ENVIRONMENTAL PRODUCT DECLARATION

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

Phonoblack Soil & Waste System

Redi S.p.A. - Aliaxis

EPD HUB, HUB-2853

Published on 14.03.2025, last updated on 14.03.2025, valid until 13.03.2030

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Redi S.p.A. - Aliaxis
Address	Via Madonna dei prati 5/A - ZOLA PREDOSA (BO) - ITALY
Contact details	infotecnico.redi@aliaxis.com
Website	www.aliaxis.it

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 EN 16904 Product Category Rules (PCR) for plastics piping systems inside buildings
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	Lemonnier Elisa
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Lucas Rodriguez, 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	Phonoblack Soil & Waste System
Additional labels	-
Product reference	-
Place of production	Plant in Zola Predosa, Italy
Period for data	01/01/2024 - 31/12/2024
Averaging in EPD	No averaging

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m
Declared unit mass	1.788 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	4.51E+00
GWP-total, A1-A3 ($kgCO_2e$)	3.90E+00
Secondary material, inputs (%)	0.79
Secondary material, outputs (%)	31.5
Total energy use, A1-A3 (kWh)	21.6
Net freshwater use, A1-A3 (m^3)	0.07

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Aliaxis is a global leader in advanced plastic piping systems for industrial, building, infrastructure and agriculture applications. For each of these segments, we offer a comprehensive range of high quality products and solutions that meet our customers' most demanding needs across the globe.

Aliaxis, with a global workforce of about 15,500 employees, is active through leading local brands and operates in over 40 countries, combining local solutions with global innovation and operational excellence.

Aliaxis supplies installers and technicians worldwide with products and solutions to get projects up and running in an easy and reliable way. We aim to add value for the end-users: people in their homes, farmers, industries, and governments. Whatever the challenges in terms of size, volume or height, whatever the constraints in industrial, infrastructure projects or with irrigation requirements on agricultural land, we always strive to offer the appropriate products and solutions.

REDI (Aliaxis Italy Building division) has been producing plastic fittings for over 50 years, becoming a highly advanced and successful company. The reason for this success is our constant effort in offering the most comprehensive service to our clients aiming at establishing long lasting and profitable business relationships.

REDI is certified in accordance with quality standards:
– UNI EN ISO 9001
– UNI EN ISO 14001
– UNI ISO 45001

PRODUCT DESCRIPTION

PHONOBLACK is a push-fit acoustic S&W range of pipes and fittings, made of black PVC-U raw material mineral additives strengthened compound, fire resistant and provided with specific anti-vibration collars to guarantee excellent soundproof performances. Phonoblack is designed and developed to satisfy low levels of noise emissions of waste water systems according to the different in force norm and standards.

PVC is a sustainable and low environmental footprint material, it is lead free and completely recyclable; it allows the installation of both push-fit and solvent welded joints. It allows an excellent quick fit and give flexibility to the installer; it is suitable to be easily used to install soundproof acoustic system both for new and renovation building applications, also combined on the already installed different type of waste water systems; excellent chemical resistance to several agents like acids, alkalies, salts and organic compound solved into the water.

Color: RAL 9005 - Black
Operation Temperature Range: 70 °C is the MAX temperature of waste water in permanent conditions. For discontinuous drainage applications as common household appliances discharge, instant peak of 95 °C are allowed. Phonoblack is certified as B s1 d0 Fire Reaction Euroclass applied to plastic material made soil and waste drainage systems according to the EN 13501 standard. Pipe and Fittings available starting from Ø40 up to Ø200. Both Single and Double Socket Pipes available in 0.5, 1, 2 and 3 m length. Acoustic performance certified by the Stuttgart Fraunhofer Physical Constructions Institute according to EN 14366 standard.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	0	-
Fossil materials	100	Europe LATAM
Bio-based materials	0	-

