

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

SICON Bolted Cable Lug (SICON-MCL-E50-300/35x122/22/16,5) - 332903022



*Representative product image – actual product may vary slightly*

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**PFISTERER**

**Owner of the declaration:**

PFISTERER Holding SE

**Product:**

SICON Bolted Cable Lug (SICON-MCL-E50-300/35x122/22/16,5) - 332903022

**Declared unit:**

1 pcs

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

CEN Standard EN 15804:2012+A2:2019 serves as core PCR  
NPCR 027:2020 Part B for Electrical cables and wires

**Program operator:**

EPD-Global

**Declaration number:**

NEPD-17002-21124

**Issue date:**

10.07.2026

**Valid to:**

10.07.2031

**EPD software:**

LCAno EPD generator ID: 1639592

## General information

### Product

SICON Bolted Cable Lug (SICON-MCL-E50-300/35x122/22/16,5) - 332903022

### Program operator:

EPD-Global  
Post Box 5250 Majorstuen, 0303 Oslo, Norway  
Phone: +47 977 22 020  
web: [www.epd-global.com](http://www.epd-global.com)

### Declaration number:

NEPD-17002-21124

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

CEN Standard EN 15804:2012+A2:2019 serves as core PCR  
NPCR 027:2020 Part B for Electrical cables and wires

### Statement of liability:

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

### Declared unit:

1 pcs SICON Bolted Cable Lug (SICON-MCL-E50-300/35x122/22/16,5) - 332903022

### Declared unit with option:

A1, A2, A3, A4, A5, B1, B2, B3, B4, B5, B6, B7, C1, C2, C3, C4, D

### Functional unit:

To connect the power transmission cables or connect them to equipment for one unit and its packaging, under operating conditions identical to those of the cable, namely: during 40 years, with a use rate of 100 %, according to the standards in force.

### General information on verification of EPD from EPD tools:

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

### Verification of EPD tool:

### Owner of the declaration:

PFISTERER Holding SE  
Contact person: Tilo Grandy  
Phone: +49 151 55220619  
e-mail: [Tilo.Grandy@pfisterer.com](mailto:Tilo.Grandy@pfisterer.com)

### Manufacturer:

PFISTERER Holding SE  
Rosenstrasse 44  
73650 Winterbach, Germany

### Place of production:

Pfisterer production site - Gussenstadt (Germany)  
Bahnhofstraße 30  
89547 Gerstetten, Germany

### Management system:

ISO 9001, 14001, 45001; and for Kadan additionally ISO 50001

### Organisation no:

DE811239413

### Issue date:

10.07.2026

### Valid to:

10.07.2031

### Year of study:

2024

### Comparability:

EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not viewed 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-Global. Approval number: NEPDT199

Developer of EPD: Tilo Grandy

Reviewer of company-specific input data and EPD: Felix Fried

### Approved:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPD-Global's procedures and guidelines for verification and approval of EPD tools. Approval number: NEPDT32.



Håkon Hauan, CEO EPD-Global

Third party verifier:

Vito D'Incognito, Take Care International, Take Care International

(no signature required)

## Product

### Product description:

SICON connectors can be used independently of the conductor material, type, voltage level and current. Thanks to the special design of the bolt, optimal contact force is always achieved. The patented SICON bolt was developed without predetermined shear-off points. This means that the full load capacity of the thread is always used, thus ensuring perfect contact pressure. A friction disc on the tip of the bolt ensures that the conductor strands are not damaged. The bolt shears off smoothly when it is tightened. The remains stay in the tool and can be safely disposed of. The bolt always shears off at the top edge of the connector body. This way, there are no sharp protrusions. All edges of the connector body are rounded.

SICON connectors are electrically/mechanically type-tested in accordance with IEC 61238-1 class A.

