

ENVIRONMENTAL PRODUCT DECLARATION

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

FRIALEN Safety Fittings for Electrofusion of PE pipes

Aliaxis Deutschland GmbH



EPD HUB, HUB-1995

Publishing date 22 November 2024, last updated on 22 November 2024, valid until 22 November 2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Aliaxis Deutschland GmbH
Address	Steinzeugstr. 50, D-68229 Mannheim, Germany
Contact details	info.de@aliaxis.com
Website	www.aliaxis.de

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 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Bertel David
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Magaly González Vázquez, 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	FRIALEN Safety Fittings for Electrofusion of PE pipes
Additional labels	-
Product reference	-
Place of production	Mannheim (DE), Okondo (Spain)
Period for data	01/01/2023 - 31/12/2023
Averaging in EPD	No averaging

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m
Declared unit mass	2.234 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	6,09E+00
GWP-total, A1-A3 (kgCO ₂ e)	6,09E+00
Secondary material, inputs (%)	0.54
Secondary material, outputs (%)	24
Total energy use, A1-A3 (kWh)	24
Net freshwater use, A1-A3 (m ³)	0.06

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Aliaxis Deutschland, known as FRIATEC AG until 2019, has been an integral part of the Rhine-Neckar region for 160 years.

With around 550 employees, the Mannheim location is an attractive employer and produces connection technology and fittings for gas and water supply on site and provides an optimized repair portfolio for the aged pipe networks, for daily water and gas supply for all common pipe materials and sizes.

The company has been part of Aliaxis, which relies on the Mannheim location, since 2003.

For 160 years now, we have been striving to offer solutions for water supply and wastewater disposal at the Mannheim-Friedrichsfeld location.

Over the last two decades, we as a company have become part of Aliaxis, an internationally integrated, family-owned group that faces the challenges of today.

Environmentally friendly production and sustainability are important cornerstones of Aliaxis corporate culture today.

PRODUCT DESCRIPTION

For long-lasting, high-performance PE pipe connections.

Electrofusion fittings from FRIATEC, specially developed to securely connect all your polyethylene pipes together. Regardless of whether it is about pressurized water and gas applications or demanding irrigation projects, FRIALEN is the ideal safety technology for long-lasting, high-performance connections. Electric welding is simple and efficient: the FRIALEN fittings are permanently fused tightly using FRIAMAT fusion machines.

The advantages of FRIALEN safety fittings are manifold: a maximum fusion area, energy savings through effective energy use and immediate heat transfer in the welding zone. The position of the open, visible heating coil made of corrosion-resistant wires can be checked visually and ensures the highest quality of the connection during the welding process.

Further information can be found at www.aliaxis.de.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0.5	Rest of the world
Minerals	0	-
Fossil materials	99.5	Rest of the world
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	0.001935

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m
Mass per declared unit	2.234 kg
Functional unit	An average liner meter representative of the use of the product.
Reference service life	100 years

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	Deconstruction/ demolition	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 pipes are made through extrusion. The process starts with feeding raw materials into an extruder where they are heated and melted. This material is then forced through an opening to shape it into a pipe. The pipe undergoes calibration and cooling to reach the desired dimensions. It then moves to a cutting station where it is cut into required lengths. The finished product is then packed for storage and shipment.

Fittings are manufactured through injection molding. The process begins with heating raw material until it melts. The molten material is then injected into a mold, which is shaped to match the specific design of the fitting. After a quick cooling process, the fitting solidifies and is removed from the mold. Any extra material is trimmed off. The finished fitting is then packed, ready for storage and shipment.

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 distance from manufacturing site to the building site corresponds to the recommendation from the NF EN 15804+A2 National complement for French FDES when the exact distance is unknown. The transportation method used is lorry and cargo ship. The packaging waste are taken into account in the installation section (A5).