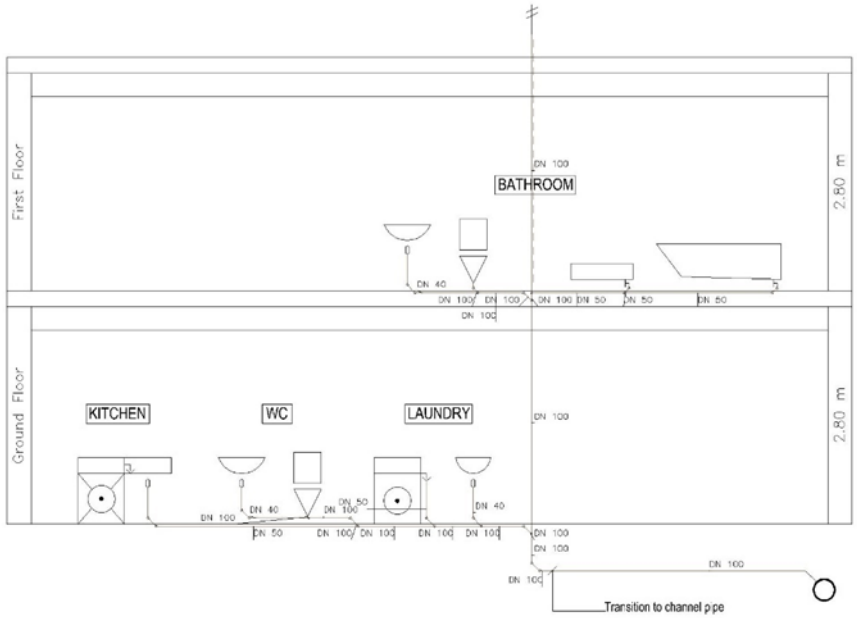
BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.0274

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m
Mass per declared unit	1.788 kg
Functional unit	The functional unit represents 100 m² of a typical detached house, incorporating a bathroom, a separate WC, one kitchen and laundry room.
Reference service life	-



Functional unit representation

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 pipes are made through extrusion. The process starts with feeding raw materials into the extruder where they are heated and melted. The extruder feeds the material into a die head. Then the materials are combined to create the pipe structure. Once the bar is sheared off, the extruded 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 pipe sections are passed to the socketing machines that create the sockets at the pipe ends through plastic deformation. Ring seals are inserted into these sockets. 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. Once injected, the molten material quickly cools within the mold. As the material solidifies, it takes on the desired shape, including threads, grooves, and other essential features. After cooling, the mold opens, revealing the newly formed fitting. Ring seals are then inserted into the sockets. Once inspected and approved, the finished fitting is packed, ready for storage and shipment.

Our manufacturing process allows to reintegrate manufacturing losses with the use of re-granulated raw material. The amount of reintegrated material can represent up to 20% of the composition of the Phonoblack soil & waste system fittings.

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 production to the building site corresponds to an average transport distance based on Aliaxis sales. The transportation method used is lorry. The packaging waste are taken into account in the installation section (A5).

PRODUCT USE AND MAINTENANCE (B1-B7)

