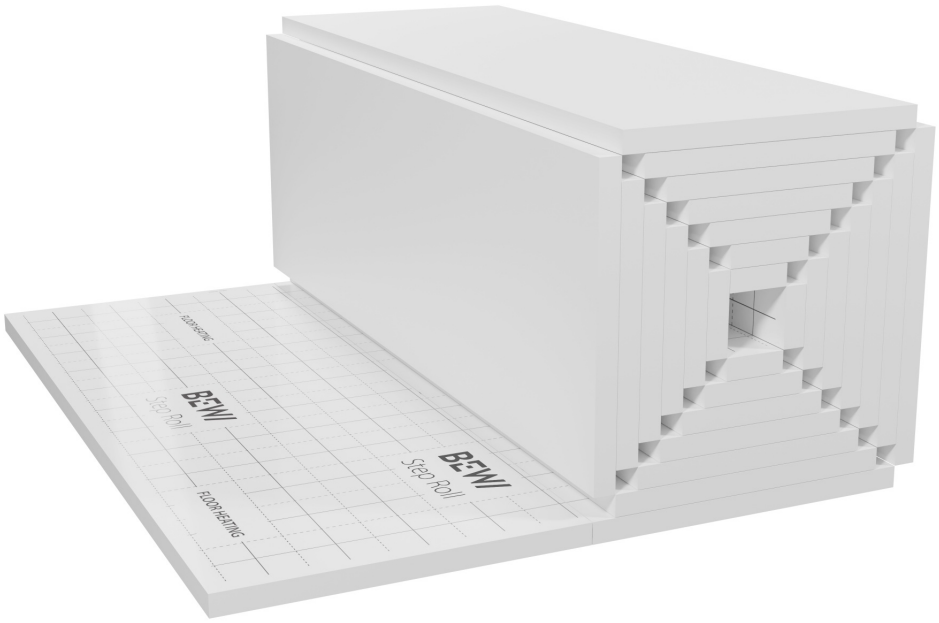
epd-global
Powered by EPD-Norway

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

BEWI Step Roll



BEWI

EPD-Global

Owner of the declaration:
BEWI ASA, Insulation and Construction

Product:
BEWI Step Roll

Declared unit:
1 m2

This declaration is based on Product Category Rules:
CEN Standard EN 15804:2012+A2:2019 serves as core PCR.
NPCR 012:2022 Part B for Thermal insulation products

Program operator:
EPD-Global

Declaration number:
NEPD-12946-14189

Issue date:
31.10.2025

Valid to:
31.10.2030

EPD software:
LCAno EPD generator ID: 930846

General information

Product

BEWI Step Roll

Owner of the declaration:

BEWI ASA, Insulation and Construction
Contact person: Marc Storm Andersen
Phone: +45 72157902
e-mail: marc.andersen@bewi.com

Program operator:

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Phone: +47 977 22 020
web: www.epd-global.com

Manufacturer:

BEWI Insulation Finland
Toravantie 18
38210 Sastamala, Finland

Declaration number:

NEPD-12946-14189

Place of production:

BEWI Sastamala Toravantie
Toravantie 18
38210 SASTAMALA, Finland

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR.
NPCR 012:2022 Part B for Thermal insulation products

Management system:

ISO 14001 og 9001 for all production sites

Statement of liability:

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

Organisation no:

925437948

Declared unit:

1 m2 BEWI Step Roll

Issue date:

31.10.2025

Declared unit with option:

A1, A2, A3, A4, A5, C1, C2, C3, C4, D

Valid to:

31.10.2030

Year of study:

2024

Functional unit:

The functional unit is 1 m2 of 30 mm thick BEWI Step Roll product with EPS density of 11,5 kg/m3 and it's weigth with frapping materials are 0,53

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804:2012+A2:2019 and seen in a building context.

