

# Environmental product declaration

In accordance with 14025 and EN15804+A2

JACKOPOR EPS NORWAY



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**BEWI**

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The Norwegian EPD Foundation

**Owner of the declaration:**

Bewi Insulation Scandinavia

**Product:**

JACKOPOR EPS NORWAY

**Declared unit:**

1 m<sup>2</sup>

**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-4452-3704-EN

**Registration number:**

NEPD-4452-3704-EN

**Issue date:** 08.05.2023

**Valid to:** 08.05.2028

**EPD Software:**

LCA.no EPD generator ID: 61997

## General information

### Product

JACKOPOR EPS NORWAY

### Program operator:

Post Box 5250 Majorstuen, 0303 Oslo, Norway  
The Norwegian EPD Foundation  
Phone: +47 23 08 80 00  
web: [post@epd-norge.no](mailto:post@epd-norge.no)

### Declaration number:

NEPD-4452-3704-EN

### 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 m<sup>2</sup> JACKOPOR EPS NORWAY

### Declared unit with option:

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

### Declared unit, specification:

1 m<sup>2</sup> Jackopor 80 EPS insulation board with 38 mm thickness at R=1 m<sup>2</sup> 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. Individual third party verification of each EPD is not required when the EPD tool is i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPDNorway, and iii) the process is reviewed annually. 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

(no signature required)

### Owner of the declaration:

Bewi Insulation Scandinavia  
Contact person: Svein Tore Larsen  
Phone: +47 95 07 67 42  
e-mail: [svein.tore.larsen@jackon.no](mailto:svein.tore.larsen@jackon.no)

### Manufacturer:

Bewi Insulation Scandinavia  
Sørkilen 3  
1621 GRESSVIK, Fredrikstad i VIKEN, Norway

### Place of production:

Bewi Insulation Scandinavia, Fredrikstad  
Sørkilen 3  
NO-1621 Gressvik, Norway

### Management system:

ISO 9001: 185977-2015-AQ-NOR-NA and ISO 14001: 251411-2017-AE-NOR-NA

### Organisation no:

913019334

### Issue date:

08.05.2023

### Valid to:

08.05.2028

### Year of study:

2021

### Comparability:

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

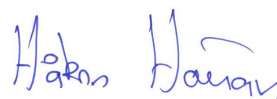
### Development and verification of EPD:

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: Svein Tore Larsen

Reviewer of company-specific input data and EPD: Jostein Häckert

### 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.

### 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 density of the block, where pressure class 80 provides a density at 80 kN/m<sup>2</sup>, which is approximately 15 kg/m<sup>3</sup>. After molding, the remaining blowing agent, pentane, is aired out and the blocks are cut into the desired shape. Weight per declared unit is 0,57 kg given a density of 15 kg/cubic meter with a thickness of 38 mm.

| Materials                              | kg   | %      |
|--|------|--------|
| Plastic - Polystyrene expandable (EPS) | 0,57 | 100,00 |
| Total                                  | 0,57 |        |

| Packaging             | kg   | %      |
|-----------------------|------|--------|
| Packaging - Plastic   | 0,01 | 100,00 |
| Total incl. packaging | 0,58 |        |

### Technical data:

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

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

Typical thickness: 10 mm - 400 mm

Bending strength: > 50 kN/m<sup>2</sup>

### 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 m<sup>2</sup> JACKOPOR EPS NORWAY

### 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. 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:

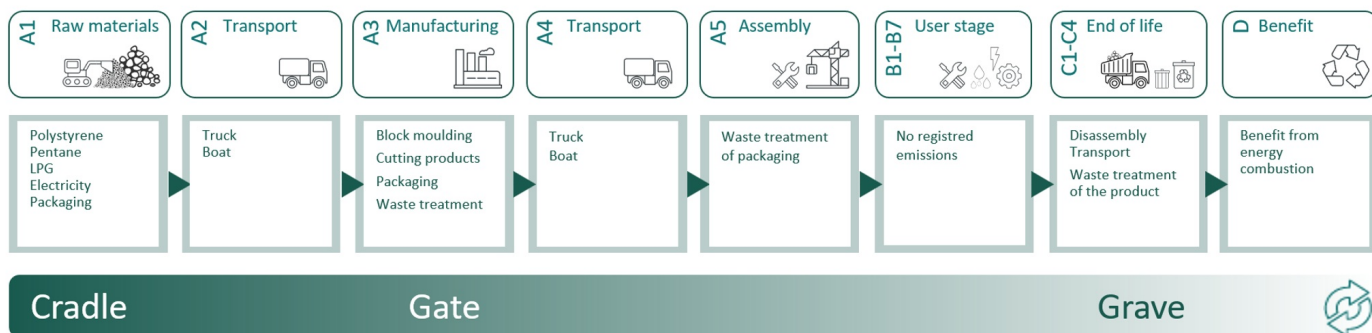
Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the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