### Product specification

Dimensions:

External diameter (mm) 35

Internal diameter (mm) 33

Total length (mm) 124

Width of mounting lug (mm) 28

Thickness of mounting lug (mm) 12

Length of mounting lug (mm) 48

Diameter of the mounting holes (mm) 16.5

| Materials | kg    | %      |
|-----------|-------|--------|
| Metal     | 0.239 | 97.55  |
| Plastic   | 0.006 | 2.45   |
| Total     | 0.245 | 100.00 |

| Packaging             | kg    | %      |
|-----------------------|-------|--------|
| Packaging             | 0.046 | 100.00 |
| Total incl. packaging | 0.291 | 100.00 |

### Technical data:

| Article no.                                            |                 | 332903022          |
|--------------------------------------------------------|-----------------|--------------------|
| Conductor cross section Al solid round                 | mm <sup>2</sup> | 50 - 300           |
| Conductor cross section Cu solid round                 | mm <sup>2</sup> | 50 - 300           |
| Conductor diameter Al/Cu solid round                   | mm              | 7.2-19.8           |
| Conductor cross section Al stranded round              | mm <sup>2</sup> | 50 - 240           |
| Conductor cross section Cu stranded round              | mm <sup>2</sup> | 50 - 240           |
| Conductor diameter Al/Cu stranded round                | mm              | 8.6-20.6           |
| Conductor cross section Al compacted stranded round    | mm <sup>2</sup> | 50 - 300           |
| Conductor cross section Cu compacted stranded round    | mm <sup>2</sup> | 50 - 300           |
| Conductor diameter Al/Cu compacted stranded round      | mm              | 7.7-21.6           |
| Conductor cross section Al solid sector-shaped 90°     | mm <sup>2</sup> | 50 - 240           |
| Conductor cross section Al solid sector-shaped 120°    | mm <sup>2</sup> | 50 - 185           |
| Conductor cross section Al stranded sector-shaped 90°  | mm <sup>2</sup> | 50 - 185           |
| Conductor cross section Cu stranded sector-shaped 90°  | mm <sup>2</sup> | 50 - 185           |
| Conductor cross section Al stranded sector-shaped 120° | mm <sup>2</sup> | 50 - 185 (rounded) |
| Conductor cross section Cu stranded sector-shaped 120° | mm <sup>2</sup> | 50 - 185 (rounded) |
| Number of screws                                       |                 | 2                  |
| Quantity of mounting holes                             |                 | 1                  |

### Market:

Europe

### Reference service life, product

40

### Reference service life, building or construction works

40

## LCA: Calculation rules

### Declared unit:

1 pcs SICON Bolted Cable Lug (SICON-MCL-E50-300/35x122/22/16,5) - 332903022

### 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.

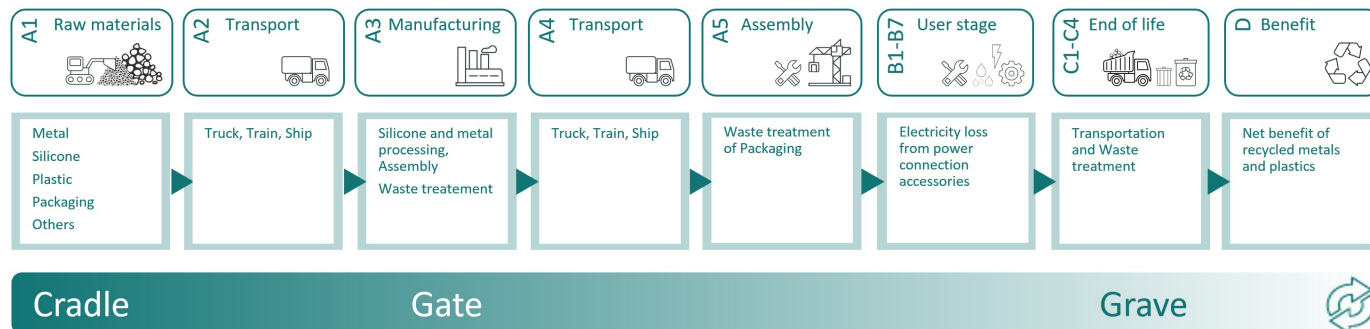
| Materials | Source                    | Data quality | Year |
|-----------|---------------------------|--------------|------|
| Metal     | ecoinvent 3.10.1          | Database     | 2023 |
| Metal     | ecoinvent 3.11            | Database     | 2024 |
| Metal     | Modified ecoinvent 3.10.1 | Database     | 2023 |
| Packaging | ecoinvent 3.10.1          | Database     | 2023 |
| Packaging | Modified ecoinvent 3.10.1 | Database     | 2023 |
| Plastic   | ecoinvent 3.10.1          | Database     | 2023 |
| Plastic   | Modified ecoinvent 3.10.1 | Database     | 2023 |

