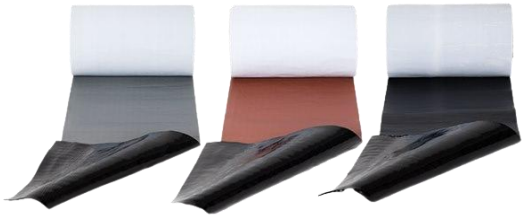
ENVIRONMENTAL PRODUCT DECLARATION

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

Flashing roll with stainless-steel mesh
SabetoFLEX



EPD HUB, HUB-3045
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Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	SabetoFLEX
Address	ApSHesthøjvej 13, DK-7870 Roslev, Denmark
Contact details	ed@sabetoflex.dk
Website	www.sabetoflex.dk

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
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Ed Steijn, SabetoFLEX
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Haiha Nguyen, 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	Flashing roll with stainless-steel mesh
Additional labels	-
Product reference	-
Place of production	SabetoFLEX, ApSHesthøjvej 13, DK-7870 Roslev, Denmark
Period for data	Calendar year 2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	-

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m2 of flashing unit
Declared unit mass	2,675 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	1,23E+01
GWP-total, A1-A3 ($kgCO_2e$)	1,14E+01
Secondary material, inputs (%)	3,16
Secondary material, outputs (%)	-2,99
Total energy use, A1-A3 (kWh)	54,7
Net freshwater use, A1-A3 (m^3)	0,21

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

SabetoFLEX ApS is a SME which is part of the larger conglomerate PER POULSEN, ROSLEV HOLDING ApS and is a leading producer of eco-friendly flashing and jacketing solutions. Our Head Office and primary production facilities are located in Roslev, Denmark where, for the last 20 years, we have designed, perfected and produced cone flashings, flashing rolls, jacketing rolls, sub-roof penetrations, vapor barriers, built in silencers, support brackets and last but not least, our Universal Assembly Glue to tie things together. We produce our own unique patented flashing material as well as all our cone flashings in Denmark. We value this greatly because it provides us with endless opportunities to ideate and implement major improvements to our flashing materials. We have been doing this for the last 20 years and will continue to do so in the years to come. How do we do this? By constantly challenging ourselves to innovate, create and improve. It is the core of our business, and the reason our products are easier and more efficient to work with. And that's why our guarantee policies are completely without fine print.

PRODUCT DESCRIPTION

SabetoFLEX's Flashing Roll with Stainless-Steel Mesh with PIB fully adhesive backing that is self-vulcanizing to the front. A stainless mesh makes SabetoFLEX incredibly strong and provides high stretchability. 100% in both directions. The top foil has been thoroughly tested over the last 75 years. It can withstand contact with all known building materials and in all air layers - without any post-treatment. Used for covering attics, chimneys, walls, skylights, solar collectors, etc.
Funtional properties include:

- Tolerates mild vibrations.
- 100 % recyclable.
- No leaching of PFAS and other toxics into the drinking water.
- Composed of UV-resistant polyisobutylene (PIB) and stainless- steel mesh.
- Applications: covering of dormer windows, chimneys, walls, skylights, solar panels, ventilation, etc.
- Available colours: Black, Grey, and Brick red.
- Available thicknesses: 1,2 and 1,8 mm.
- Available widths: 280, 560 and 1120 mm.
- Available lengths: 5 and 150m.
- Installation temperatures: from -10°C to +60°C.
- Installation method: Self-adhesive, self-vulcanizing, at least 20 mm overlap. Can be glued to difficult surfaces with SabetoFLEX Universal assembly glue. Foldability at low temperatures (-40°C).
- Usage temperatures: -60° to +80° with tension free assembly. Tested for installation at up to 223 ° C for 30 min.
- Standards:
    - UV-Stability Top foil EN 1297 (5000 h)
    - Fire resistance DS/EN 13501-1
    - Vapor tollerence µ Top foil DS/EN 1931 260.000 µ
- Storage Dry, up to 40°C
- Environmental notes: Contains no environmental harmful substances.

Further information can be found at www.sabetoflex.dk.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	1-4	EU
Minerals	72-76	EU
Fossil materials	18-22	EU
Bio-based materials	1-5	EU

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0.076
Biogenic carbon content in packaging, kg C	0.25

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m2 of flashing unit
Mass per declared unit	2.675 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.

