epd-norway
Global Program Operator

Environmental Product Declaration

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

Isover Skalmursskiva 32

Owner of the declaration:
Saint-Gobain Sweden AB, Isover

Product name:
Skalmursskiva 32

Functional unit:
1 m^2 of product with a thermal resistance of 1 $K.m^2.K/W$ and a thickness of 32 mm, with a reference service life of 60 years.

Product category /PCR:
Core PCR EN 15804 :2012+A2:2019
NPCR 012:2022 Part B for thermal insulation products

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-11646-11594

Registration number:
NEPD-11646-11594

Version 2

Issue date:

08.07.2025

Valid to:

08.07.2030

The Norwegian
EPD Foundation

General information

Product:
Isover Skalmursskiva 32

Program operator:
The Norwegian EPD Foundation
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Declaration number:
NEPD-11646-11594

This declaration is based on Product Category Rules:
Core PCR EN 15804 :2012+A2:2019
NPCR 012:2022 Part B for thermal insulation products

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 m^2 of product with a thermal resistance of 1 $K.m^2.K/W$ and a thickness of 32 mm

Declared unit with option:
Cradle to grave and module D (A + B + C + D).

Functional unit:
1 m^2 of product with a thermal resistance of 1 $K.m^2.K/W$ and a thickness of 32 mm, with a reference service life of 60 years

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

internal ☐ external ☒

Martin Erlandsson, CarbonZero
Independent verifier approved by EPD Norway

Owner of the declaration:
Saint-Gobain Sweden AB, ISOVER
Contact person: Ola Lindborg
e-mail: Ola.Lindborg@saint-gobain.com

Manufacturer:
Saint-Gobain Sweden AB, ISOVER

Place of production:
Storgatan 29, 267 73 Billesholm, Sweden

Management system:
ISO 9001 (Certificate no. SE008631)
ISO 14001 (Certificate no. SE008526)
ISO 50001 (Certificate no. SE0085516)

Organisation no:
556241-2592

Revision date:
08.07.2025

Valid to:
08.07.2030

Year of study:
2023

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:
Quentin Lamache (Saint-Gobain Nordic) and Saint-Gobain LCA central team, using GaBi version 10.
Company-specific data has been verified by Ola Lindborg, Katarina Edlund and Quentin Lamache Saint-Gobain Sweden AB, ISOVER.

Approved

Manager of EPD Norway

Product

Product description:

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 m² of glass wool with a thermal resistance of 1 K.m².K/W of Skalmursskiva 32. To calculate the impact of the range of commercial thicknesses between 50 mm and 200 mm, see the table “Conversion to mass and to specific thicknesses" in additional information section.

This EPD applies for one specific product from one single plant in Saint-Gobain Sweden.

UN CPC CODE: 37990 Non-metallic mineral products n.e.c. (including mineral wool, expanded mineral materials, worked mica, articles of mica, non-electrical articles of graphite or other carbon and articles of peat)

For more information: https://www.isover.se/produkter/isover-skalmursskiva-32

Product specification:

Description of the main components and/or materials for 1 m² of Isover Skalmursskiva 32 with a thermal resistance of 1 m².K/W, and a thickness of 32 mm.

Materials	Weight (%)
Mineral materials	30 – 40
Recycled glass (external cullet)	60 – 70
Binder	5 – 10
Additives	< 0,5
Sum	**100**
Packaging	**Weight (kg)**
LDPE (bag + stretch film)	0,0251
Wooden pallet	0,106
Other packaging	<0,001

Technical data:

For a thickness of 32 mm.

Parameter	Value	Unit
Thermal resistance	1	m²·K/W
Thermal conductivity	0,032	W/(m·K)
Reaction to fire	A1	
Density	30	kg/m3
Quantity for 1 m2 of product	0,96	kg
Product used for the Installation	none	m²·K/W

Market:

Isover Skalmursskiva 32 is manufactured and sold in Sweden. It can also be distributed to, and sold in, other countries like Norway, Denmark and Finland.

Reference service life, product:

The reference service life of the product is similar to the service life of the building.

