ENVIRONMENTAL PRODUCT DECLARATION

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

Wolmanit® CX-8F

Wolman Wood and Fire Protection GmbH

EPD HUB, HUB-0025

Publishing date 22 Apr. 2022, last updated date 22 Apr. 2022, valid until 22 Apr. 2027

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Wolman Wood and Fire Protection GmbH
Address	Dr. Wolman-Strasse 31-33, 76547 Sinzheim, Germany
Contact details	info.wolman@wolman.de
Website	https://www.wolman.de/en/

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, A5 and D
EPD author	Annika Bantle – Master Builders Solutions Deutschland GmbH
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier	Elma Avdyli, 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	Wolmanit® CX-8F
Product reference	Wolmanit® CX-8F
Place of production	Sinzheim, Germany
Period for data	2021

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	1,52
GWP-total, A1-A3 (kgCO2e)	1,48
Secondary material, inputs (%)	4,42
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	8,79
Total water use, A1-A3 (m3e)	0,221

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Wolman Wood and Fire Protection GmbH is part of the MBCC Group. The company is developing, producing and distributing high performance Wood and Fire Protection chemicals for industrial use. The product portfolio comprises Wood Protection solutions for impregnation of outdoor timber, construction timber, engineered wood, as well as temporary protection of sawn timber against discoloring fungi (e.g., mould). Wolman is the inventor of modern wood protection and has been leading the Wood Protection industry for more than a century, extending the life cycle, and thus further increasing the sustainability of timber. The passive Fire Protection product portfolio secures buildings effectively from the impact of fire by significantly extending the time to save lives and assets. The product portfolio comprises materials based on all existing passive fire protection technologies (e.g., intumescence, ablation) and their systems. Wolman Wood and Fire Protection GmbH‘s Headquarter is located in Sinzheim close to Baden-Baden. The geographical scope of the product portfolio is Europe.

PRODUCT DESCRIPTION

Wolmanit® CX-8F is a liquid high-performance wood protection preservative for industrial use for the impregnation of outdoor timber (e.g., deckings, utility poles as well as demanding wood constructions such as timber roller coaster and playgrounds). The product comprises inorganic and organic compounds, to preventively combat wood-destroying fungi, including those causing soft rot, and insects, including termites. As part of the approval process according to BPR (Regulation (EU) 528/2012), Wolmanit® CX-8F has been tested extensively to confirm its efficacy.

Further information can be found at https://www.wolman.de/en/.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	0	-
Minerals	0,15	Germany
Fossil materials	0,5	Germany
Bio-based materials	0	-
Water	0,35	Germany

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	0,1167

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg
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	MND	x	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	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.

Wolmanit® CX-8F is a liquid high-performance wood protection preservative for industrial use based on inorganic and organic compounds, used for the preventive impregnation of outdoor timber (e.g. deckings, utility poles as well as demanding wood constructions such as timber roller coaster and playgrounds) to combat wood-destroying fungi and insects, including termites thus extending the life cycle, and further increasing the sustainability of timber. 50 % of the finished product is packaged and transported by tank lorry. The other 50 % is packaged and distributed in IBC containers transported on wooden pallets.

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 products delivery to the site of use at the wood treatment facility (A4) are not considered.

PRODUCT USE AND MAINTENANCE (B1-B7)

