

# Environmental Product Declaration



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

## **EVIA foundation with Koljern® technology**

A prefabricated Concrete free Slab-On-Grade Foundation

**EVIA AB**



Programme:

The International EPD® System, [www.environdec.com](http://www.environdec.com)

Programme operator:

EPD International AB

EPD registration number:

S-P-13270

Publication date:

2024-06-11

Valid until:

2029-06-10

*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [www.environdec.com](http://www.environdec.com)*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

### Accountabilities for PCR, LCA and independent, third-party verification

#### Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): *Construction products, 2019:14, Version 1.3.3*

PCR review was conducted by: *The Technical Committee of the International EPD® System. Claudia A. Peña. Contact via [info@environdec.com](mailto:info@environdec.com)*

#### Life Cycle Assessment (LCA)

LCA accountability: *Fanni Végvári, CarbonZero AB*

#### Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

☒ EPD verification by individual verifier

Third-party verifier: Matt Fishwick, Fishwick Environmental Ltd.

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

## Company information

### Owner of the EPD:

EVIA AB

### Contact:

<https://www.evia.se/>

[info@evia.se](mailto:info@evia.se)

+46 300 606 80

### Description of the organisation:

EVIA AB develops products and solutions for a more sustainable world. The company's goal is to be able to offer complete solutions throughout the construction industry where buildings last longer, provide a better indoor climate and do not affect the environment negatively. EVIA does this by developing and marketing non-toxic products with high performance and long lifespans with the ability to re-use and recycle.

EVIA AB owns patents and trademarks linked to the Koljern® technology and is the only manufacturer of Koljern® products in the world.

### Name and location of production site(s):

Förslöv, Sweden and Tessenderlo, Belgium.

