Environmental Product Declaration

In accordance with ISO14025:2006 and EN15804:2012+A2:2019

Fibo wall panels

Owner of the declaration:
Fibo AS

Product name:
Fibo wall panels

Declared unit:
1 m2

Product category /PCR:
CEN Standard EN 15804 serves as core PCR
NPCR 010:2022

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-9427-9034

Registration number:
NEPD-9427-9034

Issue date:
24.03.2025

Valid to:
24.03.2030

The Norwegian
EPD Foundation

General information

Product:
Fibo wall panels

Program operator:
The Norwegian EPD Foundation
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Declaration number:
NEPD-9427-9034

This declaration is based on Product Category Rules:
CEN Standard EN 15804 serves as core PCR.
NPCR010:2022 Part B for Building boards

Statement of liability:
The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

Declared unit:
1 m2

Declared unit with option:
1 m2 covering surface of installed wall panel with a thickness of 10 mm and an expected lifetime of 30 years, including installation, maintenance and waste treatment at end-of-life.

Functional unit:
-

Verification:
Independent verification of the declaration and data, according to ISO14025:2010

internal ☐ external ■

Sign

Julie Lyslo Skullestad

Julie Lyslo Skullestad
Independent verifier approved by EPD Norway

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Place of production:
Lyngdal, Norway

Management system: ISO 9001:2015; ISO 14001:2015; PEFC ST2001:2020; PEFC ST 2002:2020

Organisation no:
NO 964 193 991 MVA

Issue date:
24.03.2025

Valid to:
24.03.2030

Year of study:
2024

Comparability:
EPD of construction products may not be able to compare if they do not comply with EN 15804 and are seen in a building context.

The EPD has been worked out by:
Asplan Viak AS, Kristine Bjordal og Dan André Johansen

Approved

Håkon Haugen

Manager of EPD Norway

Product

Product description:

Fibo wall panels are a waterproof panel system based on plywood covered with high-pressure laminate (HPL) on the front and a thinner balancing layer on the back.

Fibo wall panels can be used as a water-proof layer on walls in bathrooms and as kitchen board. The panels are also suitable for wardrobes, washing rooms, cleaning rooms, laboratories, commercial kitchens, sport facilities, camping sites, hotels, schools, etc.

Product specification:

Wall panels are made both as bathroom panels and as kitchen board. Different dimensions are provided, the following are available:

- Bathroom Wall panels: 600/900/1040/1200 mm x 2400/2720/3020 mm
- Kitchen Board: 600 mm x 580/2400 mm

Materials	Value	%
Plywood	6,12	80,7 %
High-pressure laminate	1,08	14,2 %
Glue	0,14	1,8 %
Other	0,24	3,2 %
Total weight product	***7,58***	***100,0 %***
Packaging	0,34	
Total weight of product incl. packaging	***7,92***	

Technical data:

Plywood has 7 layers of veneer in accordance with NS-EN 13986 with water resistant glue, a thickness of 9 mm and a density of 680 kg/m3. HPL in accordance with EN 438-3 with a thickness of 0.6-0.8 mm on the frontside and a balancing layer of 0.2-0.3 mm on the backside. The density of the HPL is 1350 kg/m3.

Market:

Norway, Northern Europe and North America. The scenarios are based on the Norwegian and European market.

Reference service life, product:

The service life of the wall panel is set to 30 years. The estimated service lifetime is provided by the manufacturer. There is no available documentation for this estimation. With good maintenance of sealant in profiles, the service life of the panels can be extended, which means there will be no need for replacement of the panels after 30 years.

Reference service life, building:

60 years

Additional technical information

Not relevant

LCA: Calculation rules

Declared unit:

1 m2 covering surface of installed wall panel with a thickness of 10 mm and an expected lifetime of 30 years, including installation, maintenance and waste treatment at end-of-life.

Cut-off criteria:

All major raw materials and all the essential energy is included. The production process for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804+A2:2019. Incoming energy and water and waste production in house is allocated equally among all products through mass allocation. Allocation in upstream processes is used by default in ecoinvent v3.9.1.