Reference service life, building:

60 years.

Additional technical information

This EPD® includes a range of thicknesses between 50 mm and 200 mm by applying a conversion factor. All the results in the table of this EPD® refer to Isover Skalmursskiva 32 with a thickness of 32 mm, for a functional unit of 1 m² with a thermal resistance equals to 1 m² K/W.

In the table below, the main thicknesses of the product are listed. To convert the results of all indicators of all modules to other thicknesses, the results expressed in this EPD must be multiplied by its corresponding conversion factor in the table below. Conversion factors of thicknesses not listed below can be calculated by interpolating using values of the table below.

Also, a conversion to mass (kg) is given to convert the results per 1kg of product.

Product			Multiplication factor	Conversion factor to mass
GTIN	Thickness (mm)	Thermal resistance	GWP-IOBC / GWP-GHG, GWP-fossil and GWP-total	
-	32	1,00	-	1,042
7392979167307	50	1,55	1,00	-
7392979167321	80	2,50	1,60	-
7392979167345	100	3,10	2,00	-
7392979167369	150	4,65	3,04	-
7392979220279	170	5,30	3,40	-
7392979220194	200	6,25	4,00	-

LCA: Calculation rules

Parameter	Value / Description
Type of EPD	Cradle to grave and module D
Functional unit	Providing a thermal insulation on 1 m² of product with a thermal resistance of 1 K.m².K/W and a thickness of 32 mm, with a reference service life of 60 years
System boundaries	Cradle to grave and module D (A + B + C + D)
Reference service life (RSL)	The Reference Service Life (RSL) of the insulation product is 60 years, provided that the product is installed correct into the building. This 60-year value is the amount of time that we recommend our products last for without refurbishment and corresponds to standard building design life.
Cut-off rules	All data is available, no cut-off rules has been applied. In the case that there is not enough information, the process energy and materials representing less than 1% of the whole energy and mass used can be excluded (if they do not cause significant impacts). The addition of all the inputs and outputs excluded cannot be bigger than the 5% of the whole mass and energy used, as well of the emissions to environment occurred. Flows related to human activities such as employee transport are excluded. The construction of plants, production of machines and transportation systems are excluded since the related flows are supposed to be negligible compared to the production of the building product when compared at these systems lifetime level.
Allocations	Allocation has been avoided when possible and when not possible a mass allocation has been applied. The polluter pays and the modularity principles as well have been followed.
Geographical coverage And time period	Scope: Sweden, Norway, Denmark and Finland. Data is collected from 1 production site Billesholm located in Sweden. Data collected for the year 2023
Background data source	The databases Sphera 2023.2 and ecoinvent v.3.9.1
Software	Sphera LCA for experts (GaBi) 10