## Product information

### Product name:

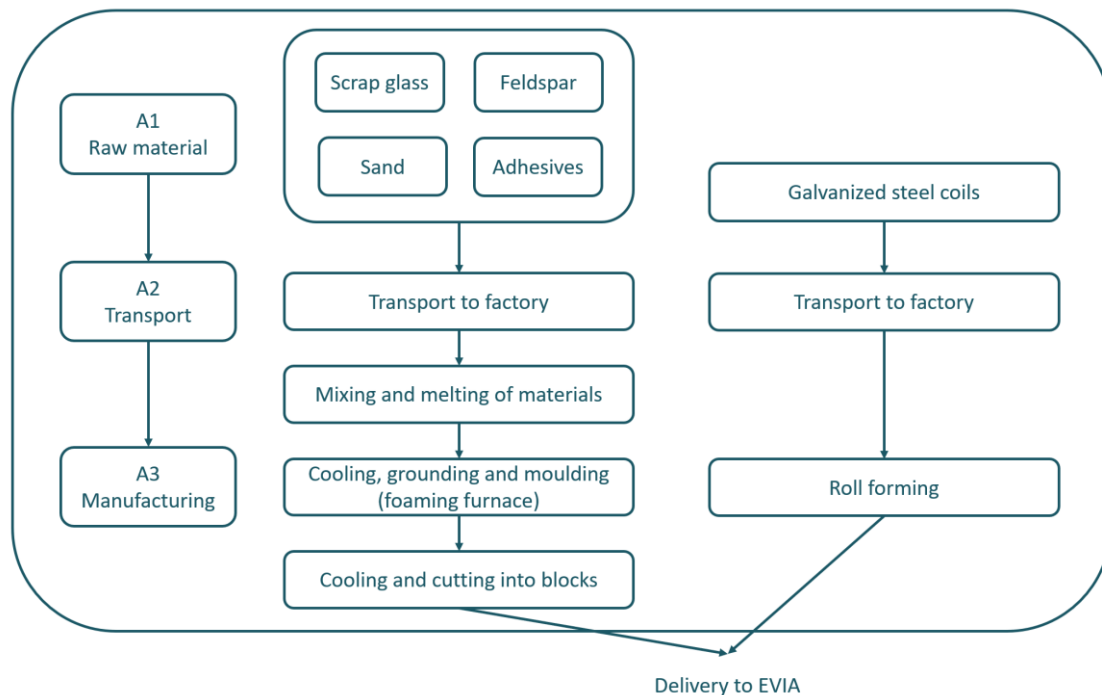
EVIA foundation

### Product description:

The EVIA Foundation produced by EVIA AB is made from two main components, steel profiles and cellular glass, put together as a verified system. Both components have EPDs for their products and will be the reference documents for this study. For the steel profiles, galvanized steel coils are roll formed into the desired shape. The cellular glass is manufactured by mixing recycled glass, sand, feldspar and adhesives together, melting it down and grounded down to produce glass powder. Additives are added to allow for a glass foaming process which are then poured into moulds. The blocks are then cooled and later cut into rectangular shapes before being transported to customer. See figure below for a visual representation of the product manufacturing processes. As the product can be customized, the range between the steel profiles and cellular glass insulation will differ as the ratio between the components are not linear. In this study, a typical EVIA foundation produced by EVIA AB has been analyzed.

## Technical information

Component/ material	Classification	Standard	Reaction to fire class (EN 13501-1)
Insulation material FOAMGLAS® T3+	$\lambda_D \leq 0,036W/mK$ $CS \geq 0,6N/mm^2$	EN 13167	Class A (core A1)
Steel profiles - Steel angle plate - U-profile	Specified in the design documents	EN 10025-2 EN 1090-1	Class A1



### Application and Use

The EVIA Foundation is a complete product for slab-on-grade foundations for insulated buildings. The EVIA foundation is intended for use in timber- or stick framed buildings, villas, school buildings, apartment buildings or similar, with the intention to minimise climate impact and prolong performance and product longevity. The EVIA foundation is designed to avoid the need for concrete and can therefore enable a circular product life cycle.

### Verified Building System

The product is based on Koljern®-technology, which utilizes thin galvanized steel beams and Foamglas insulation, to create prefabricated building elements. The Koljern®-technology was developed in the early years of 2000 and has since been European Organisation for Technical Approvals (ETA) approved, tested and evaluated in multiple projects for decades. Foamglas insulation has been on the market for about 100 years.

### Product advantages

- Fast installation compared to concrete slab, with no drying time
- Free from concrete and fossil-based insulation materials
- Moisture, vermin(pests) and fireproof insulation material (\*)
- Guaranteed insulation performance with no moisture uptake
- Safe & pleasant working environment
- Easy to implement pipes and plumbing
- Free from harmful emissions
- Product performance expected to outlast the building lifetime, enable re-use

(\* for more data on insulation performance see Declaration of Performance (DOP) and EPD of Foamglas T3+, available here: <https://www.foamglas.com/en-gb/products/fgbt3slabs>)



### **Circular building design**

The EVIA foundation is designed for disassembly and re-use. For this reason, all components are fixed with screws, and not welded. All materials are non-combustible, non-degradable and produced for longevity with expected lifetime well over 100 years.

The EVIA foundation is ready for cradle-to-cradle with the goal to enable circular buildings. Galvanized steel and Foamglas are based on high levels of recycled materials and intended for reuse. CO<sub>2</sub> emissions can be avoided in the future if the system as a whole or in parts is reused, encouraging buildings and materials to be made to last for many generations to come. All materials in the EVIA foundation can be recycled if needed.

### **Future outlook on CO<sub>2</sub> reduction**

The current levels of CO<sub>2</sub> emitted during the lifecycle of the EVIA foundation is mainly from production of materials (A1-A3). Today's CO<sub>2</sub> emissions from the EVIA foundation is however mostly due to the energy sources, and not fossil material contents. This means that as material production and transportation transitions to renewable energy sources in the future, the EVIA foundation impact will also reduce. EVIA strives to push suppliers and partners to accelerate the transition towards sustainable and renewable energy to faster provide truly sustainable solutions.

#### UN CPC code:

86722 - Engineering design services for the construction of foundations and building structures

#### Geographical scope:

Europe

### **LCA information**

#### Declared unit:

1 m<sup>2</sup> of EVIA foundation with a weight of 34,4 kg/m<sup>2</sup>.

#### Reference service life:

Not applicable. The product is designed for a lifetime of at least 100 years. According to the EPDs that the study is based on, the RSL is set to 100 years if the product is installed according to the manufacturers' and suppliers' guidelines.

#### Time representativeness:

The data is represented for the year of 2022.