Data quality:

The data quality complies with the guidelines for the use of generic and specific data according to EN 15804 and ISO 14044. The data used is representative of temporal, geographical and technological conditions.

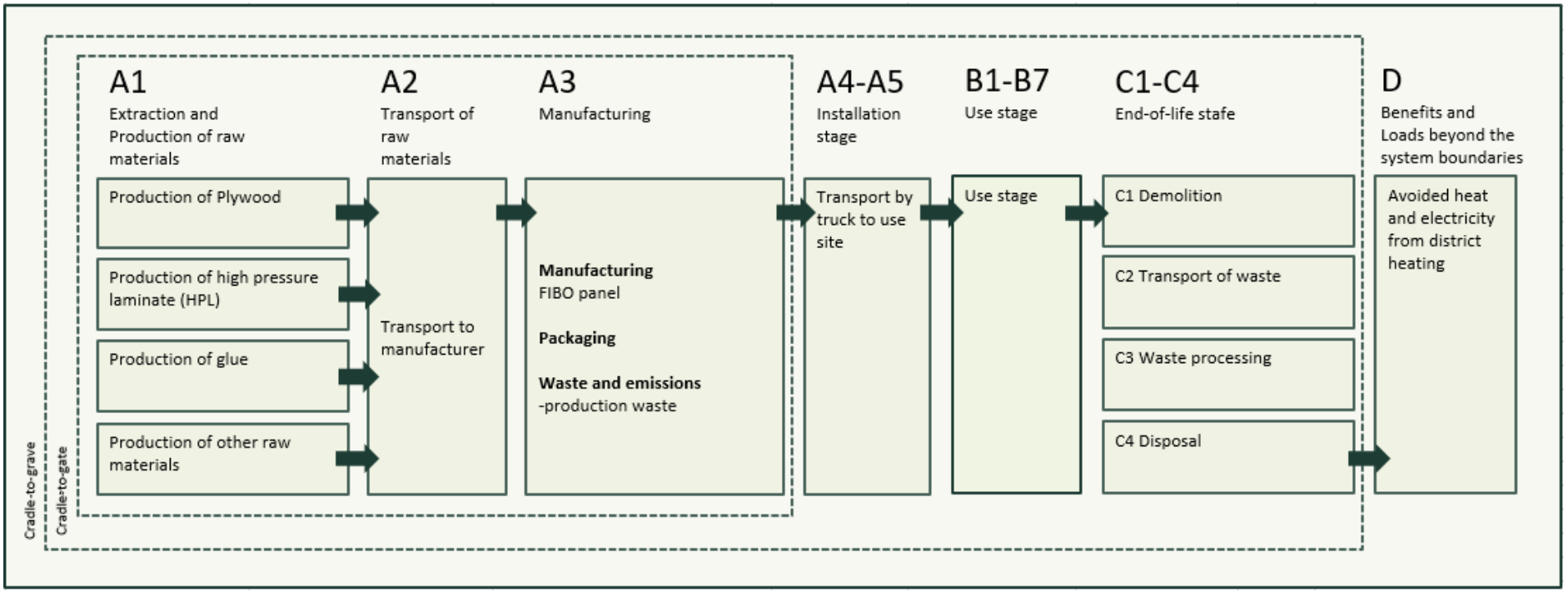
Manufacturing data is collected in 2024 and is based on average data for 2023. Data for exported energy from waste processing are based on Statistics Norway and are representative for 2022. Background data are from ecoinvent v3.9.1 "Allocation cut-off by classification" but adjusted to improve representativeness. Modelling and LCA calculations are performed with SimaPro version 9.5.0.1.

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Assembly stage		Use stage							End of life stage				Benefits & loads beyond system boundary
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	X	MND	X	MND	MND	MND	X	X	X	X	X

System boundary:

A flow chart with the system boundaries according to the modular approach is shown below.



LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

This declaration is based on a "cradle to gate with options, modules C1-C4 and module D" assessment. The production stage (A1-A3) includes production at the factory in Lyngdal, Norway. The products are utilized in different markets, and therefore two scenarios are included. A4a includes transport to a Norwegian use site, while A4b includes transport to a European market.

The installation and use of the wall panels is included. The scenario for installation (A5) includes waste treatment of packaging, energy use during installation, wastage of material during installation and surface treatment for products. Maintenance (B2) includes the washing and repair of the sealant, while the replacement (B4) includes the expected number of replacements during the building lifetime (60 years). Module B1, B3 and B5-B7 are not included as no activities are relevant. The end-of-life stage (C1-C4) is based on a Norwegian market.

A4a - Transport from production place to assembly/user in a Norwegian market

Transport from production place to assembly/user (A4a)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy consumption	Unit	Value
Truck (EURO6)	50 %	430	0.33	l/km	141.9

Transport to building site in Norway is based on a scenario with 400 km transport from the factory to a builders' merchant in Oslo and then an additional 30 km to a building site.

A4b - Transport from production place to assembly/user in a European market

Transport from production place to assembly/user (A4b)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy consumption	Unit	Value
Truck (EURO6)	50 %	1188	0.33	l/km	392.0
Boat (ferry)	-	143	-	-	-

Transport to a building site in Europe is based on a scenario to Brussels, the capital in Belgium, with truck and boat transport from the factory directly to the building site.

Assembly (A5)

	Unit	Value
Sealant	kg	0.027
Aluminium profile	kg	0.018
Water consumption	m3	0
Electricity consumption	kWh	0.0028
Other energy carriers	MJ	0
Material loss	kg	0.758
Output materials from waste treatment	kg	0.25

The assembly at building site includes 10 % product wastage and 1 MJ energy per cubic meter for lifting. Waste management of packaging and product wastage is included. In addition, the installation requires sealant and an aluminium profile.

Maintenance (B2)

	Unit	Value
Maintenance cycle, sealant	year	3
Sealant, total for 3 years	mL	50
Detergent, per year	mL	5
Water consumption	Liter	0.245

Visible sealant is expected to be checked for damage annually. These areas are assumed to require repair during the service life. Examples of such areas are shower wardrobes in indoor swimming pools, hotels etc. If the sealant is required to be removed and replaced by new sealant it is assumed a consumption of 50 mL per square meter of wall panel. In the EPD calculations it is assumed a scenario where the sealant is replaced every 3rd year (extreme use). In addition, it is assumed that visible sealant in wet areas is cleaned with chlorine water every other month to remove skin and soap residue and to prevent fungal growth on the sealant. These requirements applies to both private and public buildings.

Replacement (B4)

	Unit	Value
Replacement cycle	year	30

According to the manufacturer the service life of the wall panels is 30 years. During the service life of the building it is required to replace the wall panels one time. With good maintenance of sealant in profiles, the service life of the panels can be longer.

End of Life (C1, C3, C4)

	Unit	Value
Hazardous waste disposed	kg	0
Collected as mixed construction waste	kg	0
Reuse	kg	0
Recycling	kg	0
Incineration with energy recovery	kg	7.58
To landfill	kg	0

Wall panels are collected as mixed construction waste at building sites and treated with incineration with energy recovery. Ash from incineration is disposed in landfill.

Transport to waste processing (C2)

Transport from production place to assembly/user (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy consumption	Unit	Value
Truck	43	85	0,03	l/tkm	0,28

The transport of wood waste is based on an average distance of 85 km for Norway (Raadal et al., 2009).

Benefits and loads beyond the system boundaries (D)

Benefits and loads beyond the system boundaries (D)	Unit	Value
Substitution of electricity, in Norway	MJ	6,0
Substitution of thermal energy, district heating, in Norway	MJ	183,6
Substitution of raw materials	kg	0

The benefits of exported energy from energy recovery in a treatment facility is calculated with substitution of Norwegian electricity market mix and Norwegian district heating mix (SSB 2022). Conversion factors for efficiencies and losses from waste to delivered energy are included.