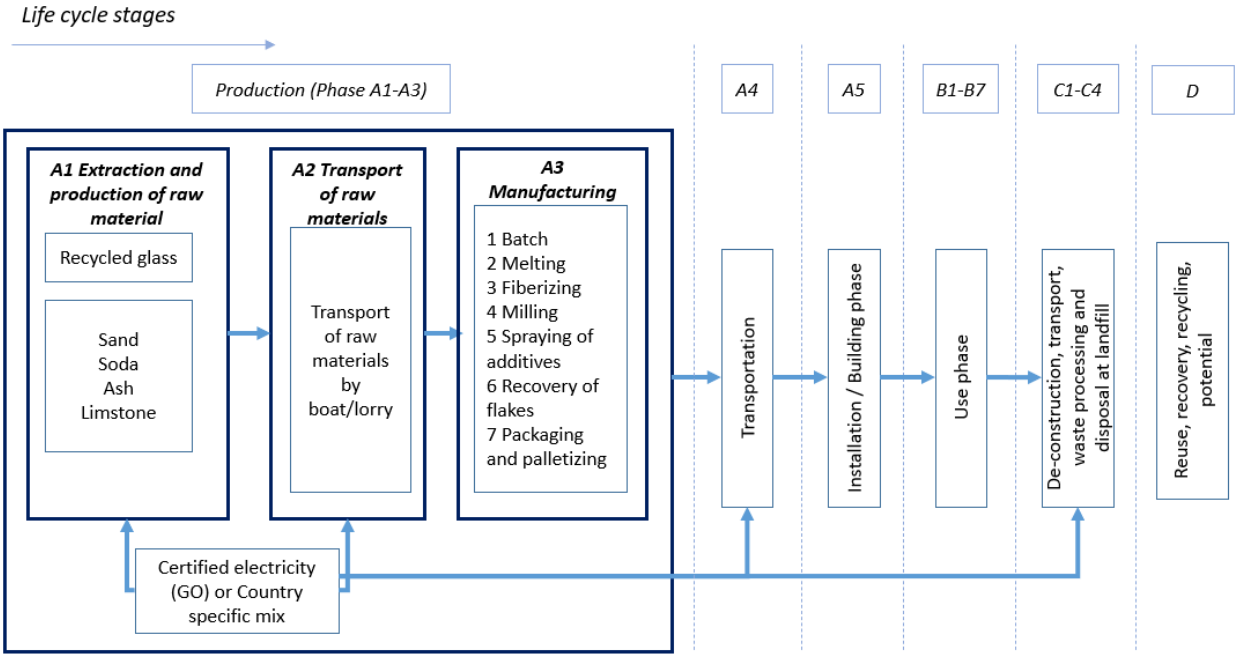
LCA: Scenarios and additional technical information

The following stages and modules have been included for this product.

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

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	X	X	X	X	X	X	X	X	X	X	X	X

System boundary:



Product stage (A1-A3)

A1, Raw materials supply
This module includes the extraction and transformation of raw materials.

A2, Transport to the manufacturer
This module includes the transportation of raw materials and packaging to the manufacturing site. The modelling includes road, ship and/or train transportations.

A3, Manufacturing
This module includes the manufacture of products such as (fusion, fiberizing, etc.) and the manufacture of packaging. The production of packaging material is considered at this stage. The processing of any waste arising from this stage is also included.

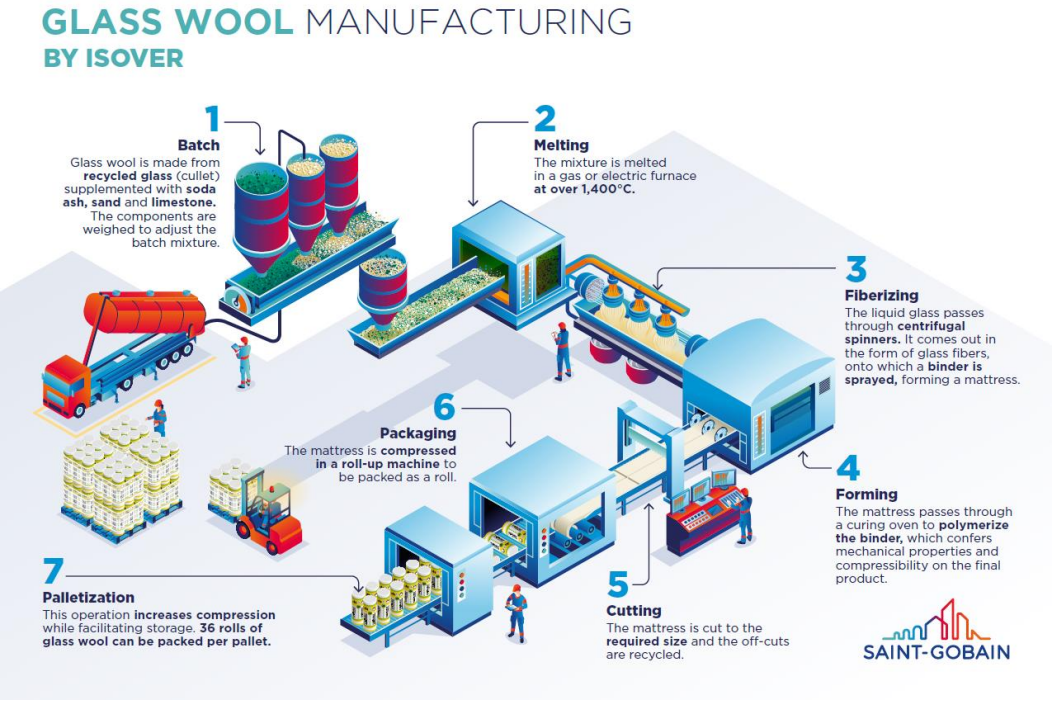
During the manufacturing process, electricity based on 100% renewable electricity bought with Guarantee of Origin (GO) has been used. The amount of electricity purchases with GO's correspond to 100% of the electricity consumed at the manufacturing site, leaving 0% to be covered by Sweden national grid mix.

