



Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Greenline EPS Norway, Søgne





The Norwegian EPD Foundation

Owner of the declaration:

BEWI ASA, Insulation and Construction

Product

Greenline EPS Norway, Søgne

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:

The Norwegian EPD Foundation

Declaration number:

NEPD-6920-6314-EN

Registration number:

NEPD-6920-6314-EN

Issue date: 19.06.2024

Valid to: 19.06.2029

EPD software:

LCAno EPD generator ID: 262534



General information

Product

Greenline EPS Norway, Søgne

Program operator:

The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo, Norway Phone: +47 977 22 020

web: www.epd-norge.no

Declaration number:

NFPD-6920-6314-FN

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

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 information, life cycle assessment data and evidences.

Declared unit:

1 m2 Greenline EPS Norway, Søgne

Declared unit with option:

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

Functional unit:

1 m^2 Greenline 80 EPS insulation board with 38 mm thickness at R=1 m^2 K/W, transportation to site, waste handling and recovery.

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-Norway'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-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

Verification of EPD tool:

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

Third party verifier:

Elisabet Amat, GREENIZE projects

(no signature required)

Owner of the declaration:

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

Manufacturer:

BEWI Insulation Norway Sørkilen 3 1621 Gressvik, Norway

Place of production:

BEWI Kristiansand Linneflaten 6 4640 Søgne, Norway

Management system:

ISO 14001 og 9001 for all production sites

Organisation no:

925437948

Issue date:

19.06.2024

Valid to:

19.06.2029

Year of study:

2023

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.

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 Norway.

Developer of EPD: Jostein Häckert

Reviewer of company-specific input data and EPD: Svein Tore Larsen

Approved:

Håkon Hauan Managing Director of EPD-Norway



Product

Product description:

Product variation and calculation of averages

The insulation board is provided in several dimensions and thicknesses. Please use the conversion table below for other sizes than the declared unit.

No variation between sites; single production site declared.

Product description

Expanded polystyrene (EPS) is a common material used for thermal insulation of buildings, including floors, walls and ceilings. It is a polymer foam, consisting of air-filled polystyrene cells. As 98% of the material is air, EPS provides good insulating properties at a low weight. Other characteristics of the material include low moisture absorption, long service life and high compressive strength.

Greenline EPS is made of 100% recycled raw material.

Product specification

EPS is manufactured through permeating polystyrene beads with pentane, allowing the beads to expand when exposed to steam. This addition of a so-called blowing agent adds 4% - 6% w/w. The expanded polystyrene (EPS) beads are then fed into a block molding machine, where steam and pressure forms large blocks of EPS. The amount of EPS going into the mold determines the densitiy of the block, where pressure class 80 provides a density at 80 kN/m2, which is approximately 16 kg/m3. After molding, the remaining blowing agent, pentane, is aired out and the blocks are cut into the desired shape.

Weight per declared unit is 0,608 kg given a density of 16 kg/cubic meter with a thickness of 38 mm.

| Materials | kg | % |
|-----------------------|------|--------|
| Packaging - EPS | 0,03 | 5,21 |
| Plastic - Recycled | 0,60 | 94,79 |
| Total | 0,63 | 100,00 |
| Packaging | kg | % |
| Packaging - Plastic | 0,01 | 100,00 |
| Total incl. packaging | 0,64 | 100,00 |

Technical data:

CE marking: EPS insulation boards are CE certified according to SS-EN 13163

Typical size: 600 mm x 1200 mm, 1200 x 2400mm

Typical thickness: 10 mm - 400 mm Moisture absoprtion: < 5 vol%

Fire Class: F

Density:

80: 16,0 kg/m3 100: 17,5 kg/m3 200: 28,5 kg/m3

Market:

Norway

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 Greenline EPS Norway, Søgne

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.

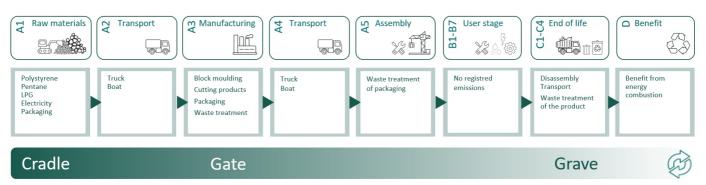
| Materials | Source | Data quality | Year |
|---------------------|---------------------------------|-------------------|------|
| Packaging - EPS | Plastics Europe + ecoinvent 3.6 | European average. | 2019 |
| Packaging - Plastic | ecoinvent 3.6 | Database | 2019 |
| Plastic - Recycled | Supplier Specific | Project EPD | 2024 |