| Materials                              | Source                          | Data quality      | Year |
|--|---------------------------------|-------------------|------|
| Packaging - Plastic                    | ecoinvent 3.6                   | Database          | 2019 |
| Plastic - Polystyrene expandable (EPS) | Plastics Europe + ecoinvent 3.6 | European average. | 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:



| Kvalitet | 38 mm | 50 mm | 100 mm | 150 mm | 200 mm | Kubikk |
|----------|-------|-------|--------|--------|--------|--------|
| 80       | 1,00  | 1,32  | 2,63   | 3,95   | 5,26   | 26,32  |
| 60       | 0,87  | 1,14  | 2,28   | 3,43   | 4,57   | 21,16  |
| 100      | 1,16  | 1,53  | 3,06   | 4,59   | 6,13   | 31,46  |
| 150      | 1,56  | 2,05  | 4,10   | 6,15   | 8,20   | 44,54  |
| 200      | 1,89  | 2,48  | 4,97   | 7,45   | 9,93   | 55,50  |
| 300      | 2,60  | 3,43  | 6,85   | 10,28  | 13,71  | 76,60  |

### 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                                    | 0,01          |                         |       |                     |
| De-construction demolition (C1)   |                                       | Unit          | Value                   |       |                     |
| Manual demolition of EPS in C1  | kg/DU                                 | 0,57          |                         |       |                     |
| 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                   |       |                     |
| Waste, Polystyrene, incineration  | kg                                    | 0,57          |                         |       |                     |
| Disposal (C4)   |                                       | Unit          | Value                   |       |                     |
| Landfilling of ashes from incineration of PS                              | kg                                    | 0,00          |                         |       |                     |
| Benefits and loads beyond the system boundaries (D)                       |                                       | Unit          | Value                   |       |                     |
| substitution of electricity, Norway                                       | MJ                                    | 0,33          |                         |       |                     |
| Substitution of thermal energy, Norway (MJ)                               | MJ                                    | 18,20         |                         |       |                     |