During the manufacturing process, biogas bought with Guarantee of Origin (GO) has been used. The amount of biogas purchases with GO's correspond to 72% of the gas consumed at the manufacturing site, leaving the rest 28% as residual gas mix.

Guarantees of origin of energy used in the manufacturing phase

Parameter	Consumption covered (%)	Value, GWP total	Description
Electricity mix (GO's)	100 %	0,00458 kg CO_2 eq. / kWh	100% Nuclear power – RER from Sphera
Gas mix (GO's)	72 %	0,0573 kg CO_2 eq. / kWh	100% Biogas – RER from Sphera

Manufacturing process flow diagram



Manufacturing in detail:

Glass wool is made from high-temperature molten glass that is blown away using centrifugal force to form fine cotton-like fibers.
Then, a binder is sprayed on the material to form it, and the product is heated in an oven. Hereafter, the product is cut to size and packed.

Construction process stage (A4-A5)

A4, Transport from production place to building site
This module includes transport from the production gate to the building site. Transport is calculated based on a scenario with the parameters described in the following table.

Parameter	Value / Description
Fuel type and consumption of vehicle or vehicle type used for transport e.g., long distance truck, boat, etc.	Freight truck, maximum load weight of 27 t and consumption of 0,38 liters diesel per km. Real 6,6 t load.
Distance	325 km by truck, 140 km by rail
Capacity utilization (including empty returns)	19% in weight (30% empty returns)
Bulk density of transported products	53,40 kg/m^3

A5, Installation in the building
This module includes the installation of the product manually and no additional accessories, nor energy are considered.

Parameter	Value / Description
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	2% for product 100% for packaging
Output materials (specified by type) as results of waste processing at the building site e.g., of collection for recycling, for energy recovering, disposal (specified by route)	Product waste: 0,0192kg, 100% landfill LDPE (bag + stretch film): 0,0251kg, 90% energy recovery + 10% recycling Wooden pallet: 0,106kg, 50% recycling + 50% energy recovery Other packaging: <0,001kg, 100% landfill
Distance to waste treatment facilities	50 km to landfill by truck 50 km to recycling by truck 50 km to incineration with energy recovery by truck
Direct emissions to ambient air, soil, and water	None

The transport of waste is modelled as in C2.

Use stage (B1-B7)

The use stage is divided into the following modules:
- **B1:** Use
- **B2:** Maintenance
- **B3:** Repair
- **B4:** Replacement
- **B5:** Refurbishment
- **B6:** Operational energy use
- **B7:** Operational water use

The product has a reference service life of 60 years. This assumes that the product will last in situ with no requirements for maintenance, repair, replacement, or refurbishment throughout this period. Therefore, it has no impact at this stage.

End of Life stage (C1-C4)

This stage includes the following modules:
- **C1:** The de-construction and/or dismantling of the product takes part of the demolition of the entire building.
- **C2:** Transport to waste processing.
- **C3:** Waste processing for reuse, recovery and/or recycling.
- **C4:** Waste disposal, including physical pre-treatment and site management.