## 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        | X         | X           | X      | X           | X             | X                      | X                     | X                          | X         | X                | X        | X                                  |

### System boundary:

The flowchart below illustrates the system boundaries of the analysis:



### Additional technical information:

## LCA: Scenarios and additional technical information

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

Module A4 = Intracontinental transport applied: A default transport scenario was applied according to EN 50693. Intracontinental transport is assumed to occur by truck over 3500 km.

Modules A5 = Average waste treatment of packaging is accounted for in this module (when relevant). No energy use for installation has been quantified since manual installation performed with portable electrical devices typically results in negligible energy use.

Modules B1, B2, B3, B5, and B7 = Company data shows that no significant activities have been reported for use, maintenance, repair, replacement, refurbishment, and water use. This reflects an absence of impacts during the 40 years reference service life of the power connection accessory in these modules.

Module B6 = The operational energy use of the power connection accessory is calculated based on the methodology described in PEP Ecopassport, Product Specific Rules (PSR) for wires, cables and accessories, reference PSR-0001-ed4-EN-2022 11 16. The following parameters are used to calculate the electricity loss of the power connection accessory:

Calculate electricity loss over the power connection accessories:  $E = (R \times I^2 \times \Delta t)$  with  $R = Z \times L \times 10^{-3}$

o  $\Delta t$  = Time in use of 1 261 440 000 seconds – corresponding to the lifetime multiplied with the use rate. Expressed in seconds. Calculated with a reference service life of 40 years and a use rate of 100 percent (according to appendix 1 of the PSR).

o  $Z$  = Linear conductor resistivity of 0.1002 ohm per km – determined according to the PSR guidelines.

o  $L$  = Length of the conducting part of 0.059 meter.

o  $I$  = Current intensity of 630 A. Expressed in Ampere.

o  $10^{-3}$  = Conversion factor to meter (if  $Z$  is expressed in ohm per meter, this factor is not required)

o 3 600 000 = Conversion factor from Joules to kWh.

The B6 environmental impacts shall be calculated by the EPD user based on the actual intensity, expressed in ampere (A), during product use, by multiplying impacts by the square of this intensity. The EPD remains valid within an intensity range that considers the maximum admissible intensity.

Module C1 = No energy use for de-construction has been quantified since manual de-installation performed with portable electrical devices typically results in negligible energy use.

Module C2 = Example 1 – Local transport applied: A default transport scenario was applied according to EN 50693. Local transport is assumed to occur by truck over 1000 km.

Modules C3 and C4 = Waste treatment of the product follows the default values provided in EN 50693, Product Category Rules for life cycle assessments of electronic and electrical products and systems, table G.4. This table specified how different types of raw materials used in A1 will likely be treated during the end-of-life of the product. Waste treatments in C3 include material recycling and incineration with and without energy recovery and fly ash extraction. Disposal in C4 consist of landfilling of different waste fractions and of ashes.

Module D = The recyclability of metals and plastics allows the producers a credit for the net scrap that is produced at the end of a product's life. The benefits from recycling of net scrap are described in formula from EN 15804:2012+A2:2019. Substitution of heat and electricity generated by the incineration with energy recovery of plastic insulation and other parts is also calculated in module D.