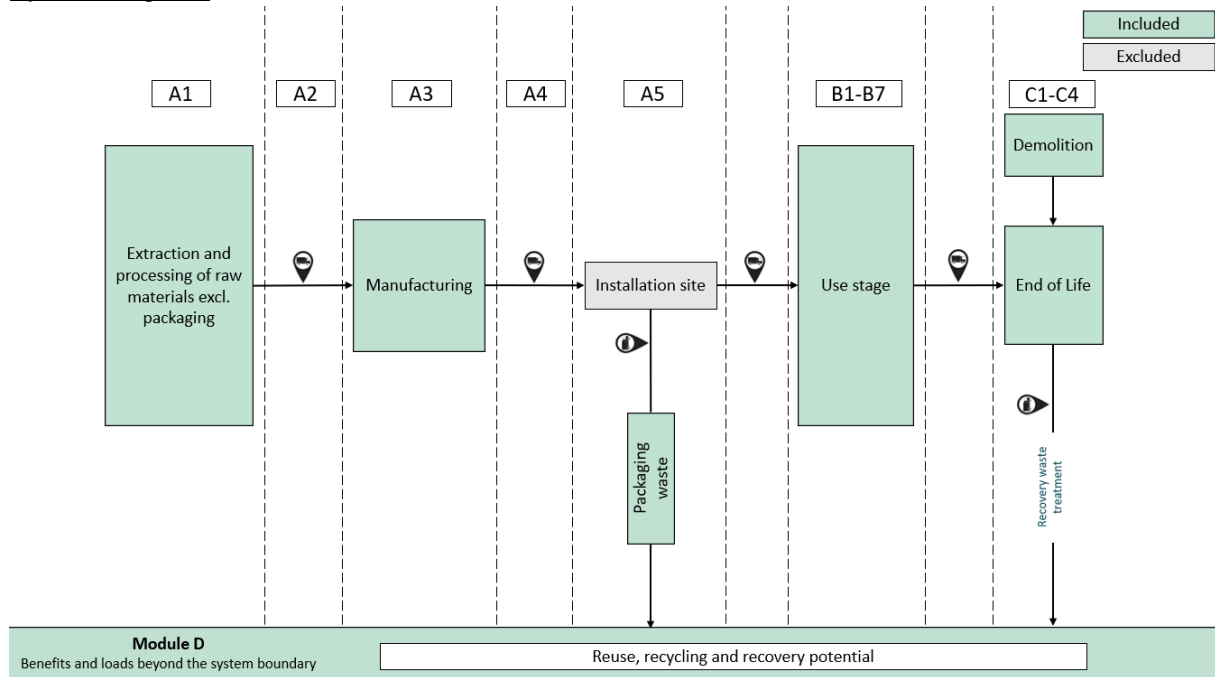
#### Database(s) and LCA software used:

LCA for Experts (v.10.7.1.28) with an integrated ecoinvent database v.3.8.1 (cut-off).

#### Description of system boundaries:

Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + A4-A5 + B + C + D).

### System diagram:



### More information:

#### *A1, raw material supply*

This module considers the extraction and processing of all raw materials, energy, and transportation which occur upstream to the studied manufacturing process (except for ancillary materials used in product manufacturing process). The raw materials used in this product is galvanized steel, sand, feldspar, scrap glass and adhesives.

#### *A2, transport to the manufacturer*

The raw materials are transported to the manufacturing site. This also includes additives and packaging.

#### *A3, manufacturing*

This module includes manufacturing of the components to the EVIA foundation. The galvanized steel is manufactured in Förslöv, Sweden and the cellular glass in Tessenderlo, Belgium where the factories consume Swedish and Belgian residual electricity mixes respectively.

#### *A4, Transport*

Transportation from the factories to the EVIA and then transportation to the building site is taken into account. The transportation to the building site is a national average assumed to be 500 km as EVIA deliver to building projects all over Sweden.

#### *A5, Construction installation*

This stage is only partly included as it declared the waste management of the packaging material.

#### *B1-B7 Use phase*

No emissions are associated with the use stage of the product.

#### *C1 Deconstruction/Demolition*

This stage includes the de-construction and/or demolition of the EVIA foundation.

#### *C2 Transport*

This stage comprises the transportation of waste to treatment and disposal and is assumed to be 50 km.

#### *C3 Waste processing*

This stage includes any waste treatment needed.

#### *C4 Final disposal*

This includes any material that is landfilled.

