

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

## Element Concrete PF70 Winter



The Norwegian EPD Foundation

**Owner of the declaration:**

Marlon Tørmørtel A/S

**Product:**

Element Concrete PF70 Winter

**Declared unit:**

1 kg

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

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

NPCR 009:2021 Part B for Technical - Chemical products for building and construction industry

**Program operator:**

The Norwegian EPD Foundation

**Declaration number:**

NEPD-5857-5110-EN

**Registration number:**

NEPD-5857-5110-EN

**Issue date:** 19.01.2024

**Valid to:** 19.01.2029

**EPD Software:**

LCA.no EPD generator ID: 192780

## General information

### Product

Element Concrete PF70 Winter

### 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-5857-5110-EN

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

CEN Standard EN 15804:2012+A2:2019 serves as core PCR  
NPCR 009:2021 Part B for Technical - Chemical products for building  
and construction industry

### 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 kg Element Concrete PF70 Winter

### Declared unit with option:

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

### Functional unit:

No functional unit declared

### 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. NEPD73

Third party verifier:

Linda Høibye, Life Cycle Assessment Consulting

(no signature required)

### Owner of the declaration:

Marlon Tørmørtel A/S  
Contact person: Bente Vesterager  
Phone: +45 7575 4300  
e-mail: [marlon@marlon.dk](mailto:marlon@marlon.dk)

### Manufacturer:

Marlon Tørmørtel A/S

### Place of production:

Marlon Tørmørtel A/S  
Virkelyst 20  
8740 Brædstrup, Denmark

### Management system:

### Organisation no:

DK13254079

**Issue date:** 19.01.2024

**Valid to:** 19.01.2029

### Year of study:

2022

### 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: Bente Vesterager

Reviewer of company-specific input data and EPD: Maria Hosbjerg  
Christensen

### Approved:



Håkon Hauan, CEO EPD-Norge

## Product

### Product description:

Marlon Element Concrete PF70 Winter is a factory-produced expanding liquid mortar made of Portland cement, mineral adhesives, additives and oven-dried silica sand with a controlled grain curve. Marlon Element Concrete PF70 Winter requires only the addition of water and, when mixed, is a very fluid pumpable concrete.

see link for more information on: <https://marlon.dk/en/products/installation-and-joint-mortar/element-concrete-pf70-winter>

### Product specification

EPD covers:

Item no1000748 Marlon Element Concrete PF70 Winter

| Materials          | Value | Unit |
|--------------------|-------|------|
| Fillers/Aggregates | 50-70 | %    |
| Binders            | 30-45 | %    |
| Additives          | 0-2   | %    |
| Packaging          | 2-3   | %    |

### Technical data:

Marlon Element Concrete PF70 Winter is produced and declared according to Bulletin no. 5 and EN 1504-3.

Compressive strength, 28 days > 65 MPa

Bending tensile strength, 28 days > 10 MPa

See DoP at <https://marlon.dk/> for all declared product properties.

### Market:

Denmark

### Reference service life, product

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

### Reference service life, building

> 50 years.