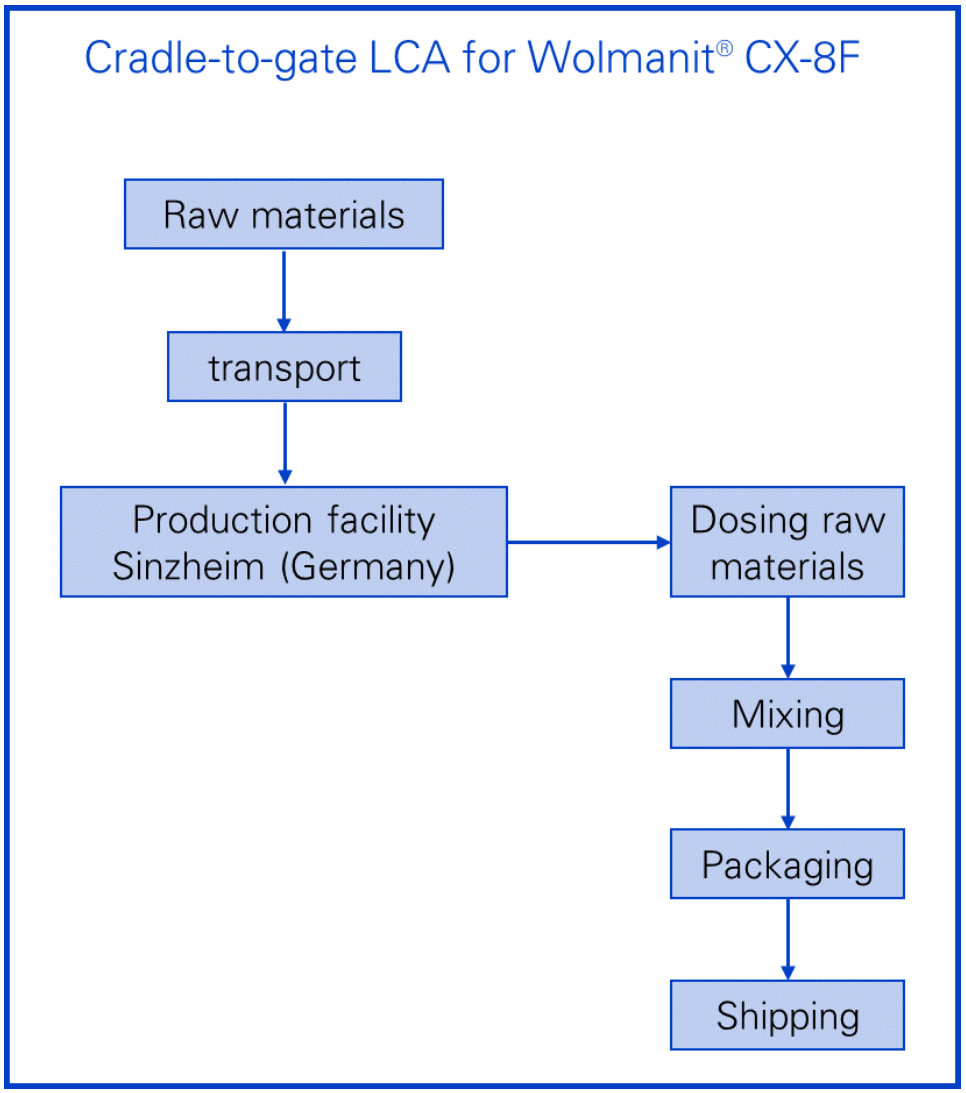
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

The end-of-life modules (C1-C4) are omitted from the EPD as the Wolmanit® CX-8F product is used to impregnate wood and becomes an integral part of the building material. Therefore, the end-of-life is linked to the final disposition of the wooden element.

The benefits and loads beyond the system boundary (D) are included.

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.

No cut-off criteria were applied in the study since all raw materials in the product were taken into consideration. All input/output data reported by the Wolman manufacturing facility were included in the LCI modelling. None of the reported flow data were excluded based on the cut-off criteria. All major raw materials and essential energy flows are included. The 1 % cut-off rule does not apply for hazardous materials and substances: as such, all flows with environmental significance are included. All solid waste emissions, including those that weigh less than 1 % of the sum of the masses of the inputs, are reported in the end-results.

Packaging waste transportation and impacts from reusing (if applicable) are assumed as negligible (cut-off).

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.

The production of Wolmanit® CX-8F does not require any co-products. No allocation was required.

The data quality is considered high based on collection directly from the manufacturer and well below the cut-off rule. Additional background processes such as transportation and electricity consumption have been modelled using the Ecoinvent v.3.6 LCI database.

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.

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

AVERAGES AND VARIABILITY

This EPD is for a specific product Wolmanit® CX-8F where no average data for the production of the product was collected or utilized.

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.

Ernst & Young Accountants LLP: “Life Cycle Assessment of Newly Manufactured and Reconditioned Industrial Packaging”; 2014.

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	1,47E0	1,69E-2	-6,62E-3	1,48E0	MND	4,55E-2	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-4E-3
GWP – fossil	kg CO_2e	1,47E0	1,69E-2	3,54E-2	1,52E0	MND	2,75E-3	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-4,24E-2
GWP – biogenic	kg CO_2e	6,72E-4	1,12E-5	-4,21E-2	-4,14E-2	MND	4,28E-2	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	3,84E-2
GWP – LULUC	kg CO_2e	1,21E-3	5,37E-6	3,75E-5	1,25E-3	MND	2,06E-6	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	3,73E-7
Ozone depletion pot.	kg $CFC_{-11}e$	1,05E-7	3,92E-9	5,89E-9	1,15E-7	MND	2,24E-10	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-4,81E-9
Acidification potential	mol H^+e	5,23E-2	7,02E-5	1,39E-4	5,25E-2	MND	1,01E-5	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-9,13E-5
EP-freshwater[3)]	kg Pe	5,15E-4	1,38E-7	2,84E-6	5,18E-4	MND	7,39E-8	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-4,27E-7
EP-marine	kg Ne	5,85E-3	2,1E-5	4,42E-5	5,91E-3	MND	2,52E-6	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-1,7E-5
EP-terrestrial	mol Ne	4,28E-2	2,32E-4	3,67E-4	4,34E-2	MND	2,81E-5	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-1,86E-4
POCP (“smog”)	kg NMVOCe	1,16E-2	7,36E-5	1,37E-4	1,18E-2	MND	8,69E-6	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-1,06E-4
ADP-minerals & metals	kg Sbe	2,82E-4	3,43E-7	3,14E-7	2,83E-4	MND	3,94E-8	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-7,17E-8
ADP-fossil resources	MJ	3,25E1	2,6E-1	8E-1	3,35E1	MND	3,04E-2	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-8,68E-1
Water use[2)]	m^3e depr.	1,55E0	9,24E-4	1,68E-2	1,57E0	MND	5,89E-4	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-9,73E-3