LCA: Results

The LCA results show environmental impacts, resource use and outflows calculated according to EN 15804:2012+A2:2019. The results are per declared unit as described on page 2. These main results are shown with a location-based approach, and the additional section includes the results with electricity based on guarantees of origin.

Core environmental impact indicators

Indicator	Unit	A1-A3	A4a	A4b	A5a	A5b	B2
GWP - total	kg CO2 eq	-4,40E+00	2,37E-01	7,92E-01	2,52E+00	2,58E+00	9,60E+00
GWP - fossil	kg CO2 eq	6,90E+00	2,37E-01	7,91E-01	1,86E+00	1,91E+00	8,66E+00
GWP - biogenic	kg CO2 eq	-1,14E+01	1,13E-04	3,43E-04	6,59E-01	6,59E-01	7,55E-02
GWP - luluc	kg CO2 eq	6,34E-02	1,09E-04	3,95E-04	6,81E-03	6,84E-03	8,62E-01
ODP	kg CFC11 eq	2,37E-07	5,27E-09	1,66E-08	3,08E-08	3,19E-08	3,47E-08
AP	molc H+ eq	4,48E-02	6,37E-04	5,79E-03	8,15E-03	8,67E-03	2,81E-02
EP- freshwater	kg P eq	9,70E-04	2,10E-06	6,29E-06	1,14E-04	1,14E-04	9,05E-03
EP -marine	kg N eq	1,37E-02	1,80E-04	1,52E-03	2,16E-03	2,30E-03	1,49E-02
EP - terrestrial	molc N eq	1,50E-01	1,90E-03	1,65E-02	2,31E-02	2,46E-02	1,05E-01
POCP	kg NMVOC eq	4,77E-02	1,07E-03	5,99E-03	7,27E-03	7,76E-03	2,78E-02
ADP-M&M[2]	kg Sb-Eq	3,68E-05	5,28E-07	1,58E-06	4,90E-06	5,01E-06	1,72E-05
ADP-fossil[2]	MJ	1,27E+02	3,63E+00	1,17E+01	2,09E+01	2,17E+01	1,60E+02
WDP[2]	m^3	4,39E+00	1,85E-02	5,45E-02	5,06E-01	5,10E-01	8,52E+00

Indicator	Unit	B4	C1	C2	C3	C4	D
GWP - total	kg CO2 eq	1,12E+01	9,98E-05	9,77E-02	1,27E+01	0,00E+00	-1,32E+00
GWP - fossil	kg CO2 eq	9,41E+00	9,72E-05	9,77E-02	3,09E-01	0,00E+00	-1,26E+00
GWP - biogenic	kg CO2 eq	1,68E+00	1,93E-06	4,19E-05	1,24E+01	0,00E+00	-5,82E-02
GWP - luluc	kg CO2 eq	7,04E-02	6,39E-07	4,78E-05	3,90E-05	0,00E+00	-4,82E-03
ODP	kg CFC11 eq	2,78E-07	2,80E-12	2,11E-09	3,02E-09	0,00E+00	-2,75E-08
AP	molc H+ eq	5,67E-02	1,02E-06	2,18E-04	2,85E-03	0,00E+00	-1,29E-02
EP- freshwater	kg P eq	1,11E-03	6,50E-09	7,97E-07	2,57E-05	0,00E+00	-6,83E-05
EP -marine	kg N eq	1,80E-02	9,54E-08	5,50E-05	1,84E-03	0,00E+00	-4,68E-03
EP - terrestrial	molc N eq	1,90E-01	1,24E-06	5,75E-04	1,49E-02	0,00E+00	-5,33E-02
POCP	kg NMVOC eq	6,12E-02	3,65E-07	3,44E-04	4,81E-03	0,00E+00	-1,45E-02
ADP-M&M[2]	kg Sb-Eq	4,27E-05	1,07E-08	3,04E-07	1,58E-07	0,00E+00	-2,30E-05
ADP-fossil[2]	MJ	1,54E+02	1,85E-03	1,39E+00	7,03E-01	0,00E+00	-1,72E+01
WDP[2]	m^3	4,93E+00	8,26E-05	5,94E-03	1,51E-02	0,00E+00	-2,71E-01