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

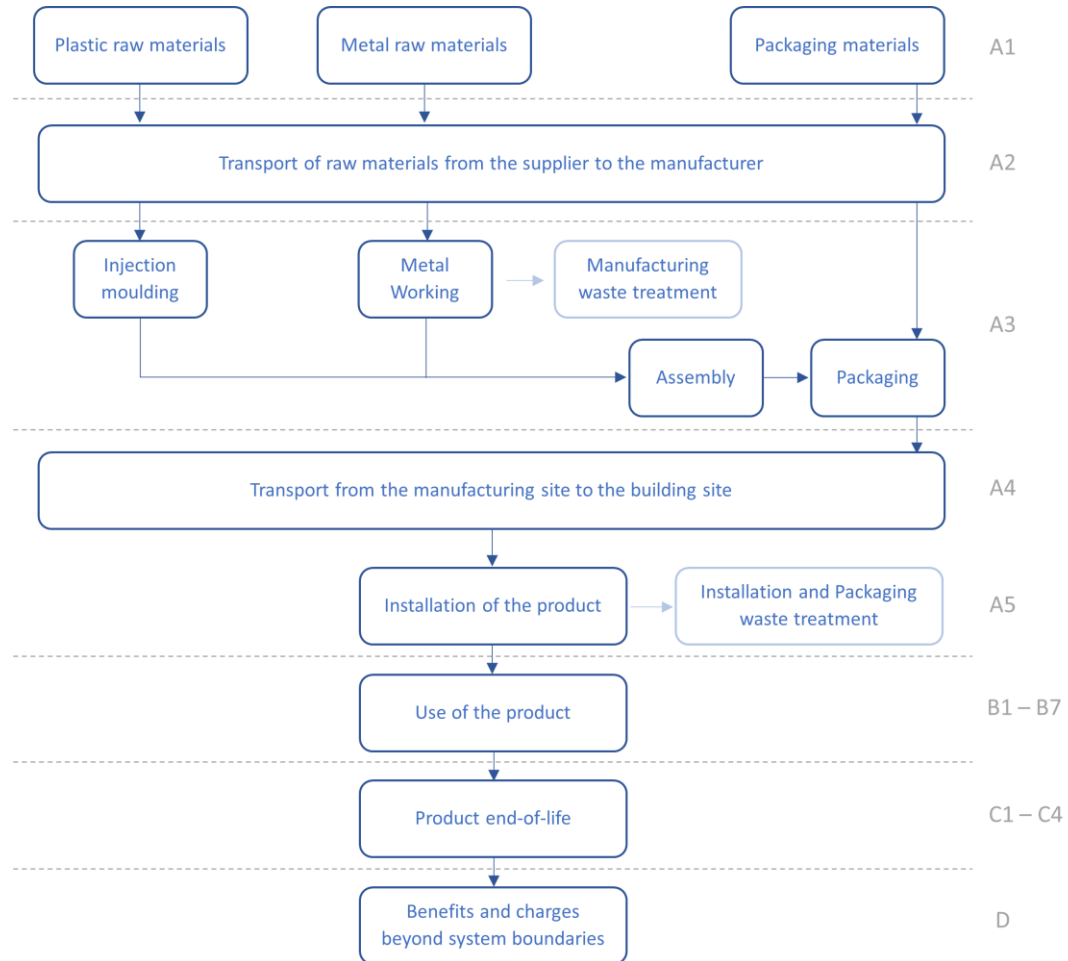
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

We assume the end-of-life product materials are transported by lorry to several facilities: a recycling facility 800 km from the demolition site, an incineration facility 150 km away and a landfill facility 50 km away (C2).

The benefits and loads of recycling are considered in module D. The energy and heat produced by the incineration of polymers and waste packaging materials are also taken into account in module D.