## 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 <sub>2</sub> -eq | 1,33E+00 | 4,35E-02 | 3,52E-01 | 2,85E-02 | 9,51E-04 | 0,00E+00 | 4,21E-03 | 1,82E+00 | 8,86E-05 | -1,03E-01 |  |
| GWP-fossil                       | kg CO <sub>2</sub> -eq | 1,33E+00 | 4,34E-02 | 3,50E-01 | 2,85E-02 | 9,50E-04 | 0,00E+00 | 4,21E-03 | 1,82E+00 | 8,85E-05 | -9,98E-02 |  |
| GWP-biogenic                     | kg CO <sub>2</sub> -eq | 5,55E-03 | 1,86E-05 | 1,83E-03 | 1,18E-05 | 1,31E-07 | 0,00E+00 | 1,80E-06 | 1,25E-05 | 4,70E-08 | -5,99E-05 |  |
| GWP-luluc                        | kg CO <sub>2</sub> -eq | 3,19E-04 | 1,32E-05 | 5,97E-05 | 1,02E-05 | 7,29E-08 | 0,00E+00 | 1,28E-06 | 1,99E-06 | 1,36E-08 | -3,61E-03 |  |
| ODP                              | kg CFC11-eq            | 8,50E-10 | 1,05E-08 | 6,73E-08 | 6,46E-09 | 5,70E-11 | 0,00E+00 | 1,01E-09 | 1,30E-09 | 1,00E-11 | -7,69E-03 |  |
| AP                               | mol H <sup>+</sup> -eq | 2,36E-03 | 1,40E-04 | 1,04E-03 | 8,20E-05 | 1,17E-06 | 0,00E+00 | 1,35E-05 | 2,16E-04 | 3,12E-07 | -8,25E-04 |  |
| EP-FreshWater                    | kg P -eq               | 5,59E-06 | 3,46E-07 | 1,83E-06 | 2,28E-07 | 1,96E-09 | 0,00E+00 | 3,35E-08 | 1,29E-07 | 1,20E-09 | -8,97E-06 |  |
| EP-Marine                        | kg N -eq               | 6,29E-04 | 3,06E-05 | 2,59E-04 | 1,62E-05 | 1,07E-06 | 0,00E+00 | 2,97E-06 | 1,04E-04 | 9,73E-08 | -2,79E-04 |  |
| EP-Terrestrial                   | mol N -eq              | 6,83E-03 | 3,42E-04 | 2,83E-03 | 1,81E-04 | 4,20E-06 | 0,00E+00 | 3,31E-05 | 1,11E-03 | 1,11E-06 | -3,01E-03 |  |
| POCP                             | kg NMVOC-eq            | 2,98E-03 | 1,34E-04 | 8,47E-03 | 6,95E-05 | 1,38E-06 | 0,00E+00 | 1,30E-05 | 2,67E-04 | 3,06E-07 | -8,30E-04 |  |
| ADP-minerals&metals <sup>1</sup> | kg Sb -eq              | 5,63E-07 | 7,74E-07 | 7,80E-07 | 7,88E-07 | 5,06E-09 | 0,00E+00 | 7,50E-08 | 5,61E-08 | 4,96E-10 | -6,23E-07 |  |
| ADP-fossil <sup>1</sup>          | MJ                     | 4,52E+01 | 7,05E-01 | 4,50E+00 | 4,31E-01 | 3,92E-03 | 0,00E+00 | 6,83E-02 | 1,11E-01 | 8,05E-04 | -1,43E+00 |  |
| WDP <sup>1</sup>                 | m <sup>3</sup>         | 1,20E+00 | 5,41E-01 | 1,81E+01 | 4,17E-01 | 1,39E-02 | 0,00E+00 | 5,24E-02 | 2,47E-01 | 8,35E-03 | -5,19E+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 change; ODP Ozone Depletion; AP Acidification; EP freshwater Eutrophication aquatic freshwater; EP marine Eutrophication aquatic marine; EP terrestrial Eutrophication terrestrial ;POCP Photochemical zone formation; ADPE Abiotic Depletion Potential minerals and metals; ADPf Abiotic Depletion Potential fossil fuels;

"Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 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

## Remarks to environmental impacts

| Additional environmental impact indicators |                   |          |          |          |          |          |          |          |          |          |           |  |
|--|-------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|--|
| Indicator                                  | Unit              | A1       | A2       | A3       | A4       | A5       | C1       | C2       | C3       | C4       | D         |  |
| PM   | Disease incidence | 1,84E-08 | 3,99E-09 | 1,16E-08 | 1,75E-09 | 2,10E-11 | 0,00E+00 | 3,86E-10 | 9,10E-10 | 4,00E-12 | -5,24E-08 |  |
| IRP <sup>2</sup>                           | kgBq U235 -eq     | 2,87E-02 | 3,08E-03 | 1,99E-02 | 1,88E-03 | 1,77E-05 | 0,00E+00 | 2,99E-04 | 1,86E-04 | 3,82E-06 | -8,22E-03 |  |
| ETP-fw <sup>1</sup>                        | CTUe              | 2,16E+02 | 5,16E-01 | 2,77E+00 | 3,20E-01 | 3,74E-03 | 0,00E+00 | 5,00E-02 | 2,69E-01 | 1,48E-03 | -7,85E+00 |  |
| HTP-c <sup>1</sup>                         | CTUh              | 5,19E-10 | 0,00E+00 | 1,19E-10 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 7,60E-11 | 0,00E+00 | -1,33E-10 |  |
| HTP-nc <sup>1</sup>                        | CTUh              | 2,31E-08 | 4,99E-10 | 3,57E-09 | 3,49E-10 | 4,00E-12 | 0,00E+00 | 4,80E-11 | 3,02E-09 | 3,00E-12 | -7,47E-09 |  |
| SQP <sup>1</sup>                           | dimensionless     | 1,37E+00 | 8,09E-01 | 6,39E-01 | 3,02E-01 | 6,84E-03 | 0,00E+00 | 7,83E-02 | 1,33E-02 | 2,22E-03 | -1,01E+01 |  |