## LCA: Calculation rules

### Declared unit:

1 kg Element Concrete PF70 Winter

### 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.

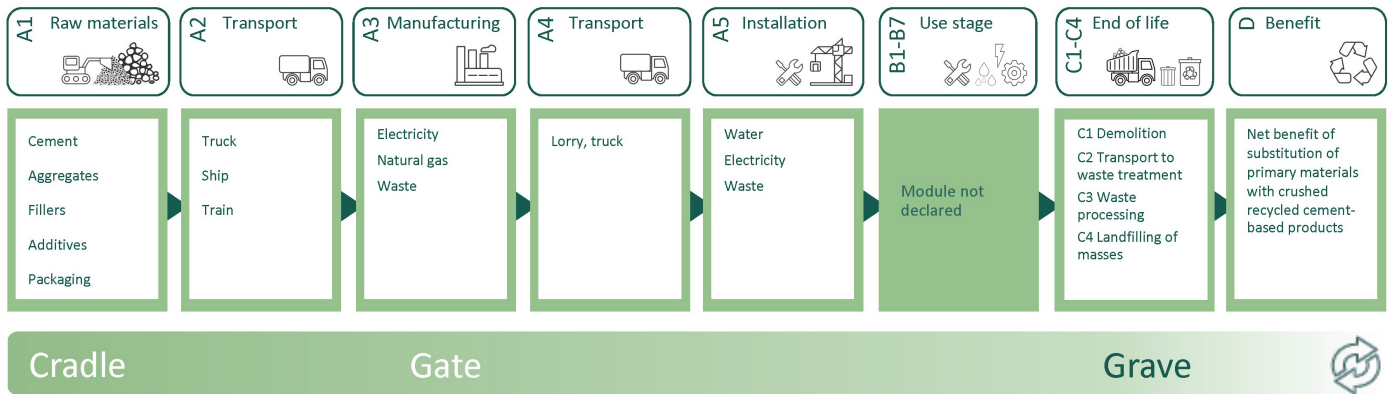
| Materials             | Source                 | Data quality | Year |
|-----------------------|------------------------|--------------|------|
| Cement                | ecoinvent 3.6          | Database     | 2019 |
| Chemical              | ecoinvent 3.6          | Database     | 2019 |
| Defoamer              | ecoinvent 3.6          | Database     | 2019 |
| Fillers               | ecoinvent 3.6          | Database     | 2019 |
| Limestone             | ecoinvent 3.6          | Database     | 2019 |
| Packaging - Plastic   | ecoinvent 3.6          | Database     | 2019 |
| Quartz sand           | ecoinvent 3.6          | Database     | 2019 |
| Rheology modifier     | ecoinvent 3.6          | Database     | 2019 |
| Fillers               | ecoinvent 3.6          | Database     | 2020 |
| Packaging - Cardboard | Modified ecoinvent 3.6 | Database     | 2019 |
| Packaging - Pallet    | Modified 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:

All processes from raw material extraction, to production, transport to the construction site and assembly, are included in the analysis as well as end of life stage and phases beyond the system boundary.



#### Additional technical information:

The product can be delivered in bulk, Big bag or plastic bags. The calculation includes data for plastic bags, as this is the most frequent used form of packaging.














## 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) - Europe   | 36,7 %                                | 160           | 0,043                   | l/tkm | 6,88                |
| Assembly (A5)   |                                       |               |                         |       |                     |
|   | Unit                                  | Value         |                         |       |                     |
| Electricity, Denmark (kWh)  | kWh/DU                                | 0,01          |                         |       |                     |
| Waste, concrete, to landfill (kg)   | kg/DU                                 | 0,02          |                         |       |                     |
| Waste, packaging, corrugated board box, to average treatment (kg) - A5, inkl. 85 km transp.             | kg/DU                                 | 0,00          |                         |       |                     |
| Waste, packaging, pallet, EUR wooden pallet, reusable, average treatment (kg) - A5, inkl. 85 km transp. | kg                                    | 0,02          |                         |       |                     |
| Water, tap water (kg)   | kg/DU                                 | 0,15          |                         |       |                     |
| De-construction demolition (C1)   |                                       |               |                         |       |                     |
|   | Unit                                  | Value         |                         |       |                     |
| Demolition of building per kg of cement-based product, C1 (kg)  | kg/DU                                 | 1,00          |                         |       |                     |
| 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) - Europe   | 36,7 %                                | 50            | 0,044                   | l/tkm | 2,20                |
| Waste processing (C3)   |                                       |               |                         |       |                     |
|   | Unit                                  | Value         |                         |       |                     |
| Waste treatment of cement-based product after demolition, C3 (kg)                                       | kg                                    | 0,90          |                         |       |                     |
| Disposal (C4)   |                                       |               |                         |       |                     |
|   | Unit                                  | Value         |                         |       |                     |
| Disposal of cement-based product in landfill (kg)   | kg                                    | 0,10          |                         |       |                     |
| Benefits and loads beyond the system boundaries (D)   |                                       |               |                         |       |                     |
|   | Unit                                  | Value         |                         |       |                     |
| Substitution of primary aggregates with crushed recycled cement-based products (kg)                     | kg                                    | 0,90          |                         |       |                     |