#### *D Benefits and loads beyond the system boundary*

Potential benefits are obtained from energy recovery and recycling of waste materials. In energy recovery, it is assumed that heat and electricity from waste incineration substitute thermal energy from natural gas and average Swedish electricity grid mix, respectively.

#### *Omissions of life cycle stages*

The following flows were excluded from the system boundary:

- A1-A3: The plants, production of machines and transportation systems are excluded since the related flows are supposed to be negligible compared to the potential environmental impacts through the life cycle of the product.

In addition, the following flows are excluded from the system boundaries:

- Flows related to human activities, such as employee transport.

#### *Cut-off criteria*

The following procedures were followed for the exclusion of inputs and output.

- All input and output flows in a unit process were considered i.e., taking into account the value of all flows in the unit process and the corresponding LCI where data was available.
- Data gaps were filled by conservative assumptions with average or generic data. Any assumptions in such cases were documented.
- The use of cut-off criterion on mass inputs and primary energy at the unit process level (1%) and at the information module level (5%).

All hazardous and toxic materials and substances are included in the inventory and the cut-off rules do not apply.

#### *Geographic scope*

This EPD centers around the production and manufacturing process of EVIA foundation in Europe. The geographic scope for module C is Sweden as end-of-life occurs in Sweden.

#### *Allocation*

No allocation for co-products was conducted in this study as no co-products are created during the manufacturing process. For the manufacturers of the components the incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis. Cut-off allocations have been applied to the end-of-life waste.



## LCA: Scenarios and additional technical information

### MANUFACTURING OF PRODUCT (A1-A3)

The information in module A1-A3 is derived from the specific EPDs for the components of the foundation. As the galvanized steel EPD is according to the EN 15804+A1 standard, it has been re-modelled with the information taken from the EPD instead to comply with the newer version of EN15804+A2.

Component	Source
Galvanized steel profile	NEPD-2269-1037-EN
Cellular glass	n° 200010_001_EN

### TRANSPORT TO THE BUILDING SITE (A4)

Scenario information	Unit (expressed per declared unit)
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat etc.	Truck-trailer, Euro 5, 50 - 60t gross weight / 40.6t payload capacity, 0,019 l/tkm diesel
Distance	120 + 500 km (galvanized steel) 1 100+ 500 km (cellular glass)
Capacity utilisation (including empty returns)	61%
Bulk density of transported products	7825 kg/m <sup>3</sup> of galvanized steel 95 kg/m <sup>3</sup> of cellular glass
Volume capacity utilisation factor (factor: =1 or <1 or 1 for compressed or nested packaged products)	Not applicable

#### Fuel type used

Fuel type	Database	Regional coverage	Time reference
market group for diesel	ecoinvent 3.8.1 (cut-off)	GLO	2021

### END OF LIFE (C1-C4)

Processes	Unit (expressed per declared unit)
Collection process specified by type	34,4 kg collected separately
	0 kg collected with mixed construction waste
Recovery system specified by type	0 kg for re-use
	31,63 kg for recycling
	0 kg for energy recovery
Disposal specified by type	2,25 kg product or material for final deposition
Assumptions for scenario development, e.g. transportation	The transportation model is modelled as in module A4, except the transportation distance is assumed to be 50 km to the waste processing.

### BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY (D)

The net benefits and loads are calculated according to EN 15804:2012+A2:2019 by the following equation:

$$e_{module D1} = (M_{MR out} - M_{MR in})(E_{MR after EoW out} - E_{VM Sub out} * \frac{Q_{R out}}{Q_{Sub}})$$



The calculation for the galvanized steel is thus as follows:  
 $(6,62 - 5,4)(2,052 - 2,94 \cdot 1/1) = -1,08$

The calculation for the cellular glass is thus as follows:  
 $(13,9 - 13,9)(0,58 - 3,05 \cdot 1/1) = 0$

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU	EU	EU	EU	SE								SE	SE	SE	SE	SE
Specific data used	9%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Results are based on EN 15804:2012+A2:2019 EF3.1.

The specific data used represents the percentage of the impact that derives from specific data and is based on the impact category GWP-GHG.