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 Soil Quality (dimensionless)

"Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 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 use |                |          |          |          |          |          |          |          |          |          |           |  |
|--------------|----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|--|
| Indicator    | Unit           | A1       | A2       | A3       | A4       | A5       | C1       | C2       | C3       | C4       | D         |  |
| PERE         | MJ             | 2,79E-01 | 8,87E-03 | 1,28E+00 | 6,17E-03 | 9,90E-05 | 0,00E+00 | 8,60E-04 | 3,20E-03 | 4,69E-05 | -8,31E+00 |  |
| PERM         | MJ             | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00  |  |
| PERT         | MJ             | 2,79E-01 | 8,87E-03 | 1,28E+00 | 6,17E-03 | 9,90E-05 | 0,00E+00 | 8,60E-04 | 3,20E-03 | 4,69E-05 | -8,31E+00 |  |
| PENRE        | MJ             | 2,94E+01 | 7,05E-01 | 4,50E+00 | 4,31E-01 | 3,92E-03 | 0,00E+00 | 6,83E-02 | 1,11E-01 | 8,06E-04 | -1,43E+00 |  |
| PENRM        | MJ             | 1,88E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00  |  |
| PENRT        | MJ             | 4,82E+01 | 7,05E-01 | 4,50E+00 | 4,31E-01 | 3,92E-03 | 0,00E+00 | 6,83E-02 | 1,11E-01 | 8,06E-04 | -1,43E+00 |  |
| SM           | kg             | 7,37E-06 | 0,00E+00 | 2,37E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00  |  |
| RSF          | MJ             | 3,97E-03 | 3,10E-04 | 1,77E-03 | 2,21E-04 | 2,60E-06 | 0,00E+00 | 3,01E-05 | 8,94E-05 | 1,17E-06 | -8,39E-04 |  |
| NRSF         | MJ             | 2,35E-04 | 1,04E-03 | 1,21E-02 | 7,90E-04 | 6,80E-06 | 0,00E+00 | 1,01E-04 | 0,00E+00 | 1,86E-04 | -5,51E-01 |  |
| FW           | m <sup>3</sup> | 3,76E-02 | 8,03E-05 | 1,16E-02 | 4,61E-05 | 2,07E-06 | 0,00E+00 | 7,78E-06 | 3,15E-04 | 7,40E-07 | -3,68E-03 |  |

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 Use of net fresh water

"Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 0,009"






\*INA Indicator Not Assessed

| End of life - Waste   |      |    |          |          |          |          |          |          |          |          |          |           |
|---|------|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Indicator   | Unit | A1 | A2       | A3       | A4       | A5       | C1       | C2       | C3       | C4       | D        |           |
|  | HWD  | kg | 1,85E-03 | 3,86E-05 | 3,08E-03 | 2,22E-05 | 1,55E-06 | 0,00E+00 | 3,74E-06 | 0,00E+00 | 1,47E-03 | -2,08E-05 |
|  | NHWD | kg | 2,87E-02 | 6,13E-02 | 1,83E-02 | 2,10E-02 | 5,96E-03 | 0,00E+00 | 5,94E-03 | 0,00E+00 | 7,28E-04 | -2,96E-02 |
|  | RWD  | kg | 1,08E-06 | 4,82E-06 | 3,01E-05 | 2,94E-06 | 2,64E-08 | 0,00E+00 | 4,67E-07 | 0,00E+00 | 4,86E-09 | -7,20E-06 |

