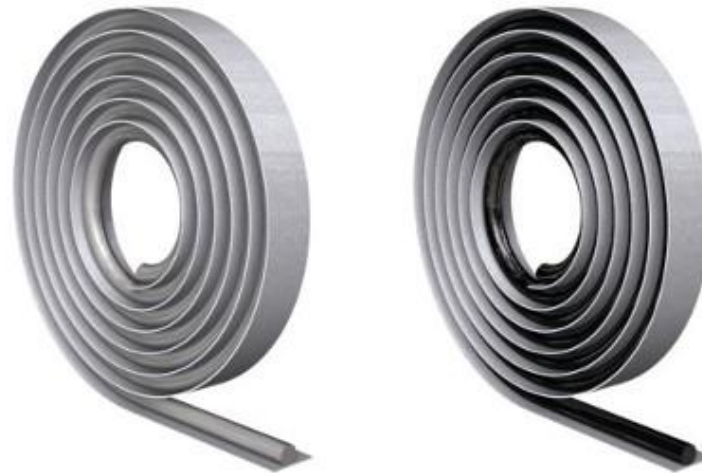


ENVIRONMENTAL PRODUCT DECLARATION

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

DAFA Butyl 303

DAFA A/S



EPD HUB, HUB-2304

Publishing date 9 November 2024, last updated on 9 November 2024, valid until 9 November 2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	DAFA Building Solutions A/S
Address	Holmstrupgårdvej 1, Århus, 8220 Denmark
Contact details	dbs@dafa-group.com
Website	https://dafa-build.com/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 1.1, 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	Ksenija Ruby
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	DAFA Butyl 303
Additional labels	
Product reference	233000006, 233000008, 233000010, 233000310
Place of production	Denmark, Århus
Period for data	2023-01-01 to 2023-12-31
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	N. A.

ENVIRONMENTAL DATA SUMMARY

Declared unit	1m ³
Declared unit mass	0.00168 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	4,12E-01
GWP-total, A1-A3 (kgCO ₂ e)	-3,33E-01
Secondary material, inputs (%)	0.97
Secondary material, outputs (%)	99
Total energy use, A1-A3 (kWh)	2,99
Net freshwater use, A1-A3 (m ³)	0

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

DAFA Building Solutions is a dedicated partner for everyone in the industry, including dealers, craftsmen, designers, and builders. We continuously strive to enhance our expertise, which is an integral part of our collaborative approach. From providing informed recommendations on solution selection to offering installation guidance on-site, we are committed to supporting our partners every step of the way.

Our foundation is built on years of theoretical and practical experience, combined with the latest advancements in construction knowledge. This means that DAFA Building Solutions delivers more than just high-quality products. Specifically, we offer:

- Comprehensive and detailed product information
- Solutions focused on sustainable construction practices
- Design advice is available through our website and personalized consultations
- Clear design instructions, including architectural descriptions, construction details, methods, and material selection
- Training opportunities through on-site seminars, workshops, and design studios
- Attractive warranty schemes, ensuring our products are tested, documented, and backed by reliable guarantees

PRODUCT DESCRIPTION

Butyl tape is typically used as an alternative to sealant, as the butyl rubber does not flow out when compressed. Butyl tape is a seal between exterior wall sheets that will not be separated again. The tape should be compressed about 30%.

Butyl is a flexible sealing solution made of soft and adhesive rubber. The material can absorb movements, has extremely strong adhesion, and is highly durable.

Material

DAFA butyl tape is a soft adhesive butyl rubber.

Further information can be found at <https://dafa-build.com/en/>.

PRODUCT RAW MATERIAL MAIN COMPOSITION

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

BIOGENIC CARBON CONTENT

The product's biogenic carbon content at the factory gate

Biogenic carbon content in the product, kg C	0,000002493
Biogenic carbon content in packaging, kg C	0,20345

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m ³
Mass per declared unit	0.00168 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	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.

Manufacturing: The production facility is located in Aarhus, Denmark. The tape is made from butyl and silicone paper, which prevents it from sticking to itself. The raw materials are transported to the site by lorry, covering a distance of 1,391 km. There are no losses during transport.

Packaging: The tape is wound onto a cardboard core and packed into dedicated cardboard boxes. These boxes are placed on reusable pallets, which are wrapped in PE plastic film. All packaging materials, including the pallets, are recyclable or reusable.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts related to the delivery of the final product to the construction site (A4) encompass direct fuel exhaust emissions, environmental impacts from fuel production, and emissions associated with related infrastructure.