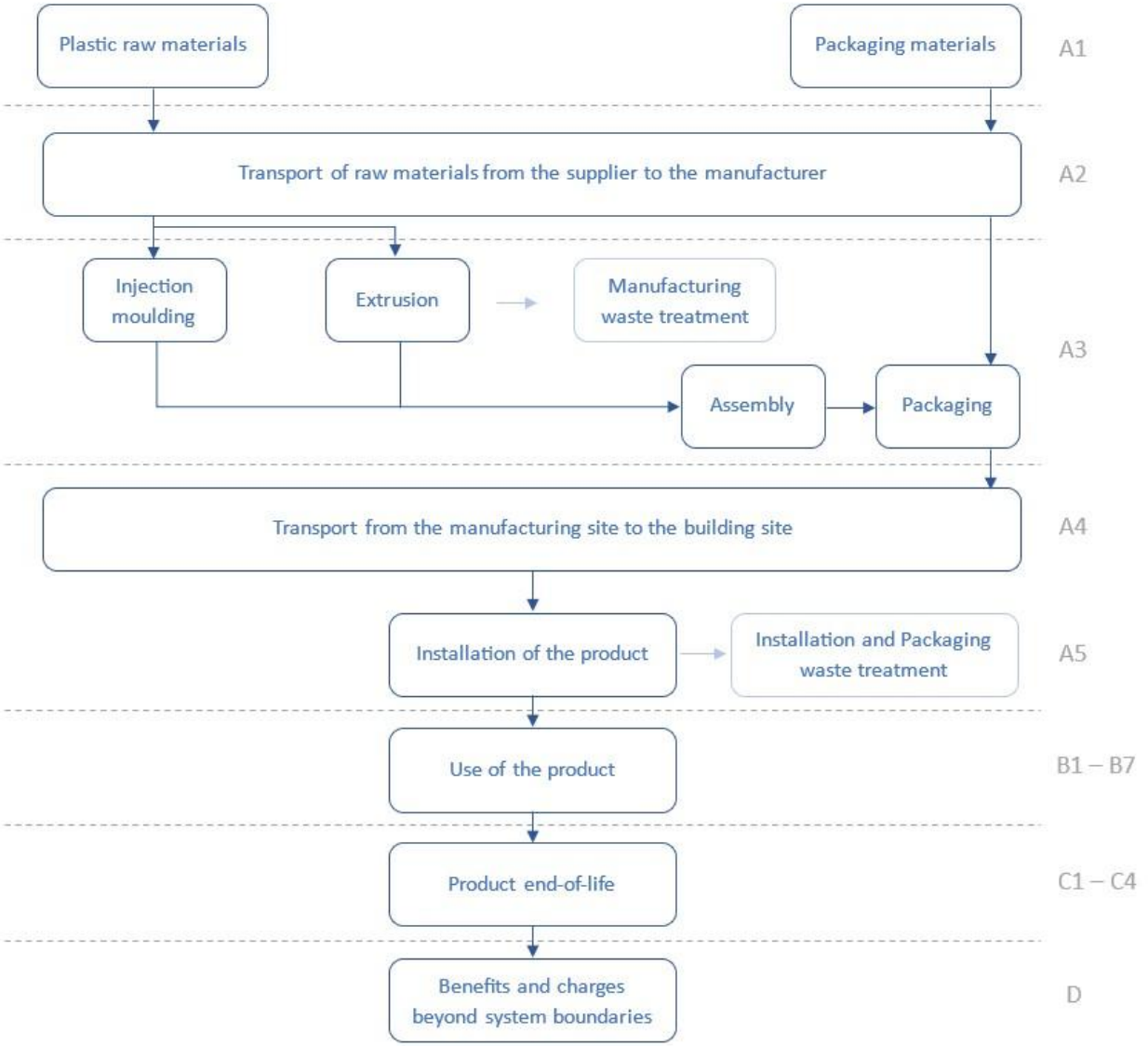
This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

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 PVC-U is collected from the demolition site: 30.6 % is sent for incineration, 32.1 % is recycled and 37.3 % is landfilled. The EPDM is collected from the demolition site: 45 % is sent for incineration and 55 % is landfilled (C3 - C4).