| Transport from production place to user (A4)                                                      | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit  | Value (Liter/tonne) |
|---------------------------------------------------------------------------------------------------|---------------------------------------|---------------|-------------------------|-------|---------------------|
| Truck, over 32 tonnes, EURO 6 (kgkm) - RER                                                        | 55.0 %                                | 3500.00       | 0.023                   | l/tkm | 80.50               |
| Assembly (A5)                                                                                     | Unit                                  | Value         |                         |       |                     |
| Waste, plastic, mixture, to average treatment - A5 including transport (kg)                       | kg                                    | 0.0322        |                         |       |                     |
| Waste, cardboard and paper, to average treatment - A5 including transport (kg)                    | kg                                    | 0.0138        |                         |       |                     |
| Operational energy (B6)                                                                           | Unit                                  | Value         |                         |       |                     |
| Electricity, medium voltage   market group for electricity, medium voltage (kWh) - RER            | kWh                                   | 822.18        |                         |       |                     |
| 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                                                        | 55.0 %                                | 1000.00       | 0.023                   | l/tkm | 23.00               |
| Waste processing (C3)                                                                             | Unit                                  | Value         |                         |       |                     |
| Waste treatment of plastic mixture, incineration with energy recovery and fly ash extraction (kg) | kg                                    | 0.003         |                         |       |                     |
| Metal to recycling (kg)                                                                           | kg                                    | 0.1001        |                         |       |                     |
| Metal to recycling (kg)                                                                           | kg                                    | 0.032         |                         |       |                     |
| Metal to recycling (kg)                                                                           | kg                                    | 0.0336        |                         |       |                     |
| Disposal (C4)                                                                                     | Unit                                  | Value         |                         |       |                     |
| Landfilling of plastic mixture (kg)                                                               | kg                                    | 0.003         |                         |       |                     |
| Landfilling of metal (kg)                                                                         | kg                                    | 0.0429        |                         |       |                     |
| Landfilling of metal (kg)                                                                         | kg                                    | 0.008         |                         |       |                     |
| Landfilling of metal (kg)                                                                         | kg                                    | 0.0224        |                         |       |                     |
| Benefits and loads beyond the system boundaries (D)                                               | Unit                                  | Value         |                         |       |                     |
| Substitution of plastic, mixture (kg)                                                             | kg                                    | 0.003         |                         |       |                     |
| Substitution of primary metal with net scrap (kg)                                                 | kg                                    | 0.1001        |                         |       |                     |
| Substitution of primary metal with net scrap (kg)                                                 | kg                                    | 0.032         |                         |       |                     |
| Substitution of primary other non-ferrous metals with net scrap (kg)                              | kg                                    | 0.0336        |                         |       |                     |

## 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       | B1 | B2 | B3 |
|  | GWP-total                        | kg CO <sub>2</sub> -eq | 2.36E+00 | 7.50E-03 | 3.79E-01 | 1.05E-01 | 3.35E-03 | 0  | 0  | 0  |
|  | GWP-fossil                       | kg CO <sub>2</sub> -eq | 2.31E+00 | 7.49E-03 | 3.52E-01 | 1.05E-01 | 2.88E-03 | 0  | 0  | 0  |
|  | GWP-biogenic                     | kg CO <sub>2</sub> -eq | 4.21E-02 | 4.86E-06 | 2.62E-02 | 6.84E-05 | 4.75E-04 | 0  | 0  | 0  |
|  | GWP-luluc                        | kg CO <sub>2</sub> -eq | 1.16E-02 | 2.92E-06 | 5.29E-04 | 4.10E-05 | 2.95E-07 | 0  | 0  | 0  |
|  | ODP                              | kg CFC11 -eq           | 4.81E-08 | 1.44E-10 | 6.66E-09 | 2.04E-09 | 1.59E-10 | 0  | 0  | 0  |
|  | AP                               | mol H <sup>+</sup> -eq | 2.90E-02 | 1.77E-05 | 6.25E-04 | 2.49E-04 | 4.77E-06 | 0  | 0  | 0  |
|  | EP-FreshWater                    | kg P -eq               | 1.91E-03 | 5.24E-07 | 3.34E-04 | 7.36E-06 | 3.13E-08 | 0  | 0  | 0  |
|  | EP-Marine                        | kg N -eq               | 2.82E-03 | 4.64E-06 | 2.07E-04 | 6.52E-05 | 3.99E-06 | 0  | 0  | 0  |
|  | EP-Terrestrial                   | mol N -eq              | 3.01E-02 | 5.02E-05 | 1.54E-03 | 7.05E-04 | 1.80E-05 | 0  | 0  | 0  |
|  | POCP                             | kg NMVOC -eq           | 1.02E-02 | 3.07E-05 | 7.06E-04 | 4.32E-04 | 6.03E-06 | 0  | 0  | 0  |
|  | ADP-minerals&metals <sup>1</sup> | kg Sb-eq               | 2.54E-04 | 2.14E-08 | 6.18E-07 | 3.01E-07 | 1.46E-08 | 0  | 0  | 0  |
|  | ADP-fossil <sup>1</sup>          | MJ                     | 3.19E+01 | 1.13E-01 | 5.52E+00 | 1.58E+00 | 1.44E-02 | 0  | 0  | 0  |
|  | WDP <sup>1</sup>                 | m <sup>3</sup>         | 1.42E+00 | 5.76E-04 | 5.56E-02 | 8.10E-03 | 3.74E-02 | 0  | 0  | 0  |