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Global's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Global, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Global's General Programme Instructions for further information on EPD tools

Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD-Global. NEPDT97

Developer of EPD: Pirkka Ulmanen

Reviewer of company-specific input data and EPD: Mark Plate

Verification of EPD tool:

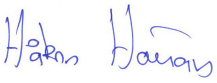
Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPD-Global's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Elisabet Amat, GREENIZE projects

(no signature required)

Approved:



Håkon Hauan, CEO EPD-Global

Product

Product description:

BEWI Step Roll impact sound insulation is designed for floating floors and intermediate floors. It is installed in the intermediate layer between the load-bearing structure and the surface slab, typically achieving an impact sound level of 40–50 dB.

The standard thicknesses of BEWI Step boards are 20 mm and 30 mm. They are suitable for floor structures with a design load of less than 5 kN/m².

Product specification

BEWI Step Roll impact sound insulation is manufactured by expanding EPS beads in a pre-expander, where they achieve their target density. After pre-expanding, the EPS beads are compressed to a large block using a mold, which is then cut into sheets with a hot wire saw. The sheet are compressed to the final size, making the product more flexible. After pressing on the sheet is glued PP foil and tape strip. The product is packaged into bundles depending on the thickness of the sheets.

Materials	kg	%
Glue	0.06	12.00
Plastic - Polystyrene expandable (EPS)	0.345	69.00
Polypropylene (PP)	0.095	19.00
Total	0.50	100.00

Packaging	kg	%
Packaging - EPS	0.00	10.76
Packaging - Paper tape	0.01	15.09
Packaging - Plastic	0.03	74.15
Total incl. packaging	0.54	100.00

Technical data:

CE marking: EPS insulation boards are CE certified according to SFS-EN 13163:2013 + A2:2016

Typical compressive strength: 20 kPa (EN 826)

Typical bending strength: 50 kPa (EN 12089)

Typical size: 20 x 1200 x 11360 mm (13,63 m2)(EN 822)
30 x 1200 x 7310 mm (8,77 m2)
40 x 1200 x 4840 mm (5,81 m2)

Typical thickness: 20 mm - 40 mm (EN 823)

Compressibility: < 3 mm

Typical lambda: 0,04 W/mK (EN 13134)

Fire classification: E (SFS-EN 13501-1)

Dynamic stiffness: 20 mm = < 20 MN/m3 (EN 13793)
> 20 mm = < 15 MN/m3

Market:

Finland

Reference service life, product

As in the construction where it is used.

Reference service life, building or construction works

As in the construction where it is used.

LCA: Calculation rules

Declared unit:

1 m2 BEWI Step Roll

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804+A2. 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.

Data quality:

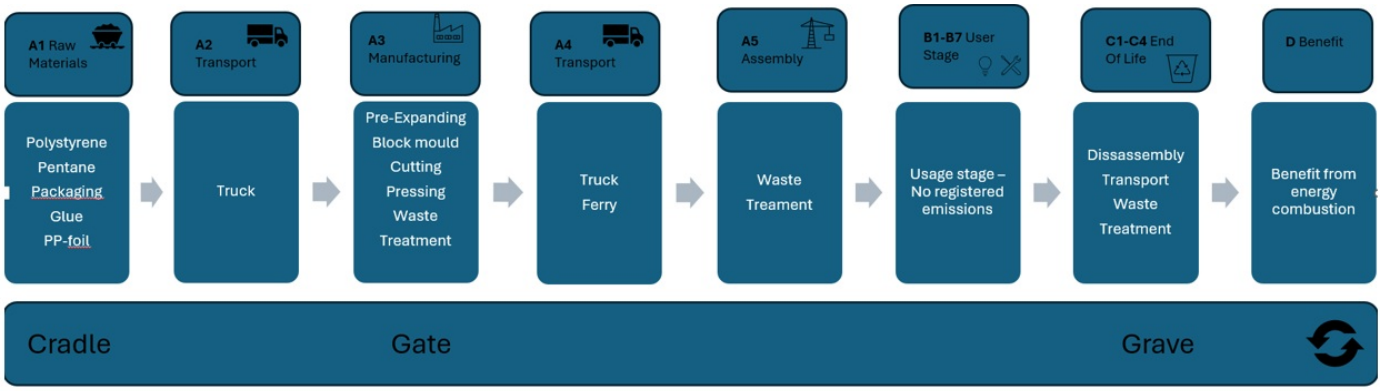
Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Materials	Source	Data quality	Year
Glue	Supplier	Specific	2023
Packaging - EPS	Plastics Europe + ecoinvent 3.6	European average.	2019
Packaging - Paper tape	ecoinvent 3.6	Database	2019
Packaging - Plastic	ecoinvent 3.6	Database	2019
Plastic - Polystyrene expandable (EPS)	Supplier Specific	EPD	2024
Polypropylene (PP)	ecoinvent 3.6	Database	2019