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

| Р | roduct sta | ge | | uction on stage | | | | Use stage | | | | | End of life stage | | | Beyond the system boundaries |
|------------------|------------|---------------|-----------|--------------------|-----|-------------|--------|-------------|-------------------------|------------------------------|--------------------------|-----------------------------------|-------------------|---------------------|----------|--|
| Raw materials | Transport | Manufacturing | Transport | Assembly | Use | Maintenance | Repair | Replacement | Refu <i>r</i> b ishment | Operational energy use | Operational water use | De- construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery- Recycling-potential |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | В3 | B4 | B5 | В6 | В7 | C1 | C2 | C3 | C4 | D |
| Х | Χ | X | Χ | Χ | MND | MND | MND | MND | MND | MND | MND | Χ | Χ | Χ | Χ | X |

System boundary:



| Kvalitet | 38 mm | 50 mm | 100 mm | 150 mm | 200 mm | m³ |
|----------|-------|-------|--------|--------|--------|-------|
| 80 | 1,00 | 1,32 | 2,63 | 3,95 | 5,26 | 26,32 |
| 100 | 1,16 | 1,53 | 3,06 | 4,59 | 6,13 | 31,46 |
| 150 | 1,56 | 2,05 | 4,1 | 6,15 | 8,2 | 44,54 |
| 200 | 1,89 | 2,48 | 4,97 | 7,45 | 9,93 | 55,5 |
| 300 | 2,6 | 3,43 | 6,85 | 10,28 | 13,71 | 76,6 |

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 % | 300 | 0,043 | l/tkm | 12,90 |
| Assembly (A5) | Unit | Value | | | |
| Waste, packaging, plastic to average treatment - A5 (inkl transport) (kg) | kg | 0,04 | | | |
| De-construction demolition (C1) | Unit | Value | | | |
| Waste treatment, 100% recycled PS, Insulation, Norway (kg) | kg/DU | 0,61 | | | |
| Transport to waste processing (C2) | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit | Value (Liter/tonne) |
| Truck, over 32 tonnes, EURO 6 (kgkm) - RER | 53,3 % | 83 | 0,023 | l/tkm | 1,91 |
| Waste processing (C3) | Unit | Value | | | |
| Recycling of 100% recycled PS | kg | 0,06 | | | |
| Waste, Polystyrene, incineration | kg | 0,55 | | | |
| Disposal (C4) | Unit | Value | | | |
| Landfilling of ashes from incineration of PS | kg | 0,00 | | | |
| Waste, inert waste, to landfill (kg) | kg | 0,00 | | | |
| Benefits and loads beyond the system boundaries (D) | Unit | Value | | | |
| substitution of electricity (MJ) | MJ | 0,32 | | | |
| substitution of electricity, Norway | MJ | 0,00 | | | |
| Substitution of expandable polystyrene, EPS, granulate (kg) | kg | -0,55 | | | |
| Substitution of thermal energy (MJ) | MJ | 17,47 | | | |
| Substitution of thermal energy, Norway (MJ) | MJ | 0,00 | | | |