| Indicator                                                                           |                                  | Unit                   | B4 | B5 | B6       | B7 | C1       | C2       | C3       | C4       | D         |
|-------------------------------------------------------------------------------------|----------------------------------|------------------------|----|----|----------|----|----------|----------|----------|----------|-----------|
|  | GWP-total                        | kg CO <sub>2</sub> -eq | 0  | 0  | 2.77E+02 | 0  | 0.00E+00 | 3.01E-02 | 2.82E-02 | 1.40E-03 | -9.88E-01 |
|  | GWP-fossil                       | kg CO <sub>2</sub> -eq | 0  | 0  | 2.66E+02 | 0  | 0.00E+00 | 3.01E-02 | 7.10E-03 | 1.40E-03 | -9.67E-01 |
|  | GWP-biogenic                     | kg CO <sub>2</sub> -eq | 0  | 0  | 9.99E+00 | 0  | 0.00E+00 | 1.95E-05 | 2.11E-02 | 3.05E-08 | -4.16E-03 |
|  | GWP-luluc                        | kg CO <sub>2</sub> -eq | 0  | 0  | 8.26E-01 | 0  | 0.00E+00 | 1.17E-05 | 2.88E-08 | 4.16E-07 | -1.69E-02 |
|  | ODP                              | kg CFC11 -eq           | 0  | 0  | 4.61E-06 | 0  | 0.00E+00 | 5.82E-10 | 1.60E-11 | 3.04E-10 | -7.75E-08 |
|  | AP                               | mol H <sup>+</sup> -eq | 0  | 0  | 1.36E+00 | 0  | 0.00E+00 | 7.10E-05 | 1.56E-06 | 8.40E-06 | -6.40E-03 |
|  | EP-FreshWater                    | kg P -eq               | 0  | 0  | 2.37E-01 | 0  | 0.00E+00 | 2.10E-06 | 1.37E-09 | 1.94E-08 | -3.89E-05 |
|  | EP-Marine                        | kg N -eq               | 0  | 0  | 2.35E-01 | 0  | 0.00E+00 | 1.86E-05 | 7.44E-07 | 3.37E-06 | -8.37E-04 |
|  | EP-Terrestrial                   | mol N -eq              | 0  | 0  | 2.04E+00 | 0  | 0.00E+00 | 2.02E-04 | 7.63E-06 | 3.39E-05 | -9.16E-03 |
|  | POCP                             | kg NMVOC -eq           | 0  | 0  | 6.77E-01 | 0  | 0.00E+00 | 1.23E-04 | 1.84E-06 | 9.66E-06 | -3.20E-03 |
|  | ADP-minerals&metals <sup>1</sup> | kg Sb-eq               | 0  | 0  | 5.94E-04 | 0  | 0.00E+00 | 8.61E-08 | 7.76E-10 | 8.24E-09 | 6.64E-08  |
|  | ADP-fossil <sup>1</sup>          | MJ                     | 0  | 0  | 6.29E+03 | 0  | 0.00E+00 | 4.52E-01 | 9.76E-04 | 2.50E-02 | -1.21E+01 |
|  | WDP <sup>1</sup>                 | m <sup>3</sup>         | 0  | 0  | 1.63E+02 | 0  | 0.00E+00 | 2.31E-03 | 7.05E-03 | 6.35E-01 | -5.06E+02 |

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"