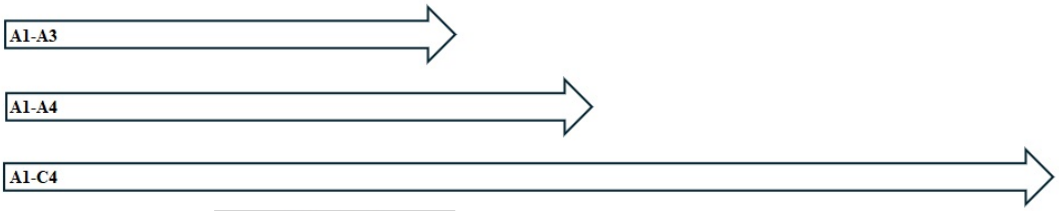
System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Construction installation stage		Use stage							End of life stage				Beyond the system boundaries
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	MND	MND	MND	MND	MND	MND	X	X	X	X	X

System boundary:



GWP - total results



	CO_2 eq/m^2		
Thickness	**A1-A3**	**A1-A4**	**A1-C4**
20 mm	1,019	1,0637	2,143
30 mm	1,3016	1,3163	2,869
40 mm	1,554	1,5687	3,595

Additional technical information:

LCA: Scenarios and additional technical information

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

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (kgkm)	36.7 %	170.00	0.043	l/tkm	7.31

Assembly (A5)	Unit	Value			
Waste, packaging, plastic to average treatment - A5 (inkl transport) (kg)	kg	0.03156			
Waste, packaging, paper and cardboard to average treatment - A5 (inkl transport) (kg)	kg	0.00561			

De-construction demolition (C1)	Unit	Value			
Waste treatment, 100% recycled PS, Insulation, Finland (kg)	kg	0.50			

Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 7.5-16 tonnes, EURO 6 (kgkm)	35.4 %	30.00	0.056	l/tkm	1.68

Waste processing (C3)	Unit	Value			
Waste, Polystyrene, incineration	kg	0.4575			
Recycling of 100% recycled PS	kg	0.02			

Disposal (C4)	Unit	Value			
Landfilling of ashes from incineration of PS	kg	0.001373			
Waste, inert waste, to landfill (kg)	kg	0.02			

Benefits and loads beyond the system boundaries (D)	Unit	Value			
substitution of electricity (MJ)	MJ	0.2659			
Substitution of thermal energy (MJ)	MJ	14.62			
Substitution of expandable polystyrene, EPS, granulate (kg)	kg	-0.48			

