

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

FIBOBAU 2-5 rund, Fibo ExClay Deutschland GmbH



**Owner of the declaration:**

Leca International

**Product:**

FIBOBAU 2-5 rund, Fibo ExClay Deutschland GmbH

**Declared unit:**

1 m<sup>3</sup>

**This declaration is based on Product Category Rules:**

CEN Standard EN 15804:2012+A2:2019 serves as core PCR.

NPCR 012:2018 Part B for Thermal insulation products

**Program operator:**

The Norwegian EPD Foundation

**Declaration number:**

NEPD-4733-3988-EN

**Registration number:**

NEPD-4733-3988-EN

**Issue date:** 24.07.2023

**Valid to:** 24.07.2028

**EPD Software:**

LCA.no EPD generator ID: 57875

The Norwegian EPD Foundation

## General information

### Product

FIBOBAU 2-5 rund, Fibo ExClay Deutschland GmbH

### 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-4733-3988-EN

### This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR.  
NPCR 012:2018 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 m3 FIBOBAU 2-5 rund, Fibo ExClay Deutschland GmbH

### Declared unit with option:

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

### Functional unit:

### 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 EPD Norway'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:

Leca International  
Contact person: Tone Storbråten  
Phone: +47 41 43 71 00  
e-mail: [info@leca.no](mailto:info@leca.no)

### Manufacturer:

Leca International  
Årnesvegen 1  
2009 Nordby, Norway

### Place of production:

Leca Denmark A/S  
Randersvej 75 Hinge  
8940 Randers Denmark, Denmark

### Management system:

ISO 14001 ISO 9001

### Organisation no:

918 799 141

**Issue date:** 24.07.2023

**Valid to:** 24.07.2028

### Year of study:

2021

### 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.

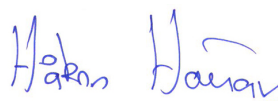
### Development and verification of EPD:

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: Ana Raquel Fernandes

Reviewer of company-specific input data and EPD: Tone Storbråten

### Approved:



Håkon Hauan  
Managing Director of EPD-Norway

## Product

### Product description:

The EPD describes results for production of lightweight expanded clay aggregate, labelled FIBOBAU, FIBOBAU 2-5 round, from the factory in Lamstedt, Germany. Lightweight expanded clay aggregate is a granular ceramic material made from natural clay. The clay mixed with organic material, dried and expanded to 3-4 times its original volume in rotary kilns at temperatures of about 1150 ° C. The output lightweight expanded clay aggregate granules, in the range 0-32 mm, are sieved and blended into different grades of products and distributed in bulk or in bags. The main characteristic of expanded clay is low density combined with high strength. FIBOBAU is used for lightweight concrete, mortar and grout. The density of FIBOBAU 2-5 round is 500kg/m<sup>3</sup>. Further information or explanatory material may be obtained by contacting Fibo ExClay Deutschland GmbH.

### Product specification

FIBOBAU, natural expanded clay of various, precisely defined sizes and weights, is used as drainage and in lightweight mortars and insulating lightweight screeds. It is also used by the processing industry as a lightweight aggregate for lightweight concrete.

| Materials               | Value | Unit |
|-------------------------|-------|------|
| Clay                    | 92    | %    |
| Waste/bio raw materials | 8     | %    |
| Lime                    | < 0,5 | %    |

### Technical data:

Grading (Test method: EN 933-1): 2-5 mm

Loose bulk density (Test method: EN 1097-3): 500 Kg/m<sup>3</sup>

Reaction to fire (2000/605/EG): A1

Water absorption (Test method: EN 13055-1):

5 min: 12%

60 min: 15%

24 h: 24%

### Market:

Germany

### Reference service life, product

Not relevant.

### Reference service life, building or construction works

Not relevant.