## 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-A3     | A4       | A5       | C1       | C2       | C3       | C4       | D         |  |
|  GWP-total                        | kg CO <sub>2</sub> -eq | 4,18E-01  | 2,68E-02 | 3,77E-02 | 4,00E-03 | 8,54E-03 | 6,48E-04 | 8,22E-04 | -2,10E-03 |  |
|  GWP-fossil                       | kg CO <sub>2</sub> -eq | 4,52E-01  | 2,68E-02 | 3,06E-03 | 4,00E-03 | 8,53E-03 | 6,39E-04 | 8,20E-04 | -2,06E-03 |  |
|  GWP-biogenic                     | kg CO <sub>2</sub> -eq | -3,42E-02 | 1,11E-05 | 3,46E-02 | 7,50E-07 | 3,48E-06 | 5,52E-06 | 9,58E-07 | -4,11E-05 |  |
|  GWP-luluc                        | kg CO <sub>2</sub> -eq | 1,73E-04  | 9,52E-06 | 3,71E-06 | 3,15E-07 | 2,98E-06 | 8,84E-07 | 2,02E-07 | -1,39E-06 |  |
|  ODP                              | kg CFC11 -eq           | 3,57E-08  | 6,06E-09 | 2,02E-10 | 8,64E-10 | 1,95E-09 | 1,26E-10 | 3,11E-10 | -3,75E-10 |  |
|  AP                               | mol H+ -eq             | 1,65E-03  | 7,69E-05 | 1,26E-05 | 4,19E-05 | 3,49E-05 | 5,17E-06 | 7,30E-06 | -1,85E-05 |  |
|  EP-FreshWater                    | kg P -eq               | 8,17E-06  | 2,14E-07 | 2,21E-07 | 1,46E-08 | 6,70E-08 | 4,04E-08 | 9,30E-09 | -5,48E-08 |  |
|  EP-Marine                        | kg N -eq               | 5,27E-04  | 1,52E-05 | 2,38E-06 | 1,85E-05 | 1,03E-05 | 1,52E-06 | 2,71E-06 | -6,43E-06 |  |
|  EP-Terrestrial                   | mol N -eq              | 4,76E-03  | 1,70E-04 | 3,21E-05 | 2,00E-04 | 1,14E-04 | 1,75E-05 | 2,99E-05 | -7,56E-05 |  |
|  POCP                             | kg NMVOC -eq           | 1,16E-03  | 6,52E-05 | 7,46E-06 | 5,57E-05 | 3,50E-05 | 4,68E-06 | 8,56E-06 | -2,00E-05 |  |
|  ADP-minerals&metals <sup>1</sup> | kg Sb -eq              | 3,74E-06  | 7,39E-07 | 3,37E-08 | 6,14E-09 | 2,31E-07 | 8,11E-09 | 7,39E-09 | -1,83E-07 |  |
|  ADP-fossil <sup>1</sup>          | MJ                     | 2,90E+00  | 4,04E-01 | 4,21E-02 | 5,51E-02 | 1,29E-01 | 1,98E-02 | 2,26E-02 | -3,49E-02 |  |
|  WDP <sup>1</sup>                 | m <sup>3</sup>         | 1,11E+01  | 3,91E-01 | 5,93E-01 | 1,17E-02 | 1,23E-01 | 2,19E+00 | 1,39E-01 | -1,63E+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<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-A3    | A4       | A5       | C1       | C2       | C3       | C4       | D         |
|---|-------------------|----------|----------|----------|----------|----------|----------|----------|-----------|
|  PM                  | Disease incidence | 1,20E-08 | 1,64E-09 | 9,10E-11 | 5,07E-09 | 6,14E-10 | 8,30E-11 | 1,56E-10 | -3,95E-10 |
|  IRP <sup>2</sup>    | kgBq U235 -eq     | 1,11E-02 | 1,77E-03 | 2,06E-04 | 2,40E-04 | 5,62E-04 | 3,33E-04 | 1,03E-04 | -3,20E-04 |
|  ETP-fw <sup>1</sup> | CTUe              | 2,39E+01 | 3,00E-01 | 6,64E-02 | 3,01E-02 | 9,47E-02 | 1,41E-02 | 1,23E-02 | -3,59E-02 |
|  HTP-c <sup>1</sup>  | CTUh              | 1,78E-10 | 0,00E+00 | 1,00E-12 | 1,00E-12 | 0,00E+00 | 1,00E-12 | 1,00E-12 | -2,00E-12 |
|  HTP-nc <sup>1</sup> | CTUh              | 5,42E-09 | 3,28E-10 | 4,70E-11 | 2,80E-11 | 1,02E-10 | 1,30E-11 | 9,00E-12 | -4,40E-11 |
|  SQP <sup>1</sup>    | dimensionless     | 1,92E+00 | 2,83E-01 | 6,98E-02 | 6,69E-03 | 8,87E-02 | 1,12E-02 | 8,69E-02 | 7,91E-02  |