GWP-total: *Global Warming Potential;* ***GWP-fossil:*** *Global Warming Potential fossil fuels;* ***GWP-biogenic:*** *Global Warming Potential biogenic;* ***GWP-LULUC:*** *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; See "additional Norwegian requirements" for indicator given as PO4 eq.* ***EP-marine:*** *Eutrophication potential, fraction of nutrients reaching freshwater end compartment;* ***EP-terrestrial:*** *Eutrophication potential, Accumulated Exceedance;* ***POCP****: Formation potential of tropospheric ozone;* ***ADP-M&M****: Abiotic depletion potential for non-fossil resources (minerals and metals);* ***ADP-fossil:*** *Abiotic depletion potential for fossil resources;* ***WDP:*** *Water deprivation potential, deprivation weighted water counsumption*

Reading example: 9,0 E-03 = 9,0*10-3 = 0,009

Additional environmental impact indicators

Indicator	Unit	A1-A3	A4a	A4b	A5a	A5b	B2
PM	Disease incidence	5,46E-07	2,51E-08	7,30E-08	9,77E-08	1,02E-07	4,48E-07
IRP[1]	kBq U235 eq.	1,93E-01	2,02E-03	5,89E-03	2,55E-02	2,59E-02	1,68E-02
ETP-fw[2]	CTUe	3,13E+01	2,03E+00	6,46E+00	6,95E+00	7,40E+00	9,59E+01
HTP-c[2]	CTUh	2,65E-08	9,79E-11	3,25E-10	3,24E-09	3,26E-09	6,73E-09
HTP-nc[2]	CTUh	9,08E-08	3,98E-09	1,18E-08	2,44E-08	2,52E-08	6,54E-08
SQP[2]	Dimensionless	4,82E+02	5,13E+00	1,43E+01	5,03E+01	5,12E+01	5,05E+01

Indicator	Unit	B4	C1	C2	C3	C4	D
PM	Disease incidence	8,56E-07	5,71E-12	5,96E-09	1,82E-07	0,00E+00	-8,96E-07
IRP[1]	kBq U235 eq.	2,22E-01	3,74E-05	7,30E-04	6,81E-04	0,00E+00	-1,06E-01
ETP-fw[2]	CTUe	5,92E+01	1,14E-03	7,35E-01	1,81E+01	0,00E+00	-1,03E+01
HTP-c[2]	CTUh	3,58E-08	2,47E-13	4,31E-11	5,93E-09	0,00E+00	-1,70E-09
HTP-nc[2]	CTUh	1,61E-07	1,16E-11	1,24E-09	4,02E-08	0,00E+00	-8,36E-08
SQP[2]	Dimensionless	5,39E+02	8,77E-04	1,04E+00	5,78E-01	0,00E+00	-3,77E+02

PM: *Particulate matter emissions;* ***IRP:*** *Ionising radiation, human health;* ***ETP-fw:*** *Ecotoxicity (freshwater);* ***ETP-c:*** *Human toxicity, cancer effects;* ***HTP-nc:*** *Human toxicity, non-cancer effects;* ***SQP:*** *Land use related impacts / soil quality*

[1] 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.

[2] The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

Resource use

Parameter	Unit	A1-A3	A4a	A4b	A5a	A5b	B2
RPEE	MJ	6,53E+01	6,04E-02	1,77E-01	7,09E+00	7,10E+00	3,41E+01
RPEM	MJ	2,73E+02	0,00E+00	0,00E+00	2,73E+01	2,73E+01	8,48E-01
TPE	MJ	3,40E+02	6,04E-02	1,77E-01	3,46E+01	3,46E+01	3,49E+01
NRPE	MJ	1,26E+02	3,63E+00	1,17E+01	2,02E+01	2,10E+01	1,30E+02
NRPM	MJ	1,33E+00	0,00E+00	0,00E+00	7,54E-01	7,54E-01	3,19E+01
TRPE	MJ	1,27E+02	3,63E+00	1,17E+01	2,09E+01	2,17E+01	1,61E+02
SM	kg	0,00E+00	0,00E+00	0,00E+00	3,90E-08	3,90E-08	0,00E+00
RSF	MJ	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
W	m^3	1,90E-01	5,89E-04	1,74E-03	2,17E-02	2,18E-02	2,35E-01