Parameter	Value / Description
Energy for demolition	0,045 MJ/kg of product (diesel)
Collection process specified by type	The entire product 0,96 kg of glass wool is collected with mixed construction waste
Recovery system specified by type	There is no recovery, recycling or reuse of the product once it has reached its end-of-life phase.
Disposal specified by type	0,96 kg of product is landfilled
Assumption for scenario development (e.g., transportation)	The waste going to landfill will be transported by truck with 24 t payload, consuming 0,38 liters diesel per km. Transport distance to landfill: 50 km

Benefits and loads beyond the system boundaries (D)

There is inclusion of secondary materials in the product and packaging.
- 100% of product waste is considered landfilled.
- Reuse, recycling and/or incineration with energy recovery is considered for the packaging.

Therefore, benefits or loads reported on stage D are due to packaging.

LCA: Results

As specified in EN 15804:2012+A2:2019/AC:2021 and the Product Category Rules, the environmental impacts are declared and reported using the baseline characterization factors from the ILCD. Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant. Characterization factors of EN15804 are based on EF 3.1.

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

All emissions to air, water, and soil, and all materials and energy used have been included.

The results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity, noncancer and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets, in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological and geographical representativeness. Caution should be taken when using the results of these indicators for decision-making purposes.

Since this EPD includes module C, we strongly advise not to use the results of modules A1-A3 without considering the results of module C.

Results refer to a functional unit of 1 m^2 of glass wool with thermal resistance of 1 $K.m^2.K/W$ for a thickness of 32 mm. To obtain results with different commercial thicknesses and density, see additional technical information section (p.4).

Core environmental impact indicators

Characterization factors of EN15804 are based on EF 3.1.

Environmental indicators	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Climate Change (total) [kg CO2 eq.]	8,11E-01	6,62E-02	2,69E-01	0	0	0	0	0	0	0	4,29E-03	3,49E-03	0	1,92E-02	-1,04E-01
Climate Change (fossil) [kg CO2 eq.]	9,01E-01	6,54E-02	9,33E-02	0	0	0	0	0	0	0	4,29E-03	3,45E-03	0	1,42E-02	-1,04E-01
Climate Change (biogenic) [kg CO2 eq.]	-9,11E-02	1,76E-04	1,76E-01	0	0	0	0	0	0	0	5,41E-07	9,24E-06	0	4,98E-03	-1,98E-04
Climate Change (land use change) [kg CO2 eq.]	1,10E-03	6,02E-04	2,91E-05	0	0	0	0	0	0	0	4,82E-07	3,18E-05	0	4,48E-05	-1,21E-04
Ozone depletion [kg CFC-11 eq.]	1,39E-06	2,74E-11	2,78E-08	0	0	0	0	0	0	0	6,82E-11	4,47E-16	0	3,67E-14	-2,06E-09
Acidification terrestrial and freshwater [Mole of H+ eq.]	6,83E-03	9,73E-05	1,64E-04	0	0	0	0	0	0	0	3,97E-05	4,37E-06	0	1,02E-04	-3,97E-04
Eutrophication freshwater [kg P eq.]	1,12E-04	1,63E-06	2,38E-06	0	0	0	0	0	0	0	1,32E-07	1,26E-08	0	2,90E-08	-3,01E-05
Eutrophication marine [kg N eq.]	1,26E-03	3,50E-05	3,40E-05	0	0	0	0	0	0	0	1,84E-05	1,53E-06	0	2,64E-05	-7,57E-05
Eutrophication terrestrial [Mole of N eq.]	2,43E-02	4,02E-04	5,97E-04	0	0	0	0	0	0	0	2,00E-04	1,79E-05	0	2,91E-04	-7,57E-04
Photochemical ozone formation - human health [kg NMVOC eq.]	3,09E-03	8,62E-05	8,36E-05	0	0	0	0	0	0	0	5,93E-05	3,83E-06	0	7,98E-05	-2,59E-04
Resource use, mineral and metals [kg Sb eq.][1]	4,43E-05	7,20E-09	8,89E-07	0	0	0	0	0	0	0	1,50E-09	2,28E-10	0	6,66E-10	-4,95E-08
Resource use, energy carriers [MJ][1]	3,64E+01	9,17E-01	7,81E-01	0	0	0	0	0	0	0	5,60E-02	4,68E-02	0	1,92E-01	-1,40E+00
Water deprivation potential [m³ world equiv.][1]	5,02E-01	1,89E-03	2,66E-02	0	0	0	0	0	0	0	1,89E-04	4,15E-05	0	1,58E-03	-1,53E-02