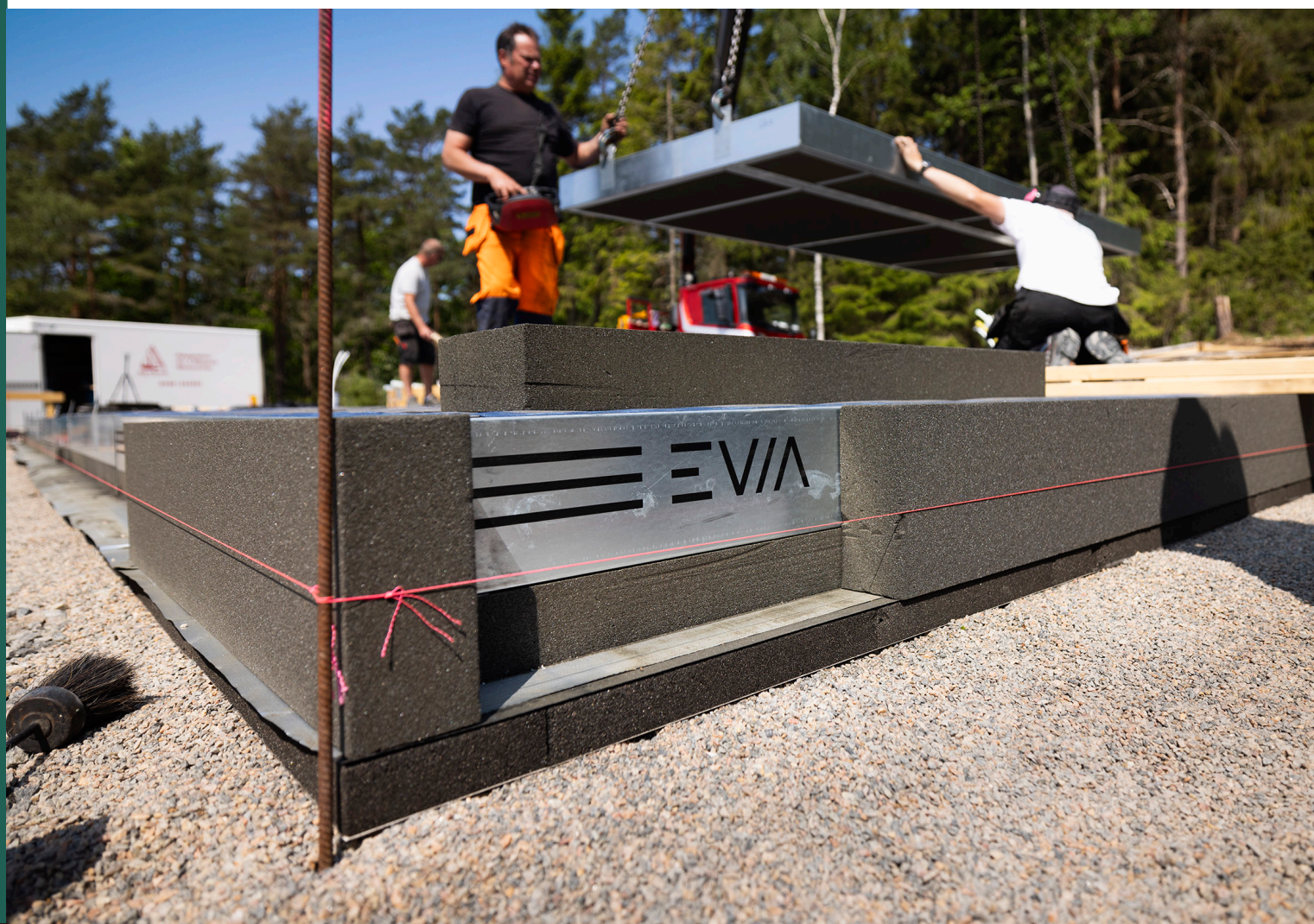




## Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Galvanized steel	6,62	8,16	0
Foamglas T3+ cellular glass	27,8	55	0
<b>TOTAL</b>	<b>34,4</b>	<b>16,86</b>	<b>0</b>
Packaging materials	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/DU
PE foil	0,21	0	0
Pallet	1,28	0	41,5, 0,531
Cardboard	0,18	0	41,5, 0,075
Paper strip	0,03	0	41,5, 0,012
<b>TOTAL</b>	<b>1,7</b>	<b>0</b>	<b>31,71, 0,618</b>

During the life cycle of the product no hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has been used in a percentage higher than 0,1% of the weight of the product.