## LCA: Calculation rules

### Declared unit:

1 m3 FIBOBAU 2-5 rund, Fibo ExClay Deutschland GmbH

### 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:

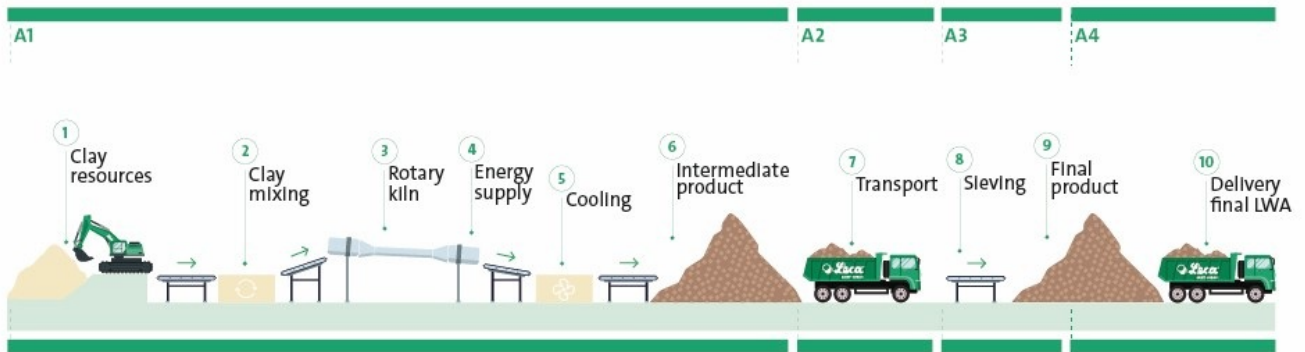
Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the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

| Materials                   | Source | Data quality | Year |
|-----------------------------|--------|--------------|------|
| Lightweight Aggregate (LWA) | Leca   | EPD          | 2022 |

**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:**



**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 (km)                                  | 36,7 %                                | 50            | 0,043                   | l/tkm | 2,15                |
| Assembly (A5)   |                                       |               |                         |       |                     |
|   | Unit                                  | Value         |                         |       |                     |
| Blowing, Machine operation, diesel, > 18.64 kW (per hour)         | h/DU                                  | 0,03          |                         |       |                     |
| Bulldozer, Machine operation, diesel, >=74.57 kW (per hour)       | h/DU                                  | 0,02          |                         |       |                     |
| Crane, Machine operation, diesel, >=74.57 kW (per hour)           | h/DU                                  | 0,01          |                         |       |                     |
| Vibrating plate (per liter diesel)                                | L/DU                                  | 0,01          |                         |       |                     |
| De-construction demolition (C1)                                   |                                       |               |                         |       |                     |
|   | Unit                                  | Value         |                         |       |                     |
| Removal of LWA, Machine operation, diesel, >= 74.57 kW (per hour) | h/DU                                  | 0,04          |                         |       |                     |
| Sorting per kg of LWA, for waste treatment after removal (kg)     | kg/DU                                 | 500,00        |                         |       |                     |
| Transport to waste processing (C2)                                |                                       |               |                         |       |                     |
|   | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit  | Value (Liter/tonne) |
| Truck, 16-32 tonnes, EURO 5 (km)                                  | 38,8 %                                | 50            | 0,045                   | l/tkm | 2,25                |
| Waste processing (C3)   |                                       |               |                         |       |                     |
|   | Unit                                  | Value         |                         |       |                     |
| Waste treatment, reuse of LWA (kg)                                | kg                                    | 375,00        |                         |       |                     |
| Disposal (C4)   |                                       |               |                         |       |                     |
|   | Unit                                  | Value         |                         |       |                     |
| Disposal, landfilling of waste LWA (kg)                           | kg                                    | 125,00        |                         |       |                     |
| Benefits and loads beyond the system boundaries (D)               |                                       |               |                         |       |                     |
|   | Unit                                  | Value         |                         |       |                     |
| Substitution of primary expanded clay (kg)                        | kg                                    | 375,00        |                         |       |                     |