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 manufacturing is done by heating the raw materials (PIB and copolymers) to a specific temperature and mixing them. The PIB is generally delivered as hot from the petroleum refinery to the manufacturing site, where it's heated further. After this the mix is applied to the reinforcing structure (steel). The resulting sheet is cooled and then faced with mineral granules and sand. The resulting sheet is then cut into pieces of desired shape and size. Any waste cut-offs from the manufacturing are melted for re-use. Once production is complete, the product is rolled and covered in stretch film and then loaded on to pallets to be transported by truck to site.

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 construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions. Average distance of transportation from production plant to building site is calculated from reference period sales data and the transportation method is via lorry. Transportation does not cause losses as products are packaged properly. Installation (A5) includes the installation losses, energy used in installation and waste generated. Upon arrival on site, the product is unloaded, and the packaging is disposed. The recycling, incineration and landfill rates are as per Eurostat for recycling materials.

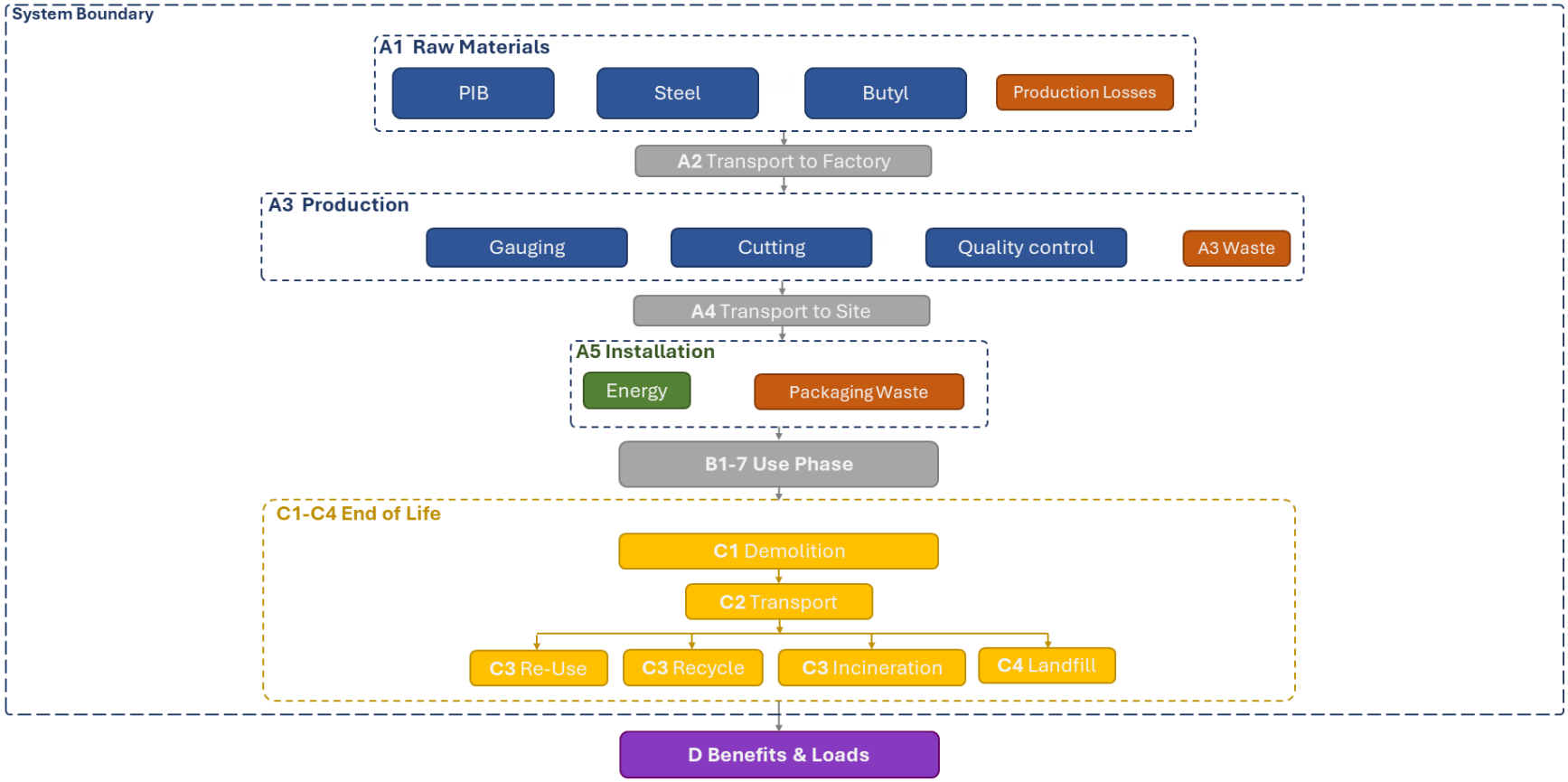
PRODUCT USE AND MAINTENANCE (B1-B7)