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       | B1 | B2 | B3 |
|-------------------------------------------------------------------------------------------------------|-------------------|----------|----------|----------|----------|----------|----|----|----|
|  PM                  | Disease incidence | 1.66E-07 | 7.25E-10 | 3.96E-09 | 1.02E-08 | 8.10E-11 | 0  | 0  | 0  |
|  IRP <sup>2</sup>    | kgBq U235 -eq     | 3.12E-01 | 1.36E-04 | 5.98E-02 | 1.91E-03 | 5.46E-05 | 0  | 0  | 0  |
|  ETP-fw <sup>1</sup> | CTUe              | 2.58E+01 | 1.33E-02 | 1.02E+00 | 1.86E-01 | 1.78E-02 | 0  | 0  | 0  |
|  HTP-c <sup>1</sup>  | CTUh              | 3.90E-09 | 0.00E+00 | 6.90E-11 | 0.00E+00 | 0.00E+00 | 0  | 0  | 0  |
|  HTP-nc <sup>1</sup> | CTUh              | 2.41E-07 | 7.30E-11 | 2.05E-09 | 1.02E-09 | 2.10E-11 | 0  | 0  | 0  |
|  SQP <sup>1</sup>    | dimensionless     | 1.46E+01 | 1.13E-01 | 8.09E-01 | 1.59E+00 | 2.06E-02 | 0  | 0  | 0  |

| Indicator                                                                                             | Unit              | B4 | B5 | B6       | B7 | C1       | C2       | C3       | C4       | D         |
|-------------------------------------------------------------------------------------------------------|-------------------|----|----|----------|----|----------|----------|----------|----------|-----------|
|  PM                  | Disease incidence | 0  | 0  | 4.74E-06 | 0  | 0.00E+00 | 2.91E-09 | 6.00E-12 | 1.45E-10 | -6.83E-08 |
|  IRP <sup>2</sup>    | kgBq U235 -eq     | 0  | 0  | 1.76E+02 | 0  | 0.00E+00 | 5.45E-04 | 2.46E-06 | 1.66E-04 | -4.91E-02 |
|  ETP-fw <sup>1</sup> | CTUe              | 0  | 0  | 6.63E+02 | 0  | 0.00E+00 | 5.33E-02 | 1.50E-02 | 4.54E+01 | -1.75E+01 |
|  HTP-c <sup>1</sup>  | CTUh              | 0  | 0  | 5.51E-08 | 0  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.00E-12 | -2.60E-09 |
|  HTP-nc <sup>1</sup> | CTUh              | 0  | 0  | 2.38E-06 | 0  | 0.00E+00 | 2.91E-10 | 1.80E-11 | 3.80E-11 | -1.87E-08 |
|  SQP <sup>1</sup>    | dimensionless     | 0  | 0  | 1.07E+03 | 0  | 0.00E+00 | 4.55E-01 | 1.78E-04 | 4.47E-02 | -1.49E-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 = Potential Soil Quality Index (dimensionless)

"Reading example: 9.0 E-03 = 9.0\*10<sup>-3</sup> = 0.009"

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator
2. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

| Resource use                                                                            |                |          |          |           |          |          |    |    |    |  |
|-----------------------------------------------------------------------------------------|----------------|----------|----------|-----------|----------|----------|----|----|----|--|
| Indicator                                                                               | Unit           | A1       | A2       | A3        | A4       | A5       | B1 | B2 | B3 |  |
|  PERE  | MJ             | 5.81E+00 | 1.83E-03 | 9.52E-01  | 2.58E-02 | 3.71E-04 | 0  | 0  | 0  |  |
|  PERM  | MJ             | 1.80E-01 | 0.00E+00 | -3.54E-03 | 0.00E+00 | 0.00E+00 | 0  | 0  | 0  |  |
|  PERT  | MJ             | 5.99E+00 | 1.83E-03 | 9.48E-01  | 2.58E-02 | 3.71E-04 | 0  | 0  | 0  |  |
|  PENRE | MJ             | 3.05E+01 | 1.13E-01 | 5.35E+00  | 1.58E+00 | 1.44E-02 | 0  | 0  | 0  |  |
|  PENRM | MJ             | 1.43E+00 | 0.00E+00 | -1.22E+00 | 0.00E+00 | 0.00E+00 | 0  | 0  | 0  |  |
|  PENRT | MJ             | 3.19E+01 | 1.13E-01 | 4.13E+00  | 1.58E+00 | 1.44E-02 | 0  | 0  | 0  |  |
|  SM    | kg             | 3.86E-01 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0  | 0  | 0  |  |
|  RSF   | MJ             | 2.46E-03 | 6.14E-07 | 1.13E-05  | 8.63E-06 | 7.00E-06 | 0  | 0  | 0  |  |
|  NRSF  | MJ             | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 1.82E-05 | 0  | 0  | 0  |  |
|  FW    | m <sup>3</sup> | 3.77E-02 | 1.66E-05 | 2.12E-03  | 2.33E-04 | 9.87E-06 | 0  | 0  | 0  |  |