The transportation distance is determined based on the Product Category Rules (PCR). On average, the distance from storage to the retailer is 105 km, with lorries assumed as the mode of transport. The vehicle is considered to operate at full load capacity (utilization volume factor of 1), although the actual load may vary. However, since transportation emissions have a minimal impact on the overall results, this variation is deemed negligible. Empty return trips are not included, as it is assumed that the transport company uses these trips to serve other clients (empty returns are accounted for in the ecoinvent database). There are no losses during transportation, as the product is securely packaged.

Environmental impacts from installation into the building include the generation of waste packaging materials and the release of biogenic carbon dioxide from wood pallets.

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.

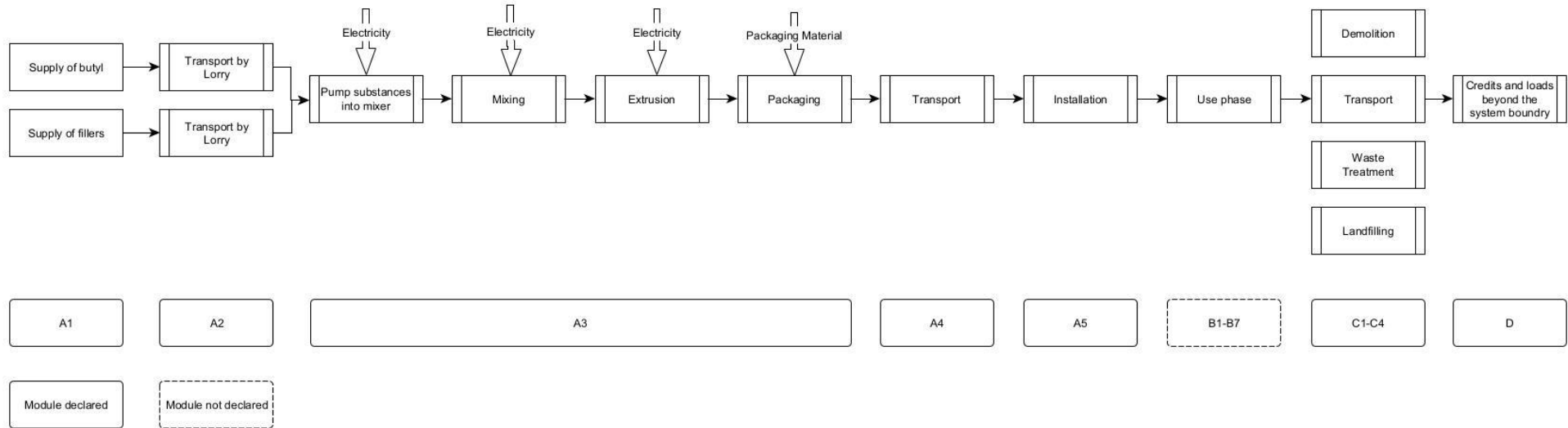
PRODUCT END OF LIFE (C1-C4, D)

For C1, it is assumed that the product can be manually uninstalled using hand-cutting tools. Each input material has a defined waste scenario, with 100% of the materials modeled for incineration, taking into account relevant loads and benefits. The estimated transportation distance to the treatment facility is 50 km, using a lorry for transport (C2).

In Module C3, we account for the energy and resources involved in sorting and treating waste streams for recycling and incineration, achieving an energy recovery efficiency of over 60%. The energy recovered contributes to 76.5% of district heating and 13.5% of electricity generation. Module C4 covers waste that is incinerated without energy recovery or sent to landfill.

Given the potential for material and energy recovery from both the product and its packaging, the energy generated from incineration is used to offset electricity and heat production (Module D). The benefits and loads associated with incineration are included in Module D, assuming that all end-of-life materials are sent to the nearest facilities.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes that are stated as 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 materials and energy consumption. All inputs and outputs of the unit processes, for which data is available, 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	Allocated by mass or volume
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
Variation in GWP-fossil for A1-A3	N. A.