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact												
	Indicator	**Unit**	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	GWP-total	kg CO_2 -eq	1.22E+00	2.88E-02	4.89E-02	1.47E-02	2.59E-03	0.00E+00	3.41E-03	1.46E+00	2.35E-04	1.72E+00
	GWP-fossil	kg CO_2 -eq	1.20E+00	2.88E-02	4.77E-02	1.47E-02	2.59E-03	0.00E+00	3.40E-03	1.46E+00	2.35E-04	1.72E+00
	GWP-biogenic	kg CO_2 -eq	8.59E-03	1.21E-05	8.92E-04	6.09E-06	4.28E-07	0.00E+00	1.57E-06	1.01E-05	2.29E-07	1.18E-02
	GWP-luluc	kg CO_2 -eq	2.23E-02	9.51E-06	3.09E-04	5.24E-06	2.22E-07	0.00E+00	1.47E-06	1.59E-06	5.12E-08	-2.90E-03
	ODP	kg CFC11 -eq	1.68E-07	6.74E-09	5.13E-09	3.33E-09	1.69E-10	0.00E+00	7.47E-10	1.05E-09	7.00E-11	-6.17E-03
	AP	mol H+ -eq	3.82E-03	8.78E-05	3.17E-04	4.23E-05	3.51E-06	0.00E+00	9.78E-06	1.73E-04	1.71E-06	5.51E-03
	EP-FreshWater	kg P -eq	2.11E-04	2.30E-07	1.56E-06	1.18E-07	5.89E-09	0.00E+00	3.12E-08	1.03E-07	2.82E-09	2.42E-05
	EP-Marine	kg N -eq	9.09E-04	1.84E-05	6.41E-05	8.37E-06	2.96E-06	0.00E+00	1.85E-06	8.34E-05	6.20E-07	7.06E-04
	EP-Terrestial	mol N -eq	8.67E-03	2.05E-04	9.95E-04	9.36E-05	1.26E-05	0.00E+00	2.08E-05	8.93E-04	6.87E-06	7.60E-03
	POCP	kg NMVOC -eq	4.36E-03	7.96E-05	1.05E-02	3.59E-05	4.07E-06	0.00E+00	7.94E-06	2.14E-04	1.96E-06	4.72E-03
	ADP-minerals&metals[1]	kg Sb-eq	3.48E-05	6.54E-07	3.62E-07	4.07E-07	1.55E-08	0.00E+00	1.23E-07	4.51E-08	1.88E-09	-1.64E-07
	ADP-fossil[1]	MJ	3.99E+01	4.52E-01	8.24E-01	2.23E-01	1.16E-02	0.00E+00	5.08E-02	8.94E-02	5.16E-03	3.86E+01
	WDP[1]	m^3	2.73E+01	3.90E-01	4.04E+01	2.15E-01	3.80E-02	0.00E+00	6.08E-02	1.98E-01	3.45E-02	-2.61E+00

GWP-total = Global Warming Potential total; 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: 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

"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

Remarks to environmental impacts

Additional environmental impact indicators

Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	PM	Disease incidence	1.22E-07	2.21E-09	2.48E-09	9.01E-10	6.20E-11	0.00E+00	1.91E-10	7.31E-10	3.40E-11	1.56E-08
	IRP[2]	kgBq U235 -eq	3.41E-02	1.97E-03	1.82E-02	9.73E-04	5.20E-05	0.00E+00	2.22E-04	1.49E-04	2.37E-05	-6.39E-03
	ETP-fw[1]	CTUe	1.33E+02	3.33E-01	1.79E+00	1.65E-01	1.15E-02	0.00E+00	3.96E-02	2.16E-01	3.65E-03	7.03E-01
	HTP-c[1]	CTUh	9.54E-08	0.00E+00	3.10E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.10E-11	0.00E+00	2.50E-10
	HTP-nc[1]	CTUh	1.12E-07	3.41E-10	8.86E-10	1.80E-10	1.10E-11	0.00E+00	4.80E-11	2.42E-09	4.00E-12	-2.54E-09
	SQP[1]	dimensionless	6.91E+00	4.21E-01	5.33E+00	1.56E-01	1.88E-02	0.00E+00	3.02E-02	1.06E-02	1.92E-02	-8.02E+00

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"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
2. 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.