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

FLOW DIAGRAM



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	Not applicable
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_2e	3,37E+00	1,28E-01	4,04E-01	3,90E+00	2,24E-01	7,40E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,30E-02	1,19E+00	5,60E-02	-7,14E+00
GWP – fossil	kg CO_2e	3,36E+00	1,28E-01	1,02E+00	4,51E+00	2,24E-01	1,21E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,30E-02	1,19E+00	5,60E-02	-3,02E+00
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-6,19E-01	-6,19E-01	0,00E+00	6,19E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,12E+00
GWP – LULUC	kg CO_2e	2,62E-03	6,06E-05	1,25E-03	3,93E-03	8,25E-05	1,36E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,96E-05	1,58E-04	7,67E-06	1,28E-03
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1,86E-06	2,81E-08	1,18E-07	2,00E-06	5,14E-08	4,51E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,22E-08	3,60E-08	2,16E-09	-7,69E-07
Acidification potential	mol H^+e	1,49E-02	1,60E-03	4,94E-03	2,15E-02	9,47E-04	1,26E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,25E-04	8,55E-04	6,34E-05	-1,87E-02
EP-freshwater[2)]	kg Pe	1,34E-04	8,71E-07	3,36E-05	1,68E-04	1,83E-06	3,24E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,34E-07	3,91E-06	2,24E-07	-9,60E-05
EP-marine	kg Ne	2,53E-03	4,13E-04	1,03E-03	3,97E-03	2,81E-04	6,95E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,67E-05	2,11E-04	6,06E-05	-2,63E-03
EP-terrestrial	mol Ne	2,61E-02	4,58E-03	1,03E-02	4,10E-02	3,11E-03	4,46E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,36E-04	2,29E-03	2,29E-04	-2,83E-02
POCP ("smog")[3)]	kg NMVOCe	9,52E-03	1,26E-03	3,13E-03	1,39E-02	9,93E-04	1,37E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,36E-04	6,36E-04	8,18E-05	-8,76E-03
ADP-minerals & metals[4)]	kg Sbe	7,18E-05	2,63E-07	3,35E-06	7,54E-05	5,24E-07	1,10E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,24E-07	1,71E-06	2,50E-08	-2,43E-05
ADP-fossil resources	MJ	8,61E+01	1,82E+00	1,73E+01	1,05E+02	3,36E+00	2,88E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,96E-01	1,75E+00	1,66E-01	-4,80E+01
Water use[5)]	m^3e depr.	2,44E+00	7,45E-03	5,30E-01	2,98E+00	1,50E-02	1,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,56E-03	1,09E-01	1,02E-03	-1,09E+00