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

[1] 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

Resources Use indicators	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Use of renewable primary energy (PERE) [MJ]	1,11E+01	6,87E-02	2,32E-01	0	0	0	0	0	0	0	3,20E-04	3,41E-03	0	3,13E-02	-1,03E-01
Primary energy resources used as raw materials (PERM) [MJ]	1,61E+00	0	-1,13E+00	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	1,27E+01	6,87E-02	-8,97E-01	0	0	0	0	0	0	0	3,20E-04	3,41E-03	0	3,13E-02	-1,03E-01
Use of non-renewable primary energy (PENRE) [MJ]	3,39E+01	9,19E-01	7,31E-01	0	0	0	0	0	0	0	5,60E-02	4,70E-02	0	1,92E-01	-1,40E+00
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	2,90E+00	0	-4,81E-01	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	3,68E+01	9,19E-01	2,50E-01	0	0	0	0	0	0	0	5,60E-02	4,70E-02	0	1,92E-01	-1,40E+00
Input of secondary material (SM) [kg]	6,54E-01	0	1,31E-02	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	4,93E-29	0	9,87E-31	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	5,80E-28	0	1,16E-29	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,43E-02	9,52E-05	6,75E-04	0	0	0	0	0	0	0	4,41E-06	3,73E-06	0	4,85E-05	-3,56E-04

End of life – Waste & output flow

Waste Category & Output Flows	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Hazardous waste disposed (HWD) [kg]	1,25E-05	4,45E-08	2,84E-07	0	0	0	0	0	0	0	3,78E-07	1,45E-13	0	4,18E-12	-4,21E-06
Non-hazardous waste disposed (NHWD) [kg]	3,94E-01	6,18E-04	3,04E-02	0	0	0	0	0	0	0	3,46E-04	7,16E-06	0	9,61E-01	-5,55E-02
Radioactive waste disposed (RWD) [kg]	7,57E-03	1,39E-06	1,53E-04	0	0	0	0	0	0	0	6,15E-09	8,79E-08	0	2,19E-06	-2,13E-06
Components for re-use (CRU) [kg]	0	0	5,43E-02	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	6,82E-03	0	5,70E-02	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	2,77E-01	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	4,96E-01	0	0	0	0	0	0	0	0	0	0	0	0

Additional environmental impact indicators required for construction products

	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE
Environmental indicators	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
GWP-IOBC / GWP-GHG [kg CO2 eq.][2]	9,79E-01	6,62E-02	9,59E-02	0	0	0	0	0	0	0	4,29E-03	3,50E-03	0	1,43E-02	-1,04E-01

Information describing the biogenic carbon content at the factory gate

	PRODUCT STAGE
Biogenic Carbon Content	**A1 / A2 / A3**
Biogenic carbon content in product [kg]	0
Biogenic carbon content in packaging [kg]	4,39E-02

Note: 1kg biogenic carbon is equivalent to 44/12 kg CO_2.

The packaging contains biogenic carbon due to the wooden pallet.

[2] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product or its packaging.

Additional requirements

Electricity information

Market-based approach is used in the manufacturing phase (A3) for electricity and gas that are covered by GOs. Therefore, the approach for the remaining quantity are location based electricity mix and gas mix.

The table below presents the location based mix for electricity:

Type of information	Description
Share of residual mix	0%
Location based electricity mix	National production mix, Sweden
Type of dataset	Cradle to gate from Sphera
Source	Dataset Sphera SE: Electricity grid mix
CO2 emission kg CO2 eq. / kWh	0,0616 kg CO2 eq. / kWh – Climate Change – total indicator

Note: Amount bought electricity to the core process is not reported as it is business sensitive and therefore confidential.