Parameter	Unit	B4	C1	C2	C3	C4	D
RPEE	MJ	7,25E+01	1,14E-02	2,23E-02	2,87E-02	0,00E+00	-1,07E+02
RPEM	MJ	3,00E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TPE	MJ	3,75E+02	1,14E-02	2,23E-02	2,87E-02	0,00E+00	-1,07E+02
NRPE	MJ	1,52E+02	1,85E-03	1,39E+00	7,03E-01	0,00E+00	-1,72E+01
NRPM	MJ	2,08E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TRPE	MJ	1,54E+02	1,85E-03	1,39E+00	7,03E-01	0,00E+00	-1,72E+01
SM	kg	3,90E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	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
W	m^3	2,16E-01	8,06E-05	1,97E-04	2,92E-03	0,00E+00	-1,97E-01

RPEE *Renewable primary energy resources used as energy carrier;* ***RPEM*** *Renewable primary energy resources used as raw materials;* ***TPE*** *Total use of renewable primary energy resources;* ***NRPE*** *Nonrenewable primary energy resources used as energy carrier;* ***NRPM*** *Nonrenewable primary energy resources used as materials;* ***TRPE*** *Total use of non-renewable primary energy resources;* ***SM*** *Use of secondary materials;* ***RSF*** *Use of renewable secondary fuels;* ***NRSF*** *Use of non-renewable secondary fuels;* ***W*** *Use of net fresh water.*

End of life – Waste

Parameter	Unit	A1-A3	A4a	A4b	A5a	A5b	B2
HW	kg	2,07E-02	1,07E-04	3,16E-04	2,24E-01	2,24E-01	8,99E-03
NHW	kg	1,34E+00	4,50E-01	1,25E+00	3,33E-01	4,13E-01	6,15E-01
RW	kg	1,74E-04	1,28E-06	3,71E-06	8,48E-05	8,51E-05	3,40E-03

Parameter	Unit	B4	C1	C2	C3	C4	D
HW	kg	2,91E-01	3,88E-07	3,62E-05	4,61E-02	0,00E+00	-9,69E-03
NHW	kg	2,26E+00	8,06E-05	8,76E-02	3,98E-02	0,00E+00	-3,72E-01
RW	kg	2,61E-04	1,71E-08	4,75E-07	4,35E-07	0,00E+00	-5,13E-05

HW *Hazardous waste disposed;* ***NHW*** *Non-hazardous waste disposed;* ***RW*** *Radioactive waste disposed.*

End of life – output flow

Parameter	Unit	A1-A3	A4a	A4b	A5a	A5b	B2
CR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	2,56E+00	0,00E+00	0,00E+00	1,35E+00	1,35E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	4,01E-01	4,01E-01	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	1,22E+01	1,22E+01	0,00E+00

Parameter	Unit	B4	C1	C2	C3	C4	D
CR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	3,91E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	3,01E+00	0,00E+00	0,00E+00	2,61E+00	0,00E+00	0,00E+00
ETE	MJ	9,18E+01	0,00E+00	0,00E+00	7,96E+01	0,00E+00	0,00E+00

CR *Components for reuse;* ***MR*** *Materials for recycling;* ***MER*** *Materials for energy recovery;* ***EEE*** *Exported electric energy;* ***ETE*** *Exported thermal energy.*

Information describing the biogenic carbon content at the factory gate

Biogenic carbon content	Unit	Value
Biogenic carbon content in product	kg C	3,18
Biogenic carbon content in the accompanying packaging	kg C	0,15

The uptake of biogenic carbon dioxide in the product in module A1-A3 is 11,42 kg CO2 per declared unit. The same amount is released back to air in module C3 during incineration. Biogenic carbon stored in packaging is released to air when the waste packaging is incinerated in A5.