| Indicator                                                                                 | Unit           | B4 | B5 | B6       | B7 | C1       | C2       | C3        | C4       | D         |
|-------------------------------------------------------------------------------------------|----------------|----|----|----------|----|----------|----------|-----------|----------|-----------|
|  PERE    | MJ             | 0  | 0  | 1.47E+03 | 0  | 0.00E+00 | 7.36E-03 | 5.43E-05  | 3.43E-03 | -4.15E+00 |
|  PERM    | MJ             | 0  | 0  | 0.00E+00 | 0  | 0.00E+00 | 0.00E+00 | -1.77E-01 | 0.00E+00 | 0.00E+00  |
|  PERT    | MJ             | 0  | 0  | 1.47E+03 | 0  | 0.00E+00 | 7.36E-03 | -1.77E-01 | 3.43E-03 | -4.15E+00 |
|  PENRE  | MJ             | 0  | 0  | 6.29E+03 | 0  | 0.00E+00 | 4.52E-01 | 9.76E-04  | 2.50E-02 | -1.20E+01 |
|  PENRM | MJ             | 0  | 0  | 0.00E+00 | 0  | 0.00E+00 | 0.00E+00 | -1.39E+00 | 0.00E+00 | -1.27E-01 |
|  PENRT | MJ             | 0  | 0  | 6.29E+03 | 0  | 0.00E+00 | 4.52E-01 | -1.39E+00 | 2.50E-02 | -1.21E+01 |
|  SM    | kg             | 0  | 0  | 0.00E+00 | 0  | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | -1.31E-05 |
|  RSF   | MJ             | 0  | 0  | 2.78E-03 | 0  | 0.00E+00 | 2.47E-06 | 1.17E-06  | 7.11E-05 | 7.23E-04  |
|  NRSF  | MJ             | 0  | 0  | 0.00E+00 | 0  | 0.00E+00 | 0.00E+00 | 0.00E+00  | 1.07E-06 | 8.19E-02  |
|  FW    | m <sup>3</sup> | 0  | 0  | 5.23E+00 | 0  | 0.00E+00 | 6.67E-05 | 8.26E-06  | 3.27E-05 | -2.26E-02 |

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9.0 E-03 = 9.0\*10<sup>-3</sup> = 0.009"

| End of life - Waste                                                               |      |      |          |          |          |          |          |    |    |    |
|-----------------------------------------------------------------------------------|------|------|----------|----------|----------|----------|----------|----|----|----|
| Indicator                                                                         |      | Unit | A1       | A2       | A3       | A4       | A5       | B1 | B2 | B3 |
|  | HWD  | kg   | 4.23E-01 | 1.63E-04 | 3.91E-02 | 2.29E-03 | 4.57E-06 | 0  | 0  | 0  |
|  | NHWD | kg   | 1.56E+01 | 3.26E-03 | 1.65E+00 | 4.58E-02 | 3.60E-02 | 0  | 0  | 0  |
|  | RWD  | kg   | 7.79E-05 | 3.35E-08 | 1.75E-05 | 4.72E-07 | 1.01E-09 | 0  | 0  | 0  |