## 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 | 1,91E+02 | 8,26E-02 | 5,93E+00 | 4,09E+00 | 1,27E+00 | 8,67E-01 | 4,17E+00 | 0,00E+00 | 1,03E+00 | -9,42E+01 |  |
|  GWP-fossil                       | kg CO <sub>2</sub> -eq | 1,90E+02 | 8,25E-02 | 5,83E+00 | 4,08E+00 | 1,27E+00 | 8,67E-01 | 4,17E+00 | 0,00E+00 | 1,03E+00 | -9,39E+01 |  |
|  GWP-biogenic                     | kg CO <sub>2</sub> -eq | 1,06E+00 | 3,41E-05 | 9,34E-02 | 1,69E-03 | 2,39E-04 | 1,61E-04 | 0,00E+00 | 0,00E+00 | 1,20E-03 | -2,31E-01 |  |
|  GWP-luluc                        | kg CO <sub>2</sub> -eq | 1,48E-02 | 2,94E-05 | 5,93E-03 | 1,45E-03 | 9,96E-05 | 6,79E-05 | 1,46E-03 | 0,00E+00 | 2,52E-04 | -3,67E-02 |  |
|  ODP                              | kg CFC11-eq            | 2,84E-06 | 1,87E-08 | 3,95E-07 | 9,25E-07 | 2,73E-07 | 1,86E-07 | 9,25E-07 | 0,00E+00 | 3,88E-07 | -5,53E-06 |  |
|  AP                               | mol H <sup>+</sup> -eq | 5,78E-01 | 2,37E-04 | 2,39E-02 | 1,17E-02 | 5,70E-03 | 3,16E-03 | 1,70E-02 | 0,00E+00 | 9,12E-03 | -7,49E-01 |  |
|  EP-FreshWater                    | kg P -eq               | 1,07E-02 | 6,59E-07 | 7,32E-04 | 3,26E-05 | 4,60E-06 | 3,13E-06 | 3,28E-05 | 0,00E+00 | 1,16E-05 | -4,67E-03 |  |
|  EP-Marine                        | kg N -eq               | 2,19E-01 | 4,69E-05 | 6,55E-03 | 2,32E-03 | 2,09E-03 | 1,05E-03 | 5,05E-03 | 0,00E+00 | 3,39E-03 | -9,36E-02 |  |
|  EP-Terrestrial                   | mol N -eq              | 2,44E+00 | 5,25E-04 | 8,21E-02 | 2,60E-02 | 2,31E-02 | 1,16E-02 | 5,58E-02 | 0,00E+00 | 3,74E-02 | -1,13E+00 |  |
|  POCP                             | kg NMVOC-eq            | 5,83E-01 | 2,01E-04 | 1,97E-02 | 9,95E-03 | 6,70E-03 | 3,56E-03 | 1,71E-02 | 0,00E+00 | 1,07E-02 | -3,05E-01 |  |
|  ADP-minerals&metals <sup>1</sup> | kg Sb -eq              | 1,48E-04 | 2,28E-06 | 4,16E-05 | 1,13E-04 | 1,94E-06 | 1,32E-06 | 1,13E-04 | 0,00E+00 | 9,24E-06 | -1,24E-03 |  |
|  ADP-fossil <sup>1</sup>         | MJ                     | 1,63E+03 | 1,25E+00 | 7,85E+01 | 6,17E+01 | 1,74E+01 | 1,18E+01 | 6,28E+01 | 0,00E+00 | 2,82E+01 | -9,52E+02 |  |
|  WDP <sup>1</sup>               | m <sup>3</sup>         | 8,01E+01 | 1,21E+00 | 6,63E+02 | 5,97E+01 | 3,70E+00 | 2,52E+00 | 5,99E+01 | 0,00E+00 | 1,74E+02 | -1,76E+03 |  |

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<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

Due to polluter-pay-principle, the emissions from waste are not included.

Biogenic carbon from biofuels are balanced to be zero since they have their input and output in the same module.











| Additional environmental impact indicators  |                   |          |          |          |          |          |          |          |          |          |           |  |
|---|-------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|--|
| Indicator   | Unit              | A1       | A2       | A3       | A4       | A5       | C1       | C2       | C3       | C4       | D         |  |
|  PM                  | Disease incidence | 1,07E-05 | 5,05E-09 | 3,16E-07 | 2,50E-07 | 9,99E-08 | 6,20E-08 | 2,75E-07 | 0,00E+00 | 1,95E-07 | -6,98E-06 |  |
|  IRP <sup>2</sup>    | kgBq U235 -eq     | 9,92E-01 | 5,45E-03 | 2,62E-01 | 2,70E-01 | 7,45E-02 | 5,08E-02 | 2,75E-01 | 0,00E+00 | 1,29E-01 | -1,98E+00 |  |
|  ETP-fw <sup>1</sup> | CTUe              | 2,35E+03 | 9,25E-01 | 6,36E+01 | 4,58E+01 | 9,52E+00 | 6,48E+00 | 4,63E+01 | 0,00E+00 | 1,54E+01 | -2,30E+03 |  |
|  HTP-c <sup>1</sup>  | CTUh              | 1,91E-08 | 0,00E+00 | 1,76E-09 | 0,00E+00 | 1,08E-09 | 7,22E-10 | 0,00E+00 | 0,00E+00 | 6,25E-10 | -4,20E-08 |  |
|  HTP-nc <sup>1</sup> | CTUh              | 1,82E-06 | 1,01E-09 | 6,29E-08 | 5,00E-08 | 8,04E-09 | 5,15E-09 | 5,00E-08 | 0,00E+00 | 1,11E-08 | -1,14E-06 |  |
|  SQP <sup>1</sup>    | dimensionless     | 2,76E+02 | 8,72E-01 | 1,73E+01 | 4,32E+01 | 2,21E+00 | 1,50E+00 | 4,33E+01 | 0,00E+00 | 1,09E+02 | -1,33E+03 |  |