## Results of the environmental performance indicators

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. As module C is included in the EPD, the use of the results of modules A1-A3 without considering the results of module C is discouraged.

### Mandatory impact category indicators according to EN 15804

Indicator	Unit	Results per m <sup>2</sup>								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP-total	kg CO <sub>2</sub> eq.	5,14E+01	1,29E+00	5,30E-01	0,00E+00	2,18E-02	4,08E-03	1,08E-02	3,60E-02	-8,35E-01
GWP-fossil	kg CO <sub>2</sub> eq.	5,14E+01	1,24E+00	5,16E-01	0,00E+00	2,09E-02	3,96E-03	1,08E-02	3,60E-02	-1,08E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	-7,61E-01	5,55E-02	7,04E-01	0,00E+00	9,44E-04	1,18E-04	2,48E-06	2,28E-04	2,74E-01
GWP-luluc	kg CO <sub>2</sub> eq.	6,99E-01	6,98E-05	1,97E-05	0,00E+00	1,16E-06	3,75E-07	1,21E-06	2,05E-04	-2,92E-02
ODP	kg CFC 11 eq.	1,60E-11	2,88E-07	1,56E-10	0,00E+00	4,80E-09	6,05E-10	1,72E-10	1,00E-13	-1,65E-10
AP	mol H <sup>+</sup> eq.	2,07E-01	3,65E-03	1,34E-04	0,00E+00	1,27E-04	4,45E-05	1,00E-04	2,50E-04	-3,25E-01
EP-freshwater	kg P eq.	8,98E-04	1,32E-05	2,99E-06	0,00E+00	2,20E-07	3,52E-08	3,31E-07	8,01E-08	-6,36E-05
EP-marine	kg N eq.	6,58E-02	1,07E-03	4,45E-05	0,00E+00	5,14E-05	1,13E-05	4,64E-05	6,36E-05	-4,95E-02
EP-terrestrial	mol N eq.	5,73E-01	1,18E-02	4,95E-04	0,00E+00	5,63E-04	1,24E-04	5,04E-04	7,01E-04	-1,27E+00
POCP	kg NMVOC eq.	1,60E-01	2,68E-03	1,25E-04	0,00E+00	1,49E-04	3,14E-05	1,49E-04	1,96E-04	-1,17E-01
ADP-minerals&metals*	kg Sb eq.	2,08E-04	2,24E-07	7,62E-08	0,00E+00	3,72E-09	7,54E-10	3,77E-09	2,35E-09	-6,58E-05

ADP-fossil*	MJ	1,49E+02	1,76E+01	4,76E-01	0,00E+00	2,93E-01	8,18E-02	1,41E-01	4,98E-01	-9,16E+02
WDP*	m <sup>3</sup>	3,64E-01	1,89E-02	5,07E-02	0,00E+00	3,10E-04	3,78E-04	4,77E-04	4,18E-03	-9,61E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-land use and land use change = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

### Additional mandatory and voluntary impact category indicators

Results per m <sup>2</sup>										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	5,37E+01	1,29E+00	5,26E-01	0,00E+00	2,18E-02	4,07E-03	1,07E-02	3,53E-02	-1,04E+00

<sup>1</sup> This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO<sub>2</sub> is set to zero.

## Resource use indicators

Results per m <sup>2</sup>										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ	4,08E+02	9,13E-02	1,59E-01	0,00E+00	7,67E-04	3,96E-02	8,06E-04	8,42E-02	-1,46E+02
PERM	MJ	2,16E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	4,29E+02	9,13E-02	1,59E-01	0,00E+00	7,67E-04	3,96E-02	8,06E-04	8,42E-02	-1,46E+02
PENRE	MJ	8,87E+02	1,76E+01	4,76E-01	0,00E+00	2,93E-01	9,27E-02	1,41E-01	6,21E-01	-9,26E+02
PENRM	MJ	1,88E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	9,06E+02	1,76E+01	4,76E-01	0,00E+00	2,93E-01	9,27E-02	1,41E-01	6,21E-01	-9,26E+02
SM	kg	1,31E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,86E+01
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m <sup>3</sup>	1,31E-02	4,92E-04	1,23E-03	0,00E+00	7,21E-06	5,80E-05	1,11E-05	1,01E-04	-1,32E+00
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									