LCA: Results

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

| Envir | onmental imp | act | | | | | | | | | | |
|----------|--------------------------------------|----------------------------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| | Indicator | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| | GWP-total | kg CO ₂ - eq | 4,50E-01 | 7,33E-02 | 3,34E-02 | 2,98E-02 | 3,30E-03 | 0,00E+00 | 4,40E-03 | 1,74E+00 | 8,51E-05 | 1,96E+00 |
| | GWP-fossil | kg CO ₂ - eq | 4,74E-01 | 7,32E-02 | 3,05E-02 | 2,98E-02 | 3,30E-03 | 0,00E+00 | 4,40E-03 | 1,74E+00 | 8,50E-05 | 1,95E+00 |
| | GWP-biogenic | kg CO ₂ - eq | -2,52E-02 | 2,89E-05 | 2,81E-03 | 1,23E-05 | 4,56E-07 | 0,00E+00 | 1,88E-06 | 1,20E-05 | 4,51E-08 | 1,35E-02 |
| | GWP-luluc | kg CO ₂ - eq | 1,49E-03 | 2,70E-05 | 8,56E-05 | 1,06E-05 | 2,53E-07 | 0,00E+00 | 1,34E-06 | 1,91E-06 | 1,30E-08 | -3,46E-03 |
| ٨ | ODP | kg CFC11 - eq | 7,88E-08 | 1,71E-08 | 1,52E-09 | 6,75E-09 | 1,98E-10 | 0,00E+00 | 1,06E-09 | 1,25E-09 | 9,00E-12 | -7,38E-03 |
| | АР | mol H+ -eq | 3,20E-03 | 6,70E-04 | 8,82E-05 | 8,56E-05 | 4,07E-06 | 0,00E+00 | 1,42E-05 | 2,07E-04 | 2,99E-07 | 6,25E-03 |
| - | EP-FreshWater | kg P -eq | 8,37E-06 | 5,22E-07 | 8,75E-07 | 2,38E-07 | 6,80E-09 | 0,00E+00 | 3,50E-08 | 1,23E-07 | 1,15E-09 | 2,72E-05 |
| | EP-Marine | kg N -eq | 7,00E-04 | 1,61E-04 | 2,08E-05 | 1,69E-05 | 3,72E-06 | 0,00E+00 | 3,10E-06 | 9,98E-05 | 9,34E-08 | 7,93E-04 |
| | EP-Terrestial | mol N - eq | 7,77E-03 | 1,80E-03 | 2,09E-04 | 1,90E-04 | 1,46E-05 | 0,00E+00 | 3,46E-05 | 1,07E-03 | 1,06E-06 | 8,53E-03 |
| | POCP | kg NMVOC -eq | 2,35E-03 | 5,26E-04 | 1,21E-02 | 7,26E-05 | 4,80E-06 | 0,00E+00 | 1,36E-05 | 2,56E-04 | 2,93E-07 | 5,34E-03 |
| 25D | ADP- minerals&metals ¹ | kg Sb- eq | 4,55E-06 | 1,14E-06 | 5,11E-07 | 8,23E-07 | 1,76E-08 | 0,00E+00 | 7,83E-08 | 5,39E-08 | 4,76E-10 | -2,15E-07 |
| | ADP-fossil ¹ | MJ | 9,49E+00 | 1,14E+00 | 2,88E-01 | 4,50E-01 | 1,36E-02 | 0,00E+00 | 7,14E-02 | 1,07E-01 | 7,73E-04 | 4,40E+01 |
| <u>%</u> | WDP ¹ | m^3 | -6,77E+00 | 7,65E-01 | 4,97E+01 | 4,36E-01 | 4,81E-02 | 0,00E+00 | 5,47E-02 | 2,37E-01 | 8,01E-03 | -3,20E+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

Remarks to environmental impacts

[&]quot;Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"

^{*}INA Indicator Not Assessed

^{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



| Addi | Additional environmental impact indicators | | | | | | | | | | | | |
|------|--|-------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|--|
| Ind | licator | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D | |
| | PM | Disease incidence | 2,15E-08 | 5,78E-09 | 8,30E-10 | 1,82E-09 | 7,30E-11 | 0,00E+00 | 4,04E-10 | 8,74E-10 | 4,00E-12 | 1,55E-08 | |
| | IRP ² | kgBq U235 -eq | 2,59E-02 | 4,96E-03 | 5,21E-03 | 1,97E-03 | 6,16E-05 | 0,00E+00 | 3,12E-04 | 1,79E-04 | 3,67E-06 | -7,65E-03 | |
| | ETP-fw ¹ | CTUe | 1,85E+01 | 8,02E-01 | 5,32E-01 | 3,34E-01 | 1,30E-02 | 0,00E+00 | 5,22E-02 | 2,58E-01 | 1,42E-03 | 4,51E-01 | |
| 46.* | HTP-c ¹ | CTUh | 1,04E-10 | 0,00E+00 | 2,90E-11 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 7,30E-11 | 0,00E+00 | 2,79E-10 | |
| 8° E | HTP-nc ¹ | CTUh | 5,36E-09 | 8,05E-10 | 6,17E-10 | 3,65E-10 | 1,30E-11 | 0,00E+00 | 5,00E-11 | 2,90E-09 | 3,00E-12 | -3,23E-09 | |
| | SQP ¹ | dimensionless | 5,92E+00 | 1,11E+00 | 1,39E-01 | 3,15E-01 | 2,38E-02 | 0,00E+00 | 8,18E-02 | 1,27E-02 | 2,13E-03 | -9,60E+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)

[&]quot;Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"