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<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             | 1,58E+02 | 1,79E-02 | 1,20E+01 | 8,84E-01 | 9,41E-02 | 6,41E-02 | 8,88E-01 | 0,00E+00 | 1,01E+00 | -2,58E+02 |  |
|  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             | 1,58E+02 | 1,79E-02 | 1,20E+01 | 8,84E-01 | 9,41E-02 | 6,41E-02 | 8,88E-01 | 0,00E+00 | 1,01E+00 | -2,58E+02 |  |
|  PENRE | MJ             | 1,63E+03 | 1,25E+00 | 7,85E+01 | 6,17E+01 | 1,74E+01 | 1,18E+01 | 6,33E+01 | 0,00E+00 | 2,82E+01 | -9,53E+02 |  |
|  PENRM | 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  |  |
|  PENRT | MJ             | 1,63E+03 | 1,25E+00 | 7,85E+01 | 6,17E+01 | 1,74E+01 | 1,18E+01 | 6,33E+01 | 0,00E+00 | 2,82E+01 | -9,53E+02 |  |
|  SM    | kg             | 6,99E+01 | 0,00E+00 | 1,42E-03 | 0,00E+00 | 8,54E-03 | 5,82E-03 | 2,53E-02 | 0,00E+00 | 1,22E-02 | -1,41E+00 |  |
|  RSF   | MJ             | 1,11E+01 | 6,39E-04 | 3,71E+00 | 3,16E-02 | 2,32E-03 | 1,58E-03 | 3,18E-02 | 0,00E+00 | 2,10E-02 | -6,81E+00 |  |
|  NRSF  | MJ             | 3,68E+02 | 2,28E-03 | 4,07E-02 | 1,13E-01 | 3,41E-02 | 2,32E-02 | 1,13E-01 | 0,00E+00 | 4,53E-02 | -5,33E+00 |  |
|  FW    | m <sup>3</sup> | 1,59E-01 | 1,33E-04 | 3,55E-02 | 6,60E-03 | 8,95E-04 | 6,10E-04 | 6,63E-03 | 0,00E+00 | 3,47E-02 | -6,33E-01 |  |

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<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 | 2,10E+00 | 6,43E-05 | 4,22E-02 | 3,18E-03 | 5,12E-04 | 3,49E-04 | 3,20E-03 | 0,00E+00 | 1,99E-03 | -1,05E-01 |
|  | NHWD | kg | 5,59E+00 | 6,07E-02 | 3,18E-01 | 3,00E+00 | 2,06E-02 | 1,40E-02 | 3,00E+00 | 0,00E+00 | 1,25E+02 | -6,61E+00 |
|  | RWD  | kg | 1,05E-03 | 8,50E-06 | 3,55E-04 | 4,21E-04 | 1,21E-04 | 8,22E-05 | 4,28E-04 | 0,00E+00 | 1,84E-04 | -2,83E-03 |

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 | 2,82E-01 | 0,00E+00 | 2,35E-01 | 0,00E+00 | 8,26E-03 | 5,71E-03 | 3,53E-04 | 3,75E+02 | 1,12E-02 | -1,14E+00 |
|  | MER  | kg | 4,81E-03 | 0,00E+00 | 3,13E-06 | 0,00E+00 | 1,55E-04 | 1,77E-05 | 2,10E-02 | 0,00E+00 | 2,10E-04 | -6,84E-02 |
|  | EEE  | MJ | 5,43E+00 | 0,00E+00 | 7,50E-02 | 0,00E+00 | 8,92E-05 | 6,07E-05 | 2,43E-03 | 0,00E+00 | 1,73E-02 | -1,49E-01 |
|  | EET  | MJ | 8,21E+01 | 0,00E+00 | 1,13E+00 | 0,00E+00 | 1,35E-03 | 9,19E-04 | 3,68E-02 | 0,00E+00 | 2,62E-01 | -2,25E+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 =  $9,0 \cdot 10^{-3} = 0,009$

\*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 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, Germany (kWh) | ecoinvent 3.6 | 585,93 | 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

| 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 <sub>2</sub> -eq | 2,60E+01 | 8,26E-02 | 6,20E+00 | 4,09E+00 | 1,99E-01 | 1,98E-01 | 4,15E+00 | 0,00E+00 | 0,00E+00 | -9,42E+01 |

GWPIOBC: 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.

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