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	1,51E-7	1,41E-9	2,17E-9	1,55E-7	MND	1,48E-10	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-8,96E-10
Ionizing radiation[5)]	kBq U235e	6,07E-2	1,13E-3	9,81E-3	7,17E-2	MND	1,23E-4	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	1,09E-4
Ecotoxicity (freshwater)	CTUe	5,11E2	1,99E-1	8,43E-1	5,12E2	MND	3,7E-2	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-3,34E-1
Human toxicity, cancer	CTUh	8,81E-9	5,31E-12	1,23E-10	8,94E-9	MND	2,8E-12	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-2,13E-12
Human tox. non-cancer	CTUh	5,34E-7	2,32E-10	2,38E-9	5,36E-7	MND	4,87E-11	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	1,65E-9
SQP	-	5,85E0	3,35E-1	5,26E-2	6,24E0	MND	1,58E-2	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-5,48E-3

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	2,28E0	3,39E-3	1,39E-1	2,42E0	MND	2,26E-3	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-5,33E-4
Renew. PER as material	MJ	0E0	0E0	4,11E-1	4,11E-1	MND	0E0	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	0E0
Total use of renew. PER	MJ	2,28E0	3,39E-3	5,5E-1	2,83E0	MND	2,26E-3	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-5,33E-4
Non-re. PER as energy	MJ	2,84E1	2,6E-1	5,01E-1	2,92E1	MND	3,04E-2	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-5,69E-1
Non-re. PER as material	MJ	4,02E0	0E0	2,99E-1	4,32E0	MND	0E0	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-2,99E-1
Total use of non-re. PER	MJ	3,25E1	2,6E-1	8E-1	3,35E1	MND	3,04E-2	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-8,68E-1
Secondary materials	kg	3,85E-2	0E0	5,66E-3	4,42E-2	MND	0E0	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	1,07E-2
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	MND	0E0	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	MND	0E0	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	0E0
Use of net fresh water	m^3	2,11E-2	5,09E-5	2E-1	2,21E-1	MND	9,56E-6	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-1,54E-4

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	1,91E-1	2,56E-4	3,6E-3	1,95E-1	MND	1,54E-4	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-1,18E-3
Non-hazardous waste	kg	2,64E1	2,48E-2	8,38E-2	2,65E1	MND	6,55E-3	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	1,24E-2
Radioactive waste	kg	5,36E-5	1,78E-6	1,05E-6	5,64E-5	MND	1,34E-7	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	6,14E-8

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	MND	0E0	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	0E0
Materials for recycling	kg	0E0	0E0	0E0	0E0	MND	0E0	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	MND	3,79E-2	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	MND	0E0	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	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	1,41E0	1,67E-2	3,45E-2	1,46E0	MND	2,69E-3	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-4,01E-2
Ozone depletion Pot.	kg $CFC_{-11}e$	9,85E-8	3,12E-9	5,69E-9	1,07E-7	MND	1,93E-10	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-3,62E-9
Acidification	kg SO_2e	4,77E-2	3,41E-5	1,07E-4	4,78E-2	MND	6,61E-6	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-7,59E-5
Eutrophication	kg PO_4^3e	2E-2	6,93E-6	7,96E-5	2,01E-2	MND	6,08E-6	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-1,44E-5
POCP (“smog”)	kg C_2H_4e	1,82E-3	2,19E-6	1,18E-5	1,83E-3	MND	5,04E-7	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-1,24E-5
ADP-elements	kg Sbe	2,82E-4	3,43E-7	3,14E-7	2,83E-4	MND	3,94E-8	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-7,17E-8
ADP-fossil	MJ	3,25E1	2,6E-1	8E-1	3,35E1	MND	3,04E-2	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-8,68E-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_2e	1,42E0	1,67E-2	3,44E-2	1,47E0	MND	2,7E-3	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-4,01E-2
Ozone Depletion	kg $CFC_{-11}e$	1,2E-7	4,15E-9	2,65E-9	1,27E-7	MND	2,52E-10	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-5,05E-9
Acidification	kg SO_2e	4,06E-2	6,11E-5	1,18E-4	4,07E-2	MND	8,79E-6	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-7,66E-5
Eutrophication	kg Ne	7,63E-3	8,59E-6	5,99E-5	7,7E-3	MND	1,19E-6	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-4,66E-6
POCP (“smog”)	kg O_3e	1,7E-1	1,33E-3	1,96E-3	1,73E-1	MND	1,56E-4	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-1,07E-3
ADP-fossil	MJ	4,05E0	3,72E-2	9,52E-2	4,18E0	MND	3,34E-3	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	-1,28E-1

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 ED 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, approved verifier by EPD Hub, 22.04.2022

VERIFIED ISO 14025