| Indicator                                                                         |      | Unit | B4 | B5 | B6       | B7 | C1       | C2       | C3       | C4       | D         |
|-----------------------------------------------------------------------------------|------|------|----|----|----------|----|----------|----------|----------|----------|-----------|
|  | HWD  | kg   | 0  | 0  | 1.43E+01 | 0  | 0.00E+00 | 6.54E-04 | 0.00E+00 | 2.75E-03 | 3.37E-03  |
|  | NHWD | kg   | 0  | 0  | 1.17E+03 | 0  | 0.00E+00 | 1.31E-02 | 0.00E+00 | 7.74E-02 | -2.88E-01 |
|  | RWD  | kg   | 0  | 0  | 4.52E-02 | 0  | 0.00E+00 | 1.35E-07 | 0.00E+00 | 1.74E-07 | -4.61E-05 |

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"

| End of life - Output flow                                                          |     |      |          |          |          |          |          |    |    |    |
|------------------------------------------------------------------------------------|-----|------|----------|----------|----------|----------|----------|----|----|----|
| Indicator                                                                          |     | Unit | A1       | A2       | A3       | A4       | A5       | B1 | B2 | B3 |
|   | CRU | kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0  | 0  | 0  |
|   | MFR | kg   | 0.00E+00 | 0.00E+00 | 2.59E-01 | 0.00E+00 | 2.66E-02 | 0  | 0  | 0  |
|   | MER | kg   | 0.00E+00 | 0.00E+00 | 5.79E-03 | 0.00E+00 | 1.61E-06 | 0  | 0  | 0  |
|   | EEE | MJ   | 0.00E+00 | 0.00E+00 | 1.22E-04 | 0.00E+00 | 3.16E-06 | 0  | 0  | 0  |
|  | EET | MJ   | 0.00E+00 | 0.00E+00 | 8.32E-05 | 0.00E+00 | 3.85E-05 | 0  | 0  | 0  |

| Indicator                                                                           |     | Unit | B4 | B5 | B6       | B7 | C1       | C2       | C3       | C4       | D         |
|-------------------------------------------------------------------------------------|-----|------|----|----|----------|----|----------|----------|----------|----------|-----------|
|  | CRU | kg   | 0  | 0  | 0.00E+00 | 0  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  |
|  | MFR | kg   | 0  | 0  | 0.00E+00 | 0  | 0.00E+00 | 0.00E+00 | 1.66E-01 | 2.69E-07 | -2.10E-06 |
|  | MER | kg   | 0  | 0  | 0.00E+00 | 0  | 0.00E+00 | 0.00E+00 | 3.00E-03 | 6.58E-09 | -7.91E-06 |
|  | EEE | MJ   | 0  | 0  | 0.00E+00 | 0  | 0.00E+00 | 0.00E+00 | 4.61E-03 | 4.27E-07 | -1.16E-05 |
|  | EET | MJ   | 0  | 0  | 0.00E+00 | 0  | 0.00E+00 | 0.00E+00 | 6.97E-02 | 6.46E-06 | -1.76E-04 |

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"

| 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 | 5.86E-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).

### Dangerous substances

The product contains dangerous substances, more than 0,1% by weight, given by the REACH Candidate List, see table:

| Name | CASNo     | Amount  |
|------|-----------|---------|
| Lead | 7439-92-1 | 0,00168 |

### Indoor environment

Not relevant

## Additional Environmental Information

### Additional environmental impact indicators required in NPCR Part A for construction products

| Indicator | Unit                   | A1       | A2       | A3       | A4       | A5       | B1 | B2 | B3 |
|-----------|------------------------|----------|----------|----------|----------|----------|----|----|----|
| GWPIOBC   | kg CO <sub>2</sub> -eq | 2.35E+00 | 7.50E-03 | 3.54E-01 | 1.05E-01 | 3.35E-03 | 0  | 0  | 0  |

| Indicator | Unit                   | B4 | B5 | B6       | B7 | C1       | C2       | C3       | C4       | D         |
|-----------|------------------------|----|----|----------|----|----------|----------|----------|----------|-----------|
| GWPIOBC   | kg CO <sub>2</sub> -eq | 0  | 0  | 2.67E+02 | 0  | 0.00E+00 | 3.01E-02 | 7.10E-03 | 1.40E-03 | -9.64E-01 |

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.

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