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	No allocation
Packaging material	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable

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. The EPD Generator uses Ecoinvent v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases 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	5,66E+00	0,00E+00	4,36E-01	6,09E+00	6,99E-01	1,04E-02	MND	MND	MND	MND	MND	MND	MND	MNR	5,83E-02	3,30E+00	8,91E-02	-3,53E+00
GWP – fossil	kg CO ₂ e	5,65E+00	0,00E+00	4,40E-01	6,09E+00	6,98E-01	3,35E-03	MND	MND	MND	MND	MND	MND	MND	MNR	5,83E-02	3,29E+00	8,91E-02	-3,55E+00
GWP – biogenic	kg CO ₂ e	0,00E+00	0,00E+00	-7,08E-03	-7,08E-03	0,00E+00	7,08E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	1,67E-02
GWP – LULUC	kg CO ₂ e	3,07E-03	0,00E+00	3,07E-03	6,14E-03	3,01E-04	8,00E-07	MND	MND	MND	MND	MND	MND	MND	MNR	2,15E-05	1,08E-05	6,78E-06	-4,07E-04
Ozone depletion pot.	kg CFC-11e	1,40E-07	0,00E+00	2,68E-08	1,67E-07	1,57E-07	4,46E-11	MND	MND	MND	MND	MND	MND	MND	MNR	1,34E-08	2,67E-09	1,95E-09	-3,75E-08
Acidification potential	mol H ⁺ e	2,56E-02	0,00E+00	3,41E-03	2,90E-02	6,35E-03	3,12E-06	MND	MND	MND	MND	MND	MND	MND	MNR	2,47E-04	4,31E-04	5,54E-05	-2,13E-02
EP-freshwater ²⁾	kg Pe	1,20E-04	0,00E+00	2,30E-05	1,43E-04	5,16E-06	2,24E-08	MND	MND	MND	MND	MND	MND	MND	MNR	4,77E-07	3,73E-07	1,09E-07	-8,63E-05
EP-marine	kg Ne	4,37E-03	0,00E+00	5,19E-04	4,89E-03	1,69E-03	1,89E-06	MND	MND	MND	MND	MND	MND	MND	MNR	7,33E-05	2,03E-04	3,47E-05	-3,18E-03
EP-terrestrial	mol Ne	4,85E-02	0,00E+00	5,71E-03	5,42E-02	1,87E-02	8,23E-06	MND	MND	MND	MND	MND	MND	MND	MNR	8,09E-04	2,20E-03	2,05E-04	-3,56E-02
POCP (“smog”) ³⁾	kg NMVOCe	2,00E-02	0,00E+00	1,54E-03	2,16E-02	5,33E-03	2,63E-06	MND	MND	MND	MND	MND	MND	MND	MNR	2,59E-04	5,31E-04	7,85E-05	-1,13E-02
ADP-minerals & metals ⁴⁾	kg Sbe	1,03E-04	0,00E+00	2,04E-06	1,05E-04	1,52E-06	9,82E-10	MND	MND	MND	MND	MND	MND	MND	MNR	1,37E-07	1,11E-07	2,20E-08	-8,04E-06
ADP-fossil resources	MJ	1,71E+02	0,00E+00	9,70E+00	1,81E+02	1,02E+01	7,43E-03	MND	MND	MND	MND	MND	MND	MND	MNR	8,75E-01	3,08E-01	1,49E-01	-5,75E+01
Water use ⁵⁾	m ³ e depr.	2,27E+00	0,00E+00	1,67E-01	2,43E+00	4,33E-02	2,27E-04	MND	MND	MND	MND	MND	MND	MND	MNR	3,92E-03	9,53E-02	8,95E-04	-6,48E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