The table below presents the residual mix for gas:

Type of information	Description
Share of residual mix	28%
Location based conservative mix	Natural gas
Type of dataset	Cradle to gate from Sphera
Source	Dataset Sphera: Thermal energy from natural gas, RER
CO2 emission kg CO2 eq. / kWh	0,2415 kg CO2 eq. / kWh – Climate Change – total indicator

Note: Amount bought electricity to the core process is not reported as it is business sensitive and therefore confidential.

Hazardous substances

At the date of issue of this declaration, there is no “Substance of Very High Concern” (SVHC) in concentration above 0.1% by weight, and neither do their packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals).

The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.

Indoor environment

The product is intended for external use, there is therefore no QAI certificate.

Carbon footprint

The GWP-IOBC value can be found in previous tab of “Additional environmental impact indicators required for construction products” (p.14).

Additional information

Transport to other countries

The results of stage A4 presented in the tables above refers to Sweden. As the product is exported to other countries, additional sets of results for each country have been provided.

Country	Transport and distance
Norway	Truck (575 km)
Denmark	Truck (310 km)
Finland	Truck (955 km), Ship (125 km)

	Norway	Denmark	Finland
	A4 Transport	A4 Transport	A4 Transport
Environmental indicators			
Climate Change (total) [kg CO_2 eq.]	1,13E-01	6,11E-02	1,90E-01
Climate Change (fossil) [kg CO_2 eq.]	1,12E-01	6,04E-02	1,88E-01
Climate Change (biogenic) [kg CO_2 eq.]	2,96E-04	1,59E-04	4,92E-04
Climate Change (land use change) [kg CO_2 eq.]	1,05E-03	5,66E-04	1,74E-03
Ozone depletion [kg CFC-11 eq.]	9,92E-15	5,35E-15	1,66E-14
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,48E-04	8,01E-05	3,07E-04
Eutrophication freshwater [kg P eq.]	4,13E-07	2,23E-07	6,87E-07
Eutrophication marine [kg N eq.]	5,44E-05	2,93E-05	1,05E-04
Eutrophication terrestrial [Mole of N eq.]	6,34E-04	3,42E-04	1,21E-03
Photochemical ozone formation - human health [kg NMVOC eq.]	1,31E-04	7,08E-05	2,59E-04
Resource use, mineral and metals [kg Sb eq.]	7,36E-09	3,97E-09	1,22E-08
Resource use, energy carriers [MJ]	1,54E+00	8,31E-01	2,58E+00
Water deprivation potential [m^3 world equiv.]	1,31E-03	7,04E-04	2,17E-03
Resource Use Indicators			
Use of renewable primary energy (PERE) [MJ]	1,09E-01	5,88E-02	1,81E-01
Use of renewable primary energy resources used as raw materials (PERM) [MJ]	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	1,09E-01	5,88E-02	1,81E-01
Use of non-renewable primary energy (PENRE) [MJ]	1,55E+00	8,33E-01	2,59E+00
Non-renewable primary energy resources used as raw materials (PENRM) [MJ] [2]	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	1,55E+00	8,33E-01	2,59E+00
Input of secondary material (SM) [kg]	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	0	0	0
Use of net fresh water (FW) [m^3]	1,20E-04	6,48E-05	2,00E-04
Waste category & Output flows			
Hazardous waste disposed (HWD) [kg]	5,72E-12	3,08E-12	9,56E-12
Non-hazardous waste disposed (NHWD) [kg]	2,23E-04	1,20E-04	3,72E-04
Radioactive waste disposed (RWD) [kg]	2,00E-06	1,08E-06	3,34E-06
Components for re-use (CRU) [kg]	0	0	0
Materials for Recycling (MFR) [kg]	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0
Additional Indicator			
GWP-GHG / GWP-IOBC [kg CO_2 eq.]	1,13E-01	6,12E-02	1,90E-01

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epd-norway Global Program Operator	**Publisher** The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo Norway	tlf e-post: web	+47 23 08 80 00 post@epd-norge.no www.epd-norge.no
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