Resource use												
Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	PERE	MJ	1.94E+00	6.06E-03	1.29E+00	3.19E-03	2.81E-04	0.00E+00	8.65E-04	2.57E-03	1.99E-04	-6.47E+00
	PERM	MJ	4.36E-02	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
	PERT	MJ	1.98E+00	6.06E-03	1.29E+00	3.19E-03	2.81E-04	0.00E+00	8.65E-04	2.57E-03	1.99E-04	-6.47E+00
	PENRE	MJ	2.92E+01	4.52E-01	9.77E-01	2.23E-01	1.16E-02	0.00E+00	5.08E-02	8.94E-02	5.16E-03	3.86E+01
	PENRM	MJ	1.70E+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	0.00E+00
	PENRT	MJ	4.62E+01	4.52E-01	9.77E-01	2.23E-01	1.16E-02	0.00E+00	5.08E-02	8.94E-02	5.16E-03	3.86E+01
	SM	kg	5.14E-08	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
	RSF	MJ	6.07E-02	2.14E-04	2.65E-02	1.14E-04	7.52E-06	0.00E+00	3.12E-05	7.17E-05	4.29E-06	-6.74E-04
	NRSF	MJ	9.27E-03	7.44E-04	8.64E-03	4.07E-04	2.07E-05	0.00E+00	1.13E-04	0.00E+00	1.56E-04	-4.42E-01
	FW	m^3	2.36E-02	4.99E-05	1.18E-03	2.38E-05	6.05E-06	0.00E+00	6.06E-06	2.53E-04	6.15E-06	2.81E-02

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 resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

End of life - Waste

Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	HWD	kg	5.74E-03	2.40E-05	2.79E-04	1.15E-05	0.00E+00	0.00E+00	2.81E-06	0.00E+00	1.18E-03	6.94E-04
	NHWD	kg	7.60E-02	3.10E-02	4.21E-03	1.08E-02	3.72E-02	0.00E+00	2.01E-03	0.00E+00	2.06E-02	-4.44E-03
	RWD	kg	4.54E-05	3.08E-06	8.75E-06	1.52E-06	0.00E+00	0.00E+00	3.43E-07	0.00E+00	3.90E-09	-5.54E-06

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

End of life - Output flow

Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	CRU	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	0.00E+00
	MFR	kg	0.00E+00	0.00E+00	3.20E-04	0.00E+00	2.13E-02	0.00E+00	0.00E+00	2.00E-02	0.00E+00	0.00E+00
	MER	kg	0.00E+00	0.00E+00	4.25E-04	0.00E+00	3.94E-04	0.00E+00	0.00E+00	4.58E-01	0.00E+00	0.00E+00
	EEE	MJ	0.00E+00	0.00E+00	2.78E-04	0.00E+00	3.23E-04	0.00E+00	0.00E+00	8.06E-01	0.00E+00	0.00E+00
	EET	MJ	0.00E+00	0.00E+00	4.21E-03	0.00E+00	4.89E-03	0.00E+00	0.00E+00	1.22E+01	0.00E+00	0.00E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

Biogenic Carbon Content

Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	1.47E-03

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2

Additional requirements

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

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 process (A3).

Electricity mix	Source	Amount	Unit
Electricity, Finland (kWh)	ecoinvent 3.6	255.20	g CO2-eq/kWh
5363 - Electricity, low voltage, solar (kWh) - FI	ecoinvent 3.6	77.03	g CO2-eq/kWh

Dangerous substances

The product contains no substances given by the REACH Candidate list.

Indoor environment

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products											
Indicator	**Unit**	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWPIOBC	kg CO_2 -eq	1.23E+00	2.88E-02	5.65E-02	1.47E-02	2.59E-03	0.00E+00	3.41E-03	1.46E+00	2.38E-04	1.73E+00

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

Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
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EN 15804:2012+A2:2019 Environmental product declaration - Core rules for the product category of construction products.
ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products.
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NPCR Part A: Construction products and services. Ver. 2.0. April 2021, EPD-Norge.
NPCR 012 Part B for Part B for Thermal insulation products, Ver. 2.0, 31.03.2022, EPD Norway.

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