This EPD is product and factory-specific and does not contain average calculations.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using the 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	8,09E-03	1,70E-01	-5,10E-01	-3,33E-01	9,79E-03	7,61E-01	MND	MND	MND	MND	MND	MND	MND	MNR	7,81E-06	4,00E-03	0,00E+00	-1,70E+00
GWP – fossil	kg CO ₂ e	8,09E-03	1,69E-01	2,35E-01	4,12E-01	9,79E-03	1,47E-02	MND	MND	MND	MND	MND	MND	MND	MNR	7,80E-06	3,99E-03	0,00E+00	-7,21E-01
GWP – biogenic	kg CO ₂ e	-9,14E-06	0,00E+00	-7,46E-01	-7,46E-01	0,00E+00	7,46E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	9,14E-06	0,00E+00	-9,80E-01
GWP – LULUC	kg CO ₂ e	8,57E-06	6,36E-05	1,57E-03	1,64E-03	3,91E-06	7,89E-06	MND	MND	MND	MND	MND	MND	MND	MNR	2,88E-09	4,94E-08	0,00E+00	-3,60E-04
Ozone depletion pot.	kg CFC ₋₁₁ e	1,08E-09	3,90E-08	3,07E-08	7,09E-08	2,27E-09	1,61E-09	MND	MND	MND	MND	MND	MND	MND	MNR	1,80E-12	1,03E-11	0,00E+00	-3,59E-08
Acidification potential	mol H ⁺ e	3,11E-05	7,09E-04	1,29E-03	2,03E-03	2,78E-05	9,55E-05	MND	MND	MND	MND	MND	MND	MND	MNR	3,30E-08	1,16E-06	0,00E+00	-5,50E-03
EP-freshwater ²⁾	kg Pe	1,71E-07	1,33E-06	1,73E-05	1,88E-05	6,99E-08	2,50E-07	MND	MND	MND	MND	MND	MND	MND	MNR	6,39E-11	2,57E-09	0,00E+00	-3,45E-05
EP-marine	kg Ne	5,59E-06	2,11E-04	6,01E-04	8,18E-04	5,55E-06	3,70E-05	MND	MND	MND	MND	MND	MND	MND	MNR	9,82E-09	4,56E-07	0,00E+00	-6,62E-04
EP-terrestrial	mol Ne	6,56E-05	2,33E-03	4,02E-03	6,42E-03	6,16E-05	3,89E-04	MND	MND	MND	MND	MND	MND	MND	MNR	1,08E-07	4,74E-06	0,00E+00	-7,89E-03
POCP (“smog”) ³⁾	kg NMVOCe	2,10E-05	7,36E-04	1,06E-03	1,82E-03	2,37E-05	1,04E-04	MND	MND	MND	MND	MND	MND	MND	MNR	3,47E-08	1,16E-06	0,00E+00	-2,13E-03
ADP-minerals & metals ⁴⁾	kg Sbe	4,11E-08	4,53E-07	1,66E-06	2,16E-06	3,54E-08	1,03E-07	MND	MND	MND	MND	MND	MND	MND	MNR	1,83E-11	3,88E-10	0,00E+00	-6,92E-07
ADP-fossil resources	MJ	2,30E-01	2,54E+00	3,69E+00	6,46E+00	1,46E-01	1,52E-01	MND	MND	MND	MND	MND	MND	MND	MNR	1,17E-04	1,07E-03	0,00E+00	-7,40E+00
Water use ⁵⁾	m ³ e depr.	1,83E-03	1,15E-02	1,68E-01	1,81E-01	6,82E-04	2,59E-02	MND	MND	MND	MND	MND	MND	MND	MNR	5,24E-07	1,62E-04	0,00E+00	-1,28E-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	2,50E-10	1,82E-08	2,04E-08	3,88E-08	7,89E-10	2,78E-09	MND	MND	MND	MND	MND	MND	MND	MNR	8,99E-13	6,80E-12	0,00E+00	-5,20E-08
Ionizing radiation ⁶⁾	kBq 11235e	5,39E-03	1,24E-02	2,89E-02	4,67E-02	7,64E-04	6,84E-04	MND	MND	MND	MND	MND	MND	MND	MNR	5,58E-07	4,25E-06	0,00E+00	-4,66E-02
Ecotoxicity (freshwater)	CTUe	1,19E-01	2,23E+00	5,15E+00	7,50E+00	1,22E-01	1,08E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1,05E-04	9,11E-03	0,00E+00	-1,76E+01
Human toxicity, cancer	CTUh	2,40E-12	5,85E-11	6,23E-10	6,84E-10	3,74E-12	3,65E-11	MND	MND	MND	MND	MND	MND	MND	MNR	2,59E-15	3,62E-13	0,00E+00	-2,35E-10
Human tox. non-cancer	CTUh	7,99E-11	2,23E-09	3,88E-09	6,19E-09	1,19E-10	9,83E-10	MND	MND	MND	MND	MND	MND	MND	MNR	1,04E-13	1,38E-11	0,00E+00	-7,52E-09
SQP ⁷⁾	-	6,46E-02	2,61E+00	4,43E+01	4,70E+01	1,03E-01	8,90E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,35E-04	5,72E-04	0,00E+00	-7,22E+00