## Waste indicators

Results per m <sup>2</sup>										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	6,55E-04	7,16E-11	6,66E-09	0,00E+00	0,00E+00	7,20E-11	0,00E+00	1,23E-10	-1,06E-06
Non-hazardous waste disposed	kg	4,56E+00	4,77E-05	1,72E+00	0,00E+00	0,00E+00	4,89E-05	3,21E+01	4,56E+00	-1,08E+00
Radioactive waste disposed	kg	2,59E-03	1,12E-05	3,25E-05	0,00E+00	0,00E+00	1,12E-05	0,00E+00	5,58E-06	-2,79E-02

## Output flow indicators

Results per m <sup>2</sup>										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	1,28E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	2,41E-01	0,00E+00	2,54E-01	0,00E+00	0,00E+00	0,00E+00	3,21E+01	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	0,00E+00	0,00E+00	-2,27E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,04E+00



# Additional environmental information

## Additional voluntary impact category indicators

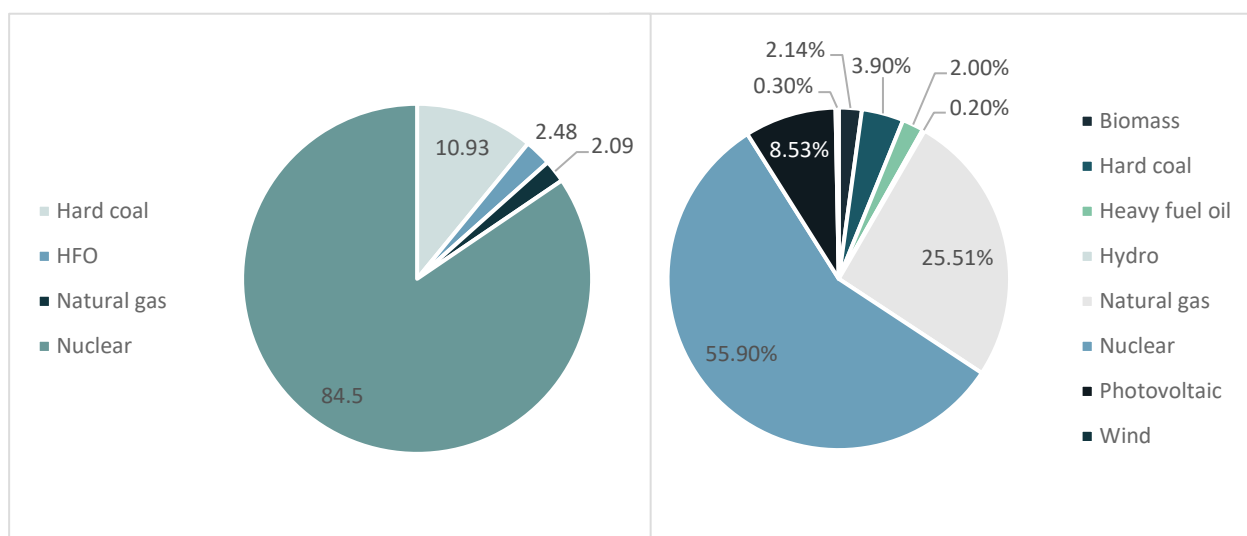
Results per m <sup>2</sup>										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP-total <sup>2</sup>	kg CO <sub>2</sub> eq.	5,39E+01	1,24E+00	5,28E-01	0,00E+00	2,09E-02	3,96E-03	1,08E-02	3,63E-02	-1,06E+00

<sup>2</sup> This indicator supports comparability with EPDs based on the previous version of EN 15804 (EN 15804:2012+A1:2013).

## Impact from energy sources

Greenhouse gas emissions from the use of electricity in the manufacturing phase.

Residual mix	Unit	Value	
Location		Sweden	Belgium
Electricity mix		Hard coal: 10,93% Heavy fuel oil: 2,48% Natural gas: 2,09% Nuclear: 84,5%	Biomass: 2,14% Hard coal: 3,9% Heavy fuel oil: 0,02% Hydro: 0,2% Natural gas: 25,51% Nuclear: 55,90% Photovoltaic: 8,53% Wind: 0,3%
Reference year		2023	2023
Source		European Residual Mixes 2022 (AIB, 2024)	European Residual Mixes 2022 (AIB, 2024)
GWP excl. Biogenic	kg CO <sub>2</sub> -eq. /kWh	0,068	0,167



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