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	2,32E-07	0,00E+00	1,00E-08	2,42E-07	7,04E-08	3,21E-11	MND	MND	MND	MND	MND	MND	MND	MNR	6,71E-09	1,89E-09	1,10E-09	-3,27E-07
Ionizing radiation ⁶⁾	kBq 11235e	1,83E-01	0,00E+00	2,74E-01	4,56E-01	4,83E-02	6,86E-05	MND	MND	MND	MND	MND	MND	MND	MNR	4,17E-03	6,00E-04	7,22E-04	-1,06E-01
Ecotoxicity (freshwater)	CTUe	8,79E+01	0,00E+00	7,14E+00	9,50E+01	8,77E+00	1,37E-02	MND	MND	MND	MND	MND	MND	MND	MNR	7,87E-01	7,99E-01	1,62E-01	-8,93E+01
Human toxicity, cancer	CTUh	2,55E-09	0,00E+00	2,42E-10	2,79E-09	2,64E-10	2,91E-13	MND	MND	MND	MND	MND	MND	MND	MNR	1,93E-11	1,17E-10	4,90E-12	-9,60E-10
Human tox. non-cancer	CTUh	7,88E-08	0,00E+00	5,91E-09	8,47E-08	8,35E-09	1,32E-11	MND	MND	MND	MND	MND	MND	MND	MNR	7,79E-10	4,46E-09	9,51E-11	-3,08E-08
SQP ⁷⁾	-	8,99E+00	0,00E+00	1,53E+00	1,05E+01	1,02E+01	3,60E-03	MND	MND	MND	MND	MND	MND	MND	MNR	1,01E+00	9,57E-02	3,59E-01	-1,19E+01

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

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	2,52E+00	0,00E+00	2,11E+00	4,63E+00	1,08E-01	6,30E-04	MND	MND	MND	MND	MND	MND	MND	MNR	9,86E-03	6,92E-03	2,78E-03	-4,44E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	6,20E-02	6,20E-02	0,00E+00	-6,20E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	4,97E-02
Total use of renew. PER	MJ	2,52E+00	0,00E+00	2,17E+00	4,69E+00	1,08E-01	-6,13E-02	MND	MND	MND	MND	MND	MND	MND	MNR	9,86E-03	6,92E-03	2,78E-03	-4,39E+00
Non-re. PER as energy	MJ	7,22E+01	0,00E+00	9,63E+00	8,18E+01	1,02E+01	7,43E-03	MND	MND	MND	MND	MND	MND	MND	MNR	8,75E-01	3,08E-01	1,49E-01	-3,50E+01
Non-re. PER as material	MJ	9,92E+01	0,00E+00	6,47E-02	9,92E+01	0,00E+00	-6,47E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	-4,46E+01	-5,45E+01	-2,25E+01
Total use of non-re. PER	MJ	1,71E+02	0,00E+00	9,70E+00	1,81E+02	1,02E+01	-5,73E-02	MND	MND	MND	MND	MND	MND	MND	MNR	8,75E-01	-4,43E+01	-5,44E+01	-5,75E+01
Secondary materials	kg	1,22E-02	0,00E+00	6,18E-03	1,83E-02	3,10E-03	1,52E-06	MND	MND	MND	MND	MND	MND	MND	MNR	2,43E-04	4,80E-04	5,31E-05	5,59E-01
Renew. secondary fuels	MJ	1,12E-04	0,00E+00	3,52E-04	4,64E-04	2,62E-05	1,74E-08	MND	MND	MND	MND	MND	MND	MND	MNR	2,45E-06	2,28E-06	2,04E-06	-1,27E-03
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	5,77E-02	0,00E+00	4,04E-03	6,17E-02	1,22E-03	4,47E-06	MND	MND	MND	MND	MND	MND	MND	MNR	1,13E-04	3,02E-04	1,60E-04	-1,61E-02