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	2,85E-02	3,07E-02	4,44E+00	4,50E+00	2,12E-03	5,69E-03	MND	MND	MND	MND	MND	MND	MND	MNR	1,32E-06	1,41E-04	0,00E+00	-2,51E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	6,50E+00	6,50E+00	0,00E+00	-6,50E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	9,05E+00
Total use of renew. PER	MJ	2,85E-02	3,07E-02	1,09E+01	1,10E+01	2,12E-03	-6,49E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1,32E-06	1,41E-04	0,00E+00	6,54E+00
Non-re. PER as energy	MJ	1,90E-01	2,54E+00	3,40E+00	6,13E+00	1,46E-01	1,52E-01	MND	MND	MND	MND	MND	MND	MND	MNR	1,17E-04	1,07E-03	0,00E+00	-7,40E+00
Non-re. PER as material	MJ	0,00E+00	0,00E+00	2,85E-01	2,85E-01	0,00E+00	-2,85E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	4,41E-03
Total use of non-re. PER	MJ	1,90E-01	2,54E+00	3,69E+00	6,42E+00	1,46E-01	-1,34E-01	MND	MND	MND	MND	MND	MND	MND	MNR	1,17E-04	1,07E-03	0,00E+00	-7,39E+00
Secondary materials	kg	1,64E-05	7,44E-04	2,11E-01	2,12E-01	4,96E-05	2,44E-04	MND	MND	MND	MND	MND	MND	MND	MNR	3,25E-08	6,92E-07	0,00E+00	-7,42E-04
Renew. secondary fuels	MJ	1,16E-07	7,73E-06	1,47E-01	1,47E-01	5,46E-07	9,62E-07	MND	MND	MND	MND	MND	MND	MND	MNR	3,28E-10	2,33E-08	0,00E+00	-5,54E-06
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	1,24E-04	3,26E-04	3,97E-03	4,42E-03	1,86E-05	-4,86E-05	MND	MND	MND	MND	MND	MND	MND	MNR	1,52E-08	6,24E-06	0,00E+00	-8,71E-03

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	3,91E-04	3,22E-03	1,37E-02	1,73E-02	1,66E-04	5,70E-04	MND	MND	MND	MND	MND	MND	MND	MNR	1,55E-07	2,78E-06	0,00E+00	-6,20E-02
Non-hazardous waste	kg	7,55E-03	5,40E-02	3,62E-01	4,24E-01	2,94E-03	3,79E-01	MND	MND	MND	MND	MND	MND	MND	MNR	2,55E-06	1,78E-03	0,00E+00	-2,51E+00
Radioactive waste	kg	1,58E-06	1,71E-05	1,22E-05	3,09E-05	1,00E-06	5,58E-07	MND	MND	MND	MND	MND	MND	MND	MNR	7,84E-10	1,01E-09	0,00E+00	-2,30E-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	0,00E+00	0,00E+00	0,00E+00	2,00E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+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	3,71E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,66E-03	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	6,05E-03	6,05E-03	0,00E+00	1,03E+01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+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 ₂ e	7,93E-03	1,68E-01	2,42E-01	4,18E-01	9,70E-03	1,88E-02	MND	MND	MND	MND	MND	MND	MND	MNR	7,72E-06	3,98E-03	0,00E+00	-7,08E-01
Ozone depletion Pot.	kg CFC ₁₁ e	9,04E-10	3,09E-08	2,61E-08	5,79E-08	1,80E-09	1,31E-09	MND	MND	MND	MND	MND	MND	MND	MNR	1,42E-12	9,13E-12	0,00E+00	-2,92E-08
Acidification	kg SO ₂ e	2,55E-05	5,51E-04	9,17E-04	1,49E-03	2,28E-05	7,06E-05	MND	MND	MND	MND	MND	MND	MND	MNR	2,57E-08	8,61E-07	0,00E+00	-4,68E-03
Eutrophication	kg PO ₄ ³ e	1,06E-05	1,25E-04	7,23E-04	8,59E-04	4,92E-06	1,01E-04	MND	MND	MND	MND	MND	MND	MND	MNR	5,85E-09	5,26E-07	0,00E+00	-1,24E-03
POCP (“smog”)	kg C ₂ H ₄ e	2,60E-06	2,18E-05	8,31E-05	1,07E-04	1,15E-06	5,48E-06	MND	MND	MND	MND	MND	MND	MND	MNR	1,00E-09	2,32E-08	0,00E+00	-2,04E-04
ADP-elements	kg Sbe	4,07E-08	4,40E-07	1,46E-06	1,94E-06	3,46E-08	9,99E-08	MND	MND	MND	MND	MND	MND	MND	MNR	1,77E-11	3,09E-10	0,00E+00	-6,85E-07
ADP-fossil	MJ	2,30E-01	2,54E+00	3,66E+00	6,43E+00	1,46E-01	1,52E-01	MND	MND	MND	MND	MND	MND	MND	MNR	1,17E-04	1,07E-03	0,00E+00	-7,40E+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

09.11.2024