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	1,24E-07	1,15E-08	3,99E-08	1,75E-07	2,58E-08	2,00E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,11E-09	6,80E-09	1,23E-09	-2,70E-07
Ionizing radiation[6)]	kBq U235e	5,21E-01	8,60E-03	1,05E-01	6,34E-01	1,60E-02	1,48E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,79E-03	1,20E-02	8,11E-04	-2,10E-01
Ecotoxicity (freshwater)	CTUe	6,06E+01	1,51E+00	1,32E+01	7,54E+01	3,02E+00	3,11E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,16E-01	6,37E+01	2,62E+00	-6,71E+01
Human toxicity, cancer	CTUh	2,58E-09	5,24E-11	8,66E-10	3,50E-09	7,42E-11	2,28E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,76E-11	2,27E-10	6,24E-12	-1,51E-09
Human tox. non-cancer	CTUh	7,71E-08	1,39E-09	1,01E-08	8,86E-08	2,99E-09	1,36E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,09E-10	1,78E-08	5,20E-10	-4,15E-08
SQP[7)]	-	8,64E+00	1,62E+00	4,45E+01	5,48E+01	3,87E+00	3,31E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,18E-01	1,00E+00	3,98E-01	-1,55E+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	4,17E+00	1,85E-02	6,02E+00	1,02E+01	3,78E-02	1,02E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,97E-03	1,62E-01	3,22E-03	-4,36E+00
Renew. PER as material	MJ	3,95E-01	0,00E+00	5,40E+00	5,80E+00	0,00E+00	-5,40E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-2,48E-01	-1,47E-01	3,60E+01
Total use of renew. PER	MJ	4,56E+00	1,85E-02	1,14E+01	1,60E+01	3,78E-02	-5,39E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,97E-03	-8,61E-02	-1,44E-01	3,16E+01
Non-re. PER as energy	MJ	5,06E+01	1,82E+00	1,49E+01	6,73E+01	3,36E+00	2,88E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,97E-01	1,75E+00	1,66E-01	-3,50E+01
Non-re. PER as material	MJ	3,55E+01	0,00E+00	2,40E+00	3,79E+01	0,00E+00	-2,40E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-2,21E+01	-1,34E+01	2,65E+01
Total use of non-re. PER	MJ	8,61E+01	1,82E+00	1,73E+01	1,05E+02	3,36E+00	-2,12E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,97E-01	-2,03E+01	-1,33E+01	-8,47E+00
Secondary materials	kg	1,41E-02	5,91E-04	1,18E-01	1,33E-01	9,33E-04	1,30E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,21E-04	5,71E-04	5,97E-05	6,80E-01
Renew. secondary fuels	MJ	6,76E-04	4,36E-06	1,46E-01	1,47E-01	9,41E-06	8,95E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,23E-06	1,80E-04	2,27E-06	-4,62E-02
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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	5,97E-02	2,05E-04	1,50E-02	7,49E-02	4,35E-04	2,20E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,03E-04	5,02E-02	1,78E-04	-2,85E-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	2,08E-01	2,44E-03	6,64E-02	2,76E-01	4,45E-03	6,87E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,06E-03	1,57E-01	0,00E+00	-1,65E-01
Non-hazardous waste	kg	5,24E+00	3,47E-02	1,36E+00	6,64E+00	7,32E-02	3,75E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,74E-02	4,00E-01	6,71E-01	-3,82E+00
Radioactive waste	kg	1,78E-04	1,24E-05	3,97E-05	2,30E-04	2,25E-05	1,12E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,33E-06	4,59E-06	0,00E+00	-7,97E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,79E-01	1,79E-01	0,00E+00	4,48E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,12E+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	0,00E+00	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	1,51E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	4,21E+00	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_2e	3,25E+00	1,26E-01	1,01E+00	4,39E+00	2,21E-01	1,50E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,25E-02	1,19E+00	5,82E-02	-2,93E+00
Ozone depletion Pot.	kg CFC_{-11}e	1,85E-06	2,23E-08	1,01E-07	1,97E-06	4,07E-08	3,79E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,66E-09	3,33E-08	1,71E-09	-7,53E-07
Acidification	kg SO_2e	1,25E-02	1,27E-03	4,02E-03	1,78E-02	7,36E-04	9,62E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,74E-04	6,78E-04	4,84E-05	-1,59E-02
Eutrophication	kg PO_4^3e	7,26E-03	1,76E-04	1,78E-03	9,22E-03	1,68E-04	6,93E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,97E-05	3,31E-04	2,11E-03	-4,31E-03
POCP (“smog”)	kg C_2H_4e	7,86E-04	3,66E-05	2,60E-04	1,08E-03	2,87E-05	1,15E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,81E-06	4,47E-05	1,13E-05	-8,37E-04
ADP-elements	kg Sbe	6,25E-05	2,55E-07	3,21E-06	6,60E-05	5,08E-07	8,77E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,20E-07	1,22E-06	2,41E-08	-2,09E-05
ADP-fossil	MJ	8,61E+01	1,82E+00	1,73E+01	1,05E+02	3,36E+00	2,88E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,96E-01	1,75E+00	1,66E-01	-4,80E+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	6,25E-05	2,55E-07	3,21E-06	6,60E-05	5,08E-07	8,77E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,20E-07	1,22E-06	2,41E-08	-2,09E-05
Hazardous waste disposed	kg	2,08E-01	2,44E-03	6,64E-02	2,76E-01	4,45E-03	6,87E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,06E-03	1,57E-01	0,00E+00	-1,65E-01
Non-haz. waste disposed	kg	5,24E+00	3,47E-02	1,36E+00	6,64E+00	7,32E-02	3,75E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,74E-02	4,00E-01	6,71E-01	-3,82E+00
Air pollution	m^3	6,06E+02	2,32E+01	1,92E+02	8,21E+02	4,01E+01	5,24E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,51E+00	5,01E+01	1,92E+00	-1,01E+03
Water pollution	m^3	2,40E+01	1,22E-01	4,95E+00	2,90E+01	2,37E-01	7,41E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,61E-02	1,53E+00	3,35E+00	-1,23E+01

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	3,37E+00	1,28E-01	1,02E+00	4,52E+00	2,24E-01	1,21E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,30E-02	1,19E+00	5,60E-02	-3,02E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH4 fossil, CH4 biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.

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.

Lucas Rodriguez, an authorized verifier acting for EPD Hub Limited.
14.03.2025