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	2,48E-01	0,00E+00	4,96E-02	2,98E-01	1,36E-02	3,47E-05	MND	MND	MND	MND	MND	MND	MND	MNR	1,16E-03	0,00E+00	0,00E+00	-2,54E-01
Non-hazardous waste	kg	5,09E+00	0,00E+00	9,59E-01	6,05E+00	2,06E-01	4,11E-03	MND	MND	MND	MND	MND	MND	MND	MNR	1,91E-02	1,09E+00	6,10E-01	-3,40E+00
Radioactive waste	kg	8,06E-05	0,00E+00	7,02E-05	1,51E-04	6,88E-05	2,55E-08	MND	MND	MND	MND	MND	MND	MND	MNR	5,85E-06	0,00E+00	0,00E+00	-3,95E-05

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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	2,23E-01	2,23E-01	0,00E+00	7,20E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,07E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,70E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,76E+01	0,00E+00	0,00E+00

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	5,39E+00	0,00E+00	4,37E-01	5,83E+00	6,92E-01	4,32E-03	MND	MND	MND	MND	MND	MND	MND	MNR	5,77E-02	3,29E+00	7,27E-02	-3,39E+00
Ozone depletion Pot.	kg CFC ₁₁ e	1,17E-07	0,00E+00	2,26E-08	1,40E-07	1,24E-07	3,63E-11	MND	MND	MND	MND	MND	MND	MND	MNR	1,06E-08	2,33E-09	1,55E-09	-3,15E-08
Acidification	kg SO ₂ e	2,13E-02	0,00E+00	2,87E-03	2,42E-02	5,03E-03	2,50E-06	MND	MND	MND	MND	MND	MND	MND	MNR	1,92E-04	3,01E-04	4,21E-05	-1,80E-02
Eutrophication	kg PO ₄ ³ e	5,57E-03	0,00E+00	8,79E-04	6,45E-03	7,81E-04	9,12E-06	MND	MND	MND	MND	MND	MND	MND	MNR	4,37E-05	2,65E-04	3,35E-03	-3,44E-03
POCP ("smog")	kg C ₂ H ₄ e	1,68E-03	0,00E+00	1,08E-04	1,79E-03	1,55E-04	3,31E-07	MND	MND	MND	MND	MND	MND	MND	MNR	7,48E-06	4,73E-06	1,32E-05	-9,68E-04
ADP-elements	kg Sbe	1,02E-04	0,00E+00	2,04E-06	1,04E-04	1,48E-06	9,43E-10	MND	MND	MND	MND	MND	MND	MND	MNR	1,32E-07	9,45E-08	2,13E-08	-7,98E-06
ADP-fossil	MJ	1,71E+02	0,00E+00	9,70E+00	1,81E+02	1,02E+01	7,43E-03	MND	MND	MND	MND	MND	MND	MND	MNR	8,75E-01	3,08E-01	1,49E-01	-5,75E+01

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	1,02E-04	0,00E+00	2,04E-06	1,04E-04	1,48E-06	9,43E-10	MND	MND	MND	MND	MND	MND	MND	MNR	1,32E-07	9,45E-08	2,13E-08	-7,98E-06
Hazardous waste disposed	kg	2,48E-01	0,00E+00	4,96E-02	2,98E-01	1,36E-02	3,47E-05	MND	MND	MND	MND	MND	MND	MND	MNR	1,16E-03	0,00E+00	0,00E+00	-2,54E-01
Non-haz. waste disposed	kg	5,09E+00	0,00E+00	9,59E-01	6,05E+00	2,06E-01	4,11E-03	MND	MND	MND	MND	MND	MND	MND	MNR	1,91E-02	1,09E+00	6,10E-01	-3,40E+00
Air pollution	m ³	1,06E+03	0,00E+00	2,27E+02	1,28E+03	1,26E+02	2,50E-01	MND	MND	MND	MND	MND	MND	MND	MNR	1,05E+01	1,69E+01	1,67E+00	-1,79E+03
Water pollution	m ³	1,85E+01	0,00E+00	3,88E+00	2,24E+01	6,98E-01	1,29E-02	MND	MND	MND	MND	MND	MND	MND	MNR	6,16E-02	2,36E+00	3,90E+00	-5,44E+00

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.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

22.11.2024

