, then dosed by gravimetric weighing system.

2. Extrusion

The raw materials are melted at high temperature in the extruders and pushed through a die-head to form a double-layer sleeve.

3. Forming with vacuum, calibration

During the extrusion process the resultant polyethylene mono- or double-layer sleeve is moved into the calibrator mounted in a vacuum tank. Smooth-wall pipe is formed by the vacuum acting through the slits of the calibrator, with initial cooling provided by the means of water applied evenly through the spraying nozzles. Process of forming smooth-wall pipe having wall thickness within required limits is continuous / non-stop.

4. Ultrasonic scanning

Precision of dimensions attained by the pipe during vacuum forming and calibration stage are constantly checked by the ultrasonic scanner representing a water chamber with sensors. Measured results are communicated to the gravimetric weighing system and to the haul-off unit to maintain balance between the compound quantity dosed and speed of the line, thus securing ongoing optimality of pipe's parameters.

5. Cooling

Cooling of the pipe and stabilization of its dimensions continues in the tanks positioned after the vacuum tank, via water spraying nozzles.

6. Printing

Hot-stamp marking unit (or thermal ink-jet printer) marks the pipes at regular intervals with identification according to product name, type of polyethylene used, size, class, pressure rating, standard number, meter count and production date.

7. Hauling-off

To ensure continuity and evenness of the pipe production process the pipes are moved down the line by a unit hauling them off with tracks positioned at equal intervals around the pipes.

8. Cutting

The pipes are being cut in required length (most commonly 300m, 400m, 500m, 600m, 750m, 1000m for coils) and moved to the coiler.

9. Ejection from the line / Coiling

Pipes produced in longer lengths are moved to the coiler, where ejection of the finished coils is done either by the coiler itself, or by the forklift.

10. Packaging

Fixation of the coils is done by PET straps; bundling on wooden pallets and stretch-wrapping is applied depending on the size. The finished pipes are stored in holding area for inspection and quality acceptance.

10. Dispatch

After inspection and acceptance, the pipes are stored to await dispatch.

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 from factory to construction site (A4)

Transportation from EVOPIPES factory to construction site creates impact to the environment and is calculated in product LCA. Product is delivered by lorry and ferry with average distance 490 km, therefore emissions are caused by fuel. During transportation there is not product or packaging loss.

Construction process (A5)

Pipes are installed underground using excavator (diesel energy) and sand-gravel mix to strengthen the pipe in trench. Approximately 4,34% of product goes to landfilled waste after installation. Other waste occurs from packaging that goes to recycling/incineration. This scenario is based on TEPPFAs calculations.

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)

Deconstruction (C1)

End of Life stage for product occurs when pipe needs to be replaced. Since the consumption of energy and resources is negligible for disassembling of the end-of-life product, the impacts of demolition are assumed to be zero (this scenario is based on TEPPFAs calculations).

Transportation (C2)

5% of the end-of-life product assumed to be collected form demolition site and sent to landfill thus transportation emissions occur while product is transported to landfill place.

Recycling (C3)

Pipes are not recycled during end-of-life stage.

Disposal (C4)