^{*}INA Indicator Not Assessed

^{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 | e use | | | | | | | | | | | |
|----------|---------|----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| | licator | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| F | PERE | MJ | 1,85E+00 | 1,31E-02 | 3,68E+00 | 6,45E-03 | 3,44E-04 | 0,00E+00 | 8,98E-04 | 3,08E-03 | 4,51E-05 | -7,74E+00 |
| 2 | PERM | MJ | 1,95E-01 | 0,00E+00 |
| ₽\$. | PERT | MJ | 2,05E+00 | 1,31E-02 | 3,68E+00 | 6,45E-03 | 3,44E-04 | 0,00E+00 | 8,98E-04 | 3,08E-03 | 4,51E-05 | -7,74E+00 |
| | PENRE | MJ | 8,10E+00 | 1,14E+00 | 2,89E-01 | 4,51E-01 | 1,36E-02 | 0,00E+00 | 7,14E-02 | 1,07E-01 | 7,73E-04 | 4,40E+01 |
| Åg | PENRM | MJ | 1,56E+00 | 0,00E+00 |
| IA | PENRT | MJ | 9,66E+00 | 1,14E+00 | 2,89E-01 | 4,51E-01 | 1,36E-02 | 0,00E+00 | 7,14E-02 | 1,07E-01 | 7,73E-04 | 4,40E+01 |
| | SM | kg | 6,26E-01 | 0,00E+00 |
| 2 | RSF | MJ | 3,83E-03 | 4,48E-04 | 2,95E-03 | 2,31E-04 | 9,02E-06 | 0,00E+00 | 3,14E-05 | 8,58E-05 | 1,12E-06 | -8,06E-04 |
| Ø | NRSF | MJ | 6,04E-03 | 1,40E-03 | 7,69E-03 | 8,25E-04 | 2,36E-05 | 0,00E+00 | 1,05E-04 | 0,00E+00 | 1,78E-04 | -5,29E-01 |
| € | FW | m ³ | 1,26E-02 | 1,17E-04 | 2,85E-02 | 4,82E-05 | 7,20E-06 | 0,00E+00 | 8,12E-06 | 3,02E-04 | 7,11E-07 | 3,19E-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 resources used as raw materials; PENRM = Use of non renewable primary energy resources; SM = Use of secondary materials; RESF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

[&]quot;Reading example: 9,0 E-03 = 9,0*10-3 = 0,009" *INA Indicator Not Assessed



| End of li | fe - Waste | | | | | | | | | | | |
|-----------|------------|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Ind | licator | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| | HWD | kg | 2,07E-03 | 5,96E-05 | 4,14E-03 | 2,32E-05 | 0,00E+00 | 0,00E+00 | 3,91E-06 | 0,00E+00 | 1,41E-03 | 7,90E-04 |
| Ū | NHWD | kg | 2,65E-01 | 8,30E-02 | 2,66E-02 | 2,19E-02 | 4,17E-02 | 0,00E+00 | 6,21E-03 | 0,00E+00 | 6,99E-04 | -6,38E-03 |
| 8 | RWD | kg | 3,58E-05 | 7,80E-06 | 2,61E-06 | 3,07E-06 | 0,00E+00 | 0,00E+00 | 4,87E-07 | 0,00E+00 | 4,66E-09 | -6,64E-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" *INA Indicator Not Assessed

| ı | nd of life | - Outpu | t flow | | | | | | | | | | |
|---|------------|---------|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Indica | ator | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| | @ D | CRU | kg | 0,00E+00 |
| | \$₽ | MFR | kg | 5,90E-02 | 0,00E+00 | 9,35E-03 | 0,00E+00 | 2,13E-02 | 0,00E+00 | 0,00E+00 | 6,08E-02 | 0,00E+00 | 0,00E+00 |
| | DF | MER | kg | 1,85E-02 | 0,00E+00 | 2,29E-02 | 0,00E+00 | 2,09E-06 | 0,00E+00 | 0,00E+00 | 5,47E-01 | 0,00E+00 | 0,00E+00 |
| | 50 | EEE | MJ | 2,33E-02 | 0,00E+00 | 1,44E-02 | 0,00E+00 | 3,20E-06 | 0,00E+00 | 0,00E+00 | 9,64E-01 | 0,00E+00 | 0,00E+00 |
| | D. | EET | MJ | 3,53E-01 | 0,00E+00 | 2,18E-01 | 0,00E+00 | 4,85E-05 | 0,00E+00 | 0,00E+00 | 1,46E+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" *INA Indicator Not Assessed

| 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 | 7,38E-03 | | | | | | | |
| , | 3 | ., | | | | | | | |

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, Norway (kWh) | ecoinvent 3.6 | 21,18 | g CO2-eg/kWh |

Dangerous substances

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

Indoor environment

Additional Environmental Information

| Addi | Additional environmental impact indicators required in NPCR Part A for construction products | | | | | | | | | | | |
|------|--|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Ind | licator | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| GW | /PIOBC | kg CO ₂ -eq | 4,80E-01 | 7,33E-02 | 3,55E-02 | 2,98E-02 | 3,30E-03 | 0,00E+00 | 4,40E-03 | 1,74E+00 | 8,82E-05 | 1,96E+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.

ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.

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.

ecoinvent v3, Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.

Iversen et al., (2021) eEPD v2021.09 Background information for EPD generator tool system verification, LCA.no Report number: 07.21 Vold et. al., (2022) EPD generator for NPCR 012 Thermal insulation, Background information for EPD generator application and LCA data, LCA.no report number: 07.22.

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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