Additional requirements

Location based electricity mix from the use of electricity in manufacturing

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing prosess (foreground/core) per functional unit. This is used for the main results in this EPD.

National electricity grid	Data source	Foreground / core [kWh]	GWP_{total} [kg CO2 -eq/kWh]	SUM [kg CO2 -eq]
Electricity, low voltage {NO}| market for electricity, low voltage | Cut-off, U	ecoinvent	1,91	0,039	0,074

Guarantees of origin from the use of electricity in the manufacturing phase

Where guarantees of origin is applied instead of national production mix – the electricity for the manufacturing process (A3) shall be stated clearly in the EPD per functional unit. The guarantee of origin utilized in this EPD is provided by Å Entelios and 100% of hydro power is used. The declaration is valid for 2024. Contact the EPD-owner to get more information on the guarentee of origin.

Electricity source	Foreground / core [kWh]	GWP_{total} [kg CO2 -eq/kWh]	SUM [kgCO2 -eq]
Guarantee of origin electricity used in the foreground	1,91	0,019	0,037
Residual mix electricity used in the foreground	0	0,521	0

The environmental impact when using the marked based approach is presented in the following table.

Indicator	**Unit**	**A1-A3**
GWP - total	kg CO2 eq	-4,43
GWP - fossil	kg CO2 eq	6,87
GWP - biogenic	kg CO2 eq	-11,36
GWP - luluc	kg CO2 eq	0,06

Additional environmental impact indicators required for construction products

In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Parameter	Unit	**A1-A3**	**A4a**	**A4b**	**A5a**	**A5b**	**B2**
GWP-IOBC	kg	7,03E+00	2,37E-01	7,92E-01	2,00E+00	2,05E+00	9,60E+00

Parameter	Unit	B4	C1	C2	C3	C4	D
GWP-IOBC	kg	1,12E+01	9,98E-05	9,77E-02	1,80E+00	0,00E+00	-1,32E+00

GWP-IOBC *Global warming potential calculated according to the principle of instantaneous oxidation.*

Hazardous substances

The declaration is based upon reference to threshold values and/or test results and/or material safety data sheets provided to EPD verifiers. Documentation available upon request to EPD owner.

- ■ The product contains no substances given by the REACH Candidate list.
- □ The product contains substances given by the REACH Candidate list that are less than 0,1 % by weight.
- □ The product contains dangerous substances, more then 0,1% by weight, given by the REACH Candidate List, see table.
- □ The product is classified as hazardous waste, see table.

Indoor environment

The product meets the requirements for low emissions.

The product meets the requirements for low emissions, M1 (Rise, 2019). See table below for test results. Sealant FIBOSEAL meets the requirements according to EC 1 Plus (GEV, 2024).

Compound	Requirement M1 (mg/m²h)	Test results (mg/m²h)	Pass / Fail
TVOC	< 0,2	0,013	PASS
Formaldehyde	< 0,05	0,028	PASS
CMR 1A+1B	< 0,005	< 0,001	PASS
Ammonia	< 0,03	not measured	-
Odour	≥ 0,0	not measured	-

Carbon footprint

While a carbon footprint analysis has not been conducted for the product separately, the results section does include an evaluation of Global Warming Potential (GWP) with such an analysis. The GWP total results presented in this EPD document represents the carbon footprint of the product studied

Bibliography

ISO 14025:2010	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14044:2006	Environmental management - Life cycle assessment - Requirements and guidelines
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
ISO 21930:2007	Sustainability in building construction - Environmental declaration of building products
Ecoinvent v3.9	Swiss Centre of Life Cycle Inventories. https://www.ecoinvent.org/
SimaPro	LCA software, developed by PRé Sustainability https://simapro.com/
NPCR 010 2022 ver. 2.0	Part B for building boards
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