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)

At the end-of-life, the product is assumed to be removed via mechanical machinery and electric tools. The energy intensity assumed was based on Bozdağ, Ö & Seçer, M. (2007), despite it being mainly focused on concrete, given no better references could be found.(C1). The PIB roofing is then returned to the SabetoFLEX site for processing (C2). At the plant, the product is recycled for further use using an internal proprietary technology. All energy and ancillary materials required for this are considered (C3). It is assumed that both the collection and internal processes will lead to some wastage due to unavoidable inefficiencies, so some material will be destined for disposal (C4). Benefits and loads for the steel, membrane and packaging are considered (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	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	-

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 v3.10.1 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	1,11E+01	5,24E-01	-1,71E-01	1,14E+01	0,00E+00	1,32E+00	MND	MND	MND	MND	MND	MND	MND	2,29E-02	3,75E-03	1,72E-03	2,50E-05	-1,06E+01
GWP – fossil	kg CO_2e	1,10E+01	5,24E-01	7,61E-01	1,23E+01	0,00E+00	2,21E-01	MND	MND	MND	MND	MND	MND	MND	2,29E-02	3,75E-03	1,72E-03	2,50E-05	-1,12E+01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-9,34E-01	-9,34E-01	0,00E+00	1,10E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,19E-07	-3,65E-06	-7,94E-09	5,47E-01
GWP – LULUC	kg CO_2e	8,44E-03	1,97E-04	1,65E-03	1,03E-02	0,00E+00	2,90E-05	MND	MND	MND	MND	MND	MND	MND	1,74E-06	1,66E-06	2,12E-06	1,43E-08	-8,46E-03
Ozone depletion pot.	kg CFC_{-11}e	2,40E-07	1,05E-08	2,46E-08	2,75E-07	0,00E+00	3,32E-10	MND	MND	MND	MND	MND	MND	MND	5,89E-10	5,24E-11	2,31E-11	7,23E-13	-2,53E-07
Acidification potential	mol H^+e	4,64E-02	1,69E-03	3,03E-03	5,11E-02	0,00E+00	1,28E-04	MND	MND	MND	MND	MND	MND	MND	3,15E-05	1,25E-05	2,04E-05	1,77E-07	-4,64E-02
EP-freshwater[2)]	kg Pe	3,19E-03	3,53E-05	2,38E-04	3,46E-03	0,00E+00	5,29E-06	MND	MND	MND	MND	MND	MND	MND	1,00E-06	2,92E-07	1,11E-06	2,05E-09	-3,19E-03
EP-marine	kg Ne	8,29E-03	5,75E-04	7,11E-04	9,58E-03	0,00E+00	1,19E-04	MND	MND	MND	MND	MND	MND	MND	8,86E-06	4,05E-06	4,53E-06	6,75E-08	-8,31E-03
EP-terrestrial	mol Ne	8,65E-02	6,25E-03	7,71E-03	1,00E-01	0,00E+00	5,29E-04	MND	MND	MND	MND	MND	MND	MND	9,53E-05	4,41E-05	5,11E-05	7,37E-07	-8,68E-02
POCP ("smog")[3)]	kg NMVOCe	6,67E-02	2,76E-03	4,08E-03	7,35E-02	0,00E+00	1,65E-04	MND	MND	MND	MND	MND	MND	MND	5,90E-05	1,74E-05	1,52E-05	2,64E-07	-6,73E-02
ADP-minerals & metals[4)]	kg Sbe	8,17E-05	1,45E-06	5,79E-06	8,89E-05	0,00E+00	8,87E-08	MND	MND	MND	MND	MND	MND	MND	1,21E-07	1,23E-08	1,22E-07	3,97E-11	-8,36E-05