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

\*Reading example: 9,0 E-03 =  $9,0 \cdot 10^{-3} = 0,009$

\*INA Indicator Not Assessed

| 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 | 1,22E-02 | 0,00E+00 | 6,13E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
|  | MER  | kg | 0,00E+00 | 0,00E+00 | 7,44E-06 | 0,00E+00 | 2,74E-08 | 0,00E+00 | 0,00E+00 | 5,70E-01 | 0,00E+00 | 0,00E+00 |
|  | EEE  | MJ | 0,00E+00 | 0,00E+00 | 9,61E-03 | 0,00E+00 | 7,56E-05 | 0,00E+00 | 0,00E+00 | 1,00E+00 | 0,00E+00 | 0,00E+00 |
|  | EET  | MJ | 0,00E+00 | 0,00E+00 | 1,45E-01 | 0,00E+00 | 1,14E-03 | 0,00E+00 | 0,00E+00 | 1,52E+01 | 0,00E+00 | 0,00E+00 |

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

\*Reading example: 9,0 E-03 =  $9,0 \cdot 10^{-3} = 0,009$

\*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 | 0,00E+00            |

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>

## Additional Norwegian 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           | Data source   | Amount | Unit                      |
|---------------------------|---------------|--------|---------------------------|
| Electricity, Norway (kWh) | ecoinvent 3.6 | 21,18  | g CO <sub>2</sub> -eq/kWh |

### Dangerous substances

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

### Indoor environment

## Additional Environmental Information

| Environmental impact indicators EN 15804+A1 and NPCR Part A v2.0 |                                      |          |          |          |          |          |          |          |          |          |           |
|--|--------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Indicator  | Unit                                 | A1       | A2       | A3       | A4       | A5       | C1       | C2       | C3       | C4       | D         |
| GWP  | kg CO <sub>2</sub> -eq               | 2,51E-02 | 4,30E-02 | 3,47E-01 | 2,82E-02 | 7,82E-04 | 0,00E+00 | 4,16E-03 | 1,82E+00 | 9,19E-05 | -1,02E-01 |
| ODP  | kg CFC11 -eq                         | 8,78E-10 | 8,48E-09 | 5,38E-08 | 5,24E-09 | 4,60E-11 | 0,00E+00 | 8,21E-10 | 1,17E-09 | 8,00E-12 | -1,06E-08 |
| POCP   | kg C <sub>2</sub> H <sub>4</sub> -eq | 1,31E-05 | 5,32E-06 | 7,58E-03 | 3,45E-06 | 1,20E-07 | 0,00E+00 | 5,15E-07 | 2,36E-06 | 1,05E-08 | -1,25E-04 |
| AP   | kg SO <sub>2</sub> -eq               | 9,32E-05 | 9,05E-05 | 8,01E-04 | 5,63E-05 | 5,03E-07 | 0,00E+00 | 8,77E-06 | 1,49E-04 | 1,63E-07 | -6,07E-04 |
| EP   | kg PO <sub>4</sub> <sup>3-</sup> -eq | 1,01E-05 | 9,83E-06 | 1,13E-04 | 6,00E-06 | 3,79E-07 | 0,00E+00 | 9,52E-07 | 4,86E-05 | 2,21E-08 | -1,81E-04 |
| ADPM   | kg Sb -eq                            | 2,51E-07 | 7,74E-07 | 7,80E-07 | 7,88E-07 | 5,06E-09 | 0,00E+00 | 7,50E-08 | 5,61E-08 | 4,96E-10 | -6,25E-07 |
| ADPE   | MJ                                   | 6,86E-01 | 6,92E-01 | 4,49E+00 | 4,22E-01 | 3,79E-03 | 0,00E+00 | 6,71E-02 | 1,11E-01 | 8,06E-04 | -1,18E+00 |
| GWPIOBC  | kg CO <sub>2</sub> -eq               | 2,66E-02 | 4,35E-02 | 3,38E-01 | 2,85E-02 | 0,00E+00 | 0,00E+00 | 4,21E-03 | 1,82E+00 | 9,19E-05 | -1,02E-01 |

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources; GWP-IOBC/GHG Global warming potential calculated according to the principle of instantaneous oxidation (except emissions and uptake of biogenic carbon)

## 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, M. et al (2022): EPD generator for NPCR 012, Additional products, EPS and XPS, Background information for EPD generator application NPCR Part A: Construction products and services. Ver. 2.0. April 2021, EPD-Norge.

NPCR 012 Part B for Thermal insulation products, version 2, 31.03.2022, 2022., EPD Norway.

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