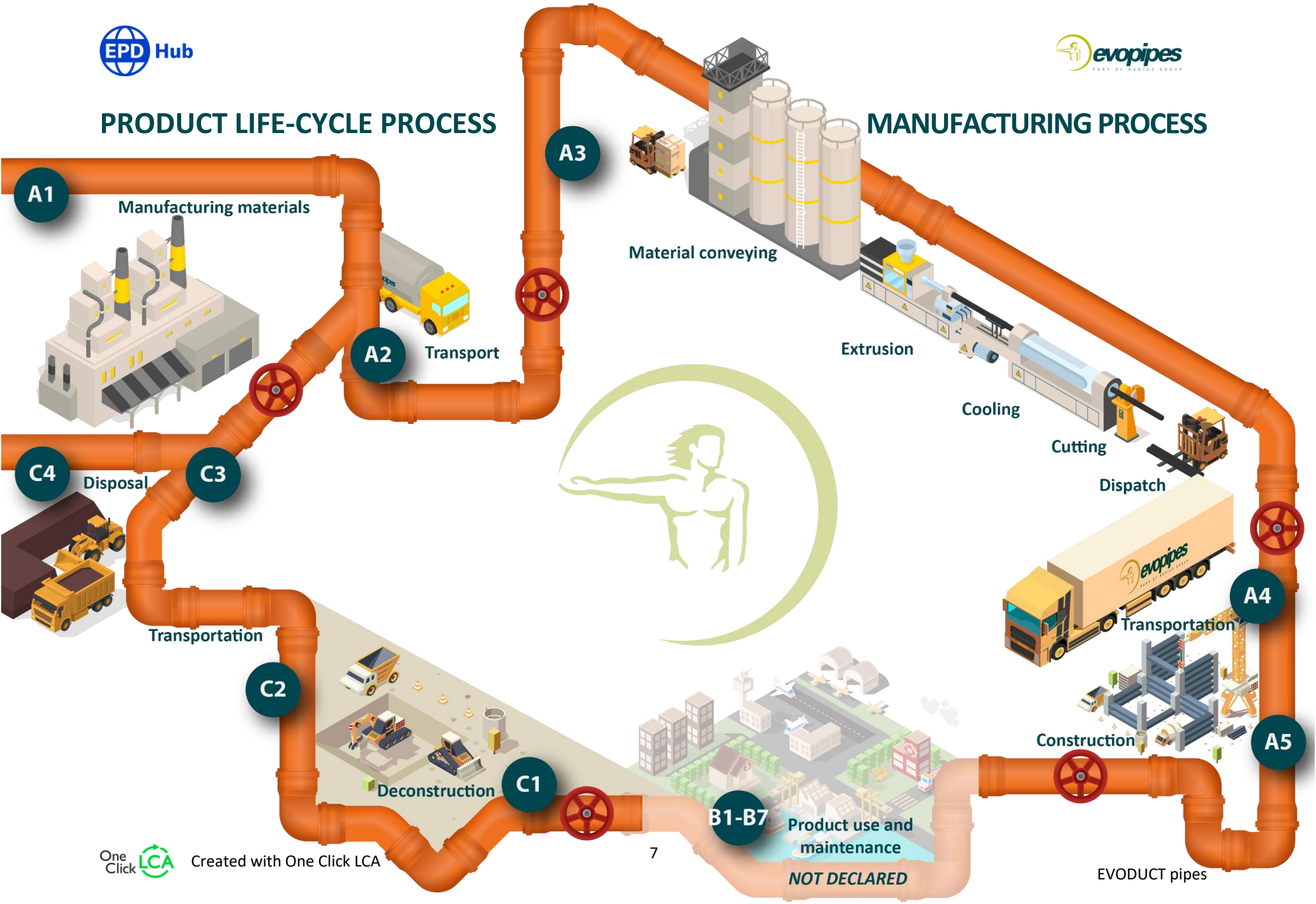
For end-of-life calculation method is used landfilled scenario because it is the most representative. Based on TEPPFAs calculations assumed that in 95% of cases pipes are left in ground and in other 5% of time pipes are dig out and transported to nearest landfilling place.

Benefits and loads beyond system boundary (D)

To look at benefits outside system boundaries, recycled packaging material can be processed into granules, used as a secondary raw material, and incinerated products (wooden pallets and frames) are being converted to energy.

PRODUCT LIFE-CYCLE PROCESS

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	Allocated by mass or volume
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 mass
Variation in GWP-fossil for A1-A3	<1 %

Production process, transportation, installation, demolition and waste treatment are the same for all four products. This EPD represents an average of four products under product names EVODUCT STANDARD N750, EVODUCT STANDARD N1250, EVODUCT GROOVE N750 and EVODUCT GROOVE N1250. Flow quantities are weighted by the annual product output from each of them. Impacts on GWP fossil in A1-A3 modules, because of variance of raw materials mix and packaging materials between each of these four products, is less than +/-0,2%. EVODUCT STANDARD N750 GWP fossil in A1-A3 is equal to 2,193 kg CO2e; EVODUCT STANDARD N1250 fossil in A1-A3 is equal to 2,188 kg CO2e, EVODUCT GROOVE N750 fossil in A1-A3 is equal to 2,190 kg CO2e and EVODUCT GROOVE N1250 fossil in A1-A3 is equal to 2,191 kg CO2e.