ADP-fossil resources	MJ	2,14E+02	7,59E+00	1,88E+01	2,40E+02	0,00E+00	2,86E-01	MND	MND	MND	MND	MND	MND	MND	3,68E-01	5,26E-02	2,30E-02	6,13E-04	-2,22E+02
Water use[5)]	m^3e depr.	4,08E+00	3,89E-02	5,26E-01	4,64E+00	0,00E+00	1,15E-02	MND	MND	MND	MND	MND	MND	MND	1,81E-03	2,44E-04	4,14E-04	1,77E-06	-4,12E+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	5,13E-07	5,21E-08	3,43E-08	5,99E-07	0,00E+00	1,98E-09	MND	MND	MND	MND	MND	MND	MND	1,17E-10	2,98E-10	2,78E-10	4,03E-12	-5,05E-07
Ionizing radiation[6)]	kBq U235e	7,01E-01	9,15E-03	1,31E-01	8,42E-01	0,00E+00	8,70E-04	MND	MND	MND	MND	MND	MND	MND	6,08E-05	4,26E-05	1,95E-04	3,85E-07	-7,22E-01
Ecotoxicity (freshwater)	CTUe	7,09E+01	8,95E-01	3,23E+00	7,50E+01	0,00E+00	1,56E-01	MND	MND	MND	MND	MND	MND	MND	3,06E-02	8,32E-03	1,34E-02	5,14E-05	-7,02E+01
Human toxicity, cancer	CTUh	2,57E-09	8,63E-11	1,05E-09	3,70E-09	0,00E+00	1,80E-11	MND	MND	MND	MND	MND	MND	MND	3,20E-12	6,38E-13	1,53E-12	4,60E-15	-2,58E-09
Human tox. non-cancer	CTUh	1,42E-07	4,93E-09	7,70E-09	1,55E-07	0,00E+00	7,95E-10	MND	MND	MND	MND	MND	MND	MND	1,19E-10	3,29E-11	1,04E-10	1,06E-13	-1,43E-07
SQP[7)]	-	3,44E+01	7,65E+00	8,00E+01	1,22E+02	0,00E+00	2,92E-01	MND	MND	MND	MND	MND	MND	MND	1,14E-02	3,14E-02	4,49E-02	1,21E-03	-3,53E+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	8,79E+00	1,24E-01	9,24E+00	1,82E+01	0,00E+00	-6,11E+00	MND	MND	MND	MND	MND	MND	MND	1,25E-03	7,21E-04	4,30E-03	5,92E-06	-9,49E+00
Renew. PER as material	MJ	2,32E+00	0,00E+00	8,13E+00	1,04E+01	0,00E+00	-8,17E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	-2,27E+00	-2,27E+00
Total use of renew. PER	MJ	1,11E+01	1,24E-01	1,74E+01	2,86E+01	0,00E+00	-1,43E+01	MND	MND	MND	MND	MND	MND	MND	1,25E-03	7,21E-04	4,30E-03	-2,27E+00	-1,18E+01
Non-re. PER as energy	MJ	1,59E+02	7,59E+00	1,21E+01	1,78E+02	0,00E+00	-6,40E+00	MND	MND	MND	MND	MND	MND	MND	3,68E-01	5,26E-02	2,30E-02	6,13E-04	-1,69E+02
Non-re. PER as material	MJ	5,49E+01	0,00E+00	5,60E+00	6,05E+01	0,00E+00	9,32E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	-5,38E+01	-1,24E+00
Total use of non-re. PER	MJ	2,14E+02	7,59E+00	1,77E+01	2,39E+02	0,00E+00	-6,39E+00	MND	MND	MND	MND	MND	MND	MND	3,68E-01	5,26E-02	2,30E-02	-5,38E+01	-1,71E+02
Secondary materials	kg	8,46E-02	3,28E-03	3,45E-02	1,22E-01	0,00E+00	3,96E-04	MND	MND	MND	MND	MND	MND	MND	5,32E-05	2,36E-05	2,81E-05	1,54E-07	8,94E-02
Renew. secondary fuels	MJ	5,74E-03	4,14E-05	2,78E-01	2,84E-01	0,00E+00	3,46E-06	MND	MND	MND	MND	MND	MND	MND	1,36E-07	3,01E-07	1,31E-06	3,19E-09	-5,64E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,97E-01	1,12E-03	1,48E-02	2,13E-01	0,00E+00	-6,07E-04	MND	MND	MND	MND	MND	MND	MND	4,45E-05	6,97E-06	1,22E-05	6,37E-07	-1,97E-01