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-A3    | A4       | A5        | C1       | C2       | C3       | C4       | D         |  |
|  PERE  | MJ             | 3,29E-01 | 5,79E-03 | 2,98E-02  | 3,00E-04 | 1,82E-03 | 1,02E-02 | 8,08E-04 | -8,16E-03 |  |
|  PERM  | MJ             | 3,17E-01 | 0,00E+00 | -3,16E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00  |  |
|  PERT  | MJ             | 6,46E-01 | 5,79E-03 | 1,32E-02  | 3,00E-04 | 1,82E-03 | 1,02E-02 | 8,08E-04 | -8,16E-03 |  |
|  PENRE | MJ             | 2,91E+00 | 4,05E-01 | 4,21E-02  | 5,51E-02 | 1,29E-01 | 1,99E-02 | 2,26E-02 | -3,68E-02 |  |
|  PENRM | MJ             | 5,33E-02 | 0,00E+00 | 0,00E+00  | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00  |  |
|  PENRT | MJ             | 2,97E+00 | 4,05E-01 | 4,21E-02  | 5,51E-02 | 1,29E-01 | 1,99E-02 | 2,26E-02 | -3,68E-02 |  |
|  SM    | kg             | 3,90E-04 | 0,00E+00 | 0,00E+00  | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00  |  |
|  RSF   | MJ             | 8,04E-03 | 2,07E-04 | 1,12E-03  | 0,00E+00 | 6,50E-05 | 0,00E+00 | 1,68E-05 | -1,67E-04 |  |
|  NRSF  | MJ             | 2,22E-03 | 7,41E-04 | 2,12E-05  | 0,00E+00 | 2,32E-04 | 0,00E+00 | 3,62E-05 | -1,71E-04 |  |
|  FW    | m <sup>3</sup> | 3,38E-03 | 4,33E-05 | 2,59E-04  | 2,83E-06 | 1,35E-05 | 3,40E-05 | 2,78E-05 | -1,28E-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 = 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-A3    | A4       | A5       | C1       | C2       | C3       | C4       | D         |  |
|  HWD  | kg   | 9,24E-04 | 2,09E-05 | 4,67E-06 | 1,62E-06 | 6,56E-06 | 1,98E-06 | 0,00E+00 | -8,40E-06 |  |
|  NHWD | kg   | 4,38E-02 | 1,97E-02 | 2,15E-02 | 6,52E-05 | 6,15E-03 | 6,26E-05 | 1,00E-01 | -2,55E-04 |  |
|  RWD  | kg   | 1,26E-05 | 2,76E-06 | 1,12E-07 | 3,82E-07 | 8,77E-07 | 2,10E-07 | 0,00E+00 | -2,76E-07 |  |

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-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 |  |
|  MFR | kg   | 1,88E-05 | 0,00E+00 | 5,09E-04 | 0,00E+00 | 0,00E+00 | 9,00E-01 | 0,00E+00 | 0,00E+00 |  |
|  MER | kg   | 1,22E-04 | 0,00E+00 | 7,31E-06 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |  |
|  EEE | MJ   | 4,57E-04 | 0,00E+00 | 4,98E-04 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |  |
|  EET | MJ   | 6,92E-03 | 0,00E+00 | 7,54E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 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 =  $9,0 \cdot 10^{-3} = 0,009$

\*INA Indicator Not Assessed

| Biogenic Carbon Content                           |      |                     |
|---|------|---------------------|
| Indicator   | Unit | At the factory gate |
| Biogenic carbon content in product                | kg C | 4,84E-05            |
| Biogenic carbon content in accompanying packaging | kg C | 9,40E-03            |

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, Denmark (kWh) | ecoinvent 3.6 | 338,20 | g CO <sub>2</sub> -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-A3    | A4       | A5       | C1       | C2       | C3       | C4       | D         |
| GWPIOBC  | kg CO <sub>2</sub> -eq | 4,58E-01 | 2,68E-02 | 3,72E-03 | 4,00E-03 | 8,54E-03 | 1,19E-03 | 0,00E+00 | -2,20E-03 |

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.

## Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.  
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