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	2,01E0	1,77E-1	9,15E-3	2,2E0	4,74E-2	4,95E3	MND	MND	MND	MND	MND	MND	MND	0E0	2,27E-4	0E0	1,27E-1	-5,41E-4
GWP – fossil	kg CO_2e	2E0	1,77E-1	8,9E-3	2,19E0	4,77E-2	4,95E3	MND	MND	MND	MND	MND	MND	MND	0E0	2,27E-4	0E0	1,27E-1	-5,66E-4
GWP – biogenic	kg CO_2e	1,04E-2	7,35E-6	2,42E-4	1,07E-2	1,72E-5	1,38E0	MND	MND	MND	MND	MND	MND	MND	0E0	1,65E-7	0E0	1,14E-4	2,49E-5
GWP – LULUC	kg CO_2e	6,19E-4	8,96E-5	5,57E-6	7,14E-4	2,01E-5	4,19E-1	MND	MND	MND	MND	MND	MND	MND	0E0	6,84E-8	0E0	5,58E-6	4,73E-8
Ozone depletion pot.	kg CFC_{-11}e	5,11E-8	3,73E-8	1,42E-9	8,98E-8	1,06E-8	1,07E-3	MND	MND	MND	MND	MND	MND	MND	0E0	5,34E-11	0E0	3,28E-9	-5,49E-13
Acidification potential	mol H^+e	7,2E-3	4,31E-3	4,65E-5	1,16E-2	7,26E-4	5,17E1	MND	MND	MND	MND	MND	MND	MND	0E0	9,54E-7	0E0	9,2E-5	-1,97E-6
EP-freshwater[3)]	kg Pe	3,46E-5	9,17E-7	4,14E-7	3,59E-5	3,16E-7	2E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,85E-9	0E0	1,96E-7	-1,22E-9
EP-marine	kg Ne	1,23E-3	1,11E-3	1,07E-5	2,35E-3	1,87E-4	2,28E1	MND	MND	MND	MND	MND	MND	MND	0E0	2,88E-7	0E0	5,24E-5	-2,94E-7
EP-terrestrial	mol Ne	1,37E-2	1,23E-2	1,08E-4	2,61E-2	2,08E-3	2,51E2	MND	MND	MND	MND	MND	MND	MND	0E0	3,18E-6	0E0	3,4E-4	-3,39E-6
POCP (“smog”)	kg NMVOCe	6,69E-3	3,22E-3	4,12E-5	9,95E-3	5,63E-4	6,89E1	MND	MND	MND	MND	MND	MND	MND	0E0	1,02E-6	0E0	1,25E-4	-2,09E-6
ADP-minerals & metals	kg Sbe	1,79E-5	1,59E-6	1,34E-7	1,97E-5	6,24E-7	7,62E-3	MND	MND	MND	MND	MND	MND	MND	0E0	3,88E-9	0E0	1,14E-7	-3,98E-9
ADP-fossil resources	MJ	7,08E1	2,4E0	1,69E-1	7,33E1	6,92E-1	6,81E4	MND	MND	MND	MND	MND	MND	MND	0E0	3,53E-3	0E0	2,5E-1	-2,6E-2
Water use[2)]	m^3e depr.	1,4E0	5,81E-3	3,92E-3	1,41E0	2,15E-3	1,41E2	MND	MND	MND	MND	MND	MND	MND	0E0	1,31E-5	0E0	1,11E-2	-5,24E-4