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	1,12E+00	1,10E-02	4,67E-02	1,17E+00	0,00E+00	3,57E-03	MND	MND	MND	MND	MND	MND	MND	2,57E-04	9,17E-05	1,51E-04	6,77E-07	-1,11E+00
Non-hazardous waste	kg	1,75E+01	2,20E-01	4,11E+00	2,18E+01	0,00E+00	1,20E+00	MND	MND	MND	MND	MND	MND	MND	5,88E-03	1,72E-03	5,44E-03	1,55E-05	-2,03E+01
Radioactive waste	kg	1,76E-04	2,26E-06	3,33E-05	2,11E-04	0,00E+00	2,19E-07	MND	MND	MND	MND	MND	MND	MND	1,39E-08	1,04E-08	5,01E-08	9,39E-11	-1,81E-04

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	5,19E-02	5,19E-02	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	0,00E+00	0,00E+00	0,00E+00	6,15E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-8,00E-02	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	1,65E-01	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	1,65E+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 – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,93E-01	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	9,54E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	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_2e	1,10E+01	5,20E-01	7,56E-01	1,22E+01	0,00E+00	2,29E-01	MND	MND	MND	MND	MND	MND	MND	2,27E-02	3,73E-03	1,71E-03	2,47E-05	-1,11E+01
Ozone depletion Pot.	kg $CFC_{-11}e$	1,96E-07	8,39E-09	2,06E-08	2,25E-07	0,00E+00	2,69E-10	MND	MND	MND	MND	MND	MND	MND	4,69E-10	4,19E-11	1,90E-11	5,74E-13	-2,06E-07
Acidification	kg SO_2e	3,87E-02	1,28E-03	2,42E-03	4,24E-02	0,00E+00	9,46E-05	MND	MND	MND	MND	MND	MND	MND	2,47E-05	9,57E-06	1,64E-05	1,31E-07	-3,87E-02
Eutrophication	kg PO_4^3e	2,91E-01	3,24E-04	1,04E-02	3,02E-01	0,00E+00	3,25E-05	MND	MND	MND	MND	MND	MND	MND	4,69E-06	2,33E-06	2,38E-06	4,16E-08	-2,86E-01
POCP (“smog”)	kg C_2H_4e	6,53E-03	1,21E-04	3,47E-04	6,99E-03	0,00E+00	1,03E-05	MND	MND	MND	MND	MND	MND	MND	2,77E-06	8,57E-07	9,74E-07	1,24E-08	-6,50E-03
ADP-elements	kg Sbe	8,09E-05	1,41E-06	5,72E-06	8,81E-05	0,00E+00	8,55E-08	MND	MND	MND	MND	MND	MND	MND	1,19E-07	1,20E-08	1,21E-07	3,89E-11	-8,28E-05
ADP-fossil	MJ	2,02E+02	7,44E+00	1,66E+01	2,26E+02	0,00E+00	2,71E-01	MND	MND	MND	MND	MND	MND	MND	3,67E-01	5,19E-02	1,96E-02	6,07E-04	-2,10E+02

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	1,11E+01	5,24E-01	7,63E-01	1,23E+01	0,00E+00	2,21E-01	MND	MND	MND	MND	MND	MND	MND	2,29E-02	3,75E-03	1,72E-03	2,50E-05	-1,12E+01

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.

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited
11.03.2025

VERIFIED ISO 14025