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	1,19E0	1,93E-2	2,41E0	3,62E0	7,23E-3	3,69E2	MND	MND	MND	MND	MND	MND	MND	0E0	4,45E-5	0E0	4,38E-3	-6,77E-5
Renew. PER as material	MJ	0E0	0E0	4,7E-6	4,7E-6	0E0	-4,7E-6	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	1,19E0	1,93E-2	2,41E0	3,62E0	7,23E-3	3,69E2	MND	MND	MND	MND	MND	MND	MND	0E0	4,45E-5	0E0	4,38E-3	-6,77E-5
Non-re. PER as energy	MJ	2,3E1	2,4E0	1,45E-1	2,55E1	6,92E-1	6,81E4	MND	MND	MND	MND	MND	MND	MND	0E0	3,53E-3	0E0	2,5E-1	-6,04E-3
Non-re. PER as material	MJ	4,78E1	0E0	2,39E-2	4,78E1	0E0	-2,15E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	-1,99E-2
Total use of non-re. PER	MJ	7,08E1	2,4E0	1,69E-1	7,33E1	6,92E-1	6,81E4	MND	MND	MND	MND	MND	MND	MND	0E0	3,53E-3	0E0	2,5E-1	-2,6E-2
Secondary materials	kg	4,38E-3	0E0	6,35E-4	5,01E-3	0E0	2,68E-4	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	4,16E-4
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	5,1E-3	2,97E-4	1,23E-4	5,52E-3	1,16E-4	6,33E0	MND	MND	MND	MND	MND	MND	MND	0E0	7,36E-7	0E0	2,81E-4	-8,64E-7

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	4,44E-2	2,52E-3	1,5E-3	4,84E-2	6,99E-4	7,33E1	MND	MND	MND	MND	MND	MND	MND	0E0	3,43E-6	0E0	4,54E-4	-2,34E-6
Non-hazardous waste	kg	1,54E0	9,68E-2	2,22E-2	1,66E0	5,23E-2	7,86E2	MND	MND	MND	MND	MND	MND	MND	0E0	3,8E-4	0E0	1E0	5,44E-5
Radioactive waste	kg	3,92E-5	1,67E-5	7,12E-7	5,67E-5	4,79E-6	4,77E-1	MND	MND	MND	MND	MND	MND	MND	0E0	2,43E-8	0E0	1,49E-6	1,6E-9

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	8,5E-4	8,5E-4	0E0	1,89E-3	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	6,26E-7	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	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_2e	1,85E0	1,76E-1	8,68E-3	2,03E0	4,74E-2	4,91E3	MND	MND	MND	MND	MND	MND	MND	0E0	2,25E-4	0E0	8,98E-2	-4,99E-4
Ozone depletion Pot.	kg CFC_{-11}e	5,03E-8	2,96E-8	1,19E-9	8,11E-8	8,42E-9	8,45E-4	MND	MND	MND	MND	MND	MND	MND	0E0	4,25E-11	0E0	2,61E-9	-9,86E-13
Acidification	kg SO_2e	6,06E-3	3,31E-3	3,57E-5	9,41E-3	5,4E-4	7,31E0	MND	MND	MND	MND	MND	MND	MND	0E0	4,62E-7	0E0	9,03E-5	-1,74E-6
Eutrophication	kg PO_4^3e	1,46E-3	3,82E-4	1,65E-5	1,86E-3	6,62E-5	1,29E0	MND	MND	MND	MND	MND	MND	MND	0E0	9,34E-8	0E0	4,42E-3	1,1E-7
POCP (“smog”)	kg C_2H_4e	6,09E-4	8,97E-5	3,31E-6	7,02E-4	1,61E-5	7,52E-1	MND	MND	MND	MND	MND	MND	MND	0E0	2,93E-8	0E0	1,88E-5	-2,04E-7
ADP-elements	kg Sbe	1,79E-5	1,59E-6	1,34E-7	1,97E-5	6,24E-7	7,62E-3	MND	MND	MND	MND	MND	MND	MND	0E0	3,88E-9	0E0	1,14E-7	-3,98E-9
ADP-fossil	MJ	7,08E1	2,4E0	1,69E-1	7,33E1	6,92E-1	6,81E4	MND	MND	MND	MND	MND	MND	MND	0E0	3,53E-3	0E0	2,5E-1	-2,6E-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.

Elma Avdyli, as an authorized verifier acting for EPD Hub Limited
14.10.2022

VERIFIED ISO 14025