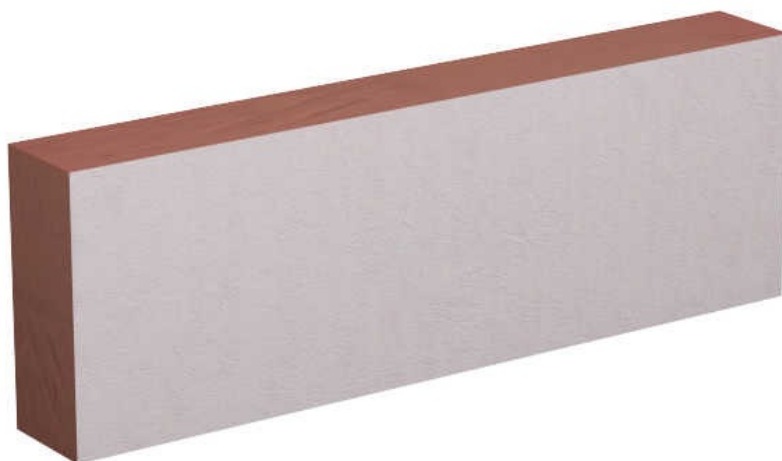


# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

## Sto-Resol Insulation Board



**Owner of the declaration:**

Sto SE & Co. KGaA

**Product:**

Sto-Resol Insulation Board

**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:**

EPD-Global

**Declaration number:**

NEPD-14360-14758

**Issue date:**

05.12.2025

**Valid to:**

05.12.2030

**EPD software:**

LCAno EPD generator ID: 1057811

## General information

### Product

Sto-Resol Insulation Board

### 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-14360-14758

### 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-Global shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

### Declared unit:

1 m2 Sto-Resol Insulation Board

### Declared unit with option:

A1-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-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:

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.

Third party verifier:

Elisabet Amat, GREENIZE projects

(no signature required)

### Owner of the declaration:

Sto SE & Co. KGaA  
Contact person: Linus Kaltenbach  
Phone: +49 7744571010  
e-mail: [l.kaltenbach@sto.com](mailto:l.kaltenbach@sto.com)

### Manufacturer:

Sto SE & Co. KGaA  
Ehrenbachstraße 1  
79780 Stühlingen, Germany

### Place of production:

Weizen  
Ehrenbachstraße 1  
79780 Stühlingen, Germany

### Management system:

ISO 14001; ISO 50001; ISO 9001

### Organisation no:

DE142834082

### Issue date:

05.12.2025

### Valid to:

05.12.2030

### Year of study:

2022

### 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-Global. NEPDT143

Developer of EPD: Linus Kaltenbach

Reviewer of company-specific input data and EPD: Karin Bromoe

### Approved:



Håkon Hauan, CEO EPD-Global

## Product

### Product description:

Sto-Resol Insulation Board is a thermal insulation board made from rigid phenolic foam and glass fleece facings on both sides in accordance with EN 13166. The use of the product is in exterior application, for example in wall insulation systems such as StoTherm Resol and StoTherm Resol Plus. The product is available with a thickness between 2 cm and 20 cm. Sto is acting as trader for the insulation board. The supplier is located in Europe.

This EPD covers the insulation board with a thickness of 10 cm and a format of 120 x 40 cm and a RD-value of 4,75 m<sup>2</sup>·K/W. The grammage is equal to 3.88 kg/ m<sup>2</sup>. If calculating different thicknesses, it is paramount to use the calculation table provided by Sto for the correct result.

For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) Regulation (EU) No. 305/2011 (CPR) applies. The product needs a declaration of performance taking into consideration EN 13166 - Thermal insulation products for buildings - Factory made phenolic foam (PF) products - Specification and the CE-marking. For the application and use the respective national provisions apply.

### Product specification

In the current REACH regulations, phenolic foam insulation products are considered 'articles' and are exempt from the requirements of Article 57 and 59(1) of REACH Regulation (EC) No 1907/2006. These products are not classified as 'hazardous products' according to any current legislation, and can hence be declared as follows:

- This article contains substances listed in the candidate list (date: 12.07.2024) exceeding 0.1 percentage by mass: no.
- This article contains other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: no.
- Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Biocidal Products Regulation No. 528/2012 (BPR): no.'

The chemical functional group of the additives used in the resin is that of non-ionic surfactants. The blowing agent is permanent due to the closed cell structure.

The main materials of Sto-Resol Insulation Board are as stated below. The exact amount depends on the thickness of the board.

| Materials            | Value   | Unit |
|----------------------|---------|------|
| Phenolic resin       | 65 - 75 | %    |
| Additives            | 15 - 20 | %    |
| Glass fleece facings | < 12    | %    |
| Blowing agent        | 5 -7    | %    |

### Technical data:

The technical data stated here is relevant for the use of the declared product. Further information regarding the technical properties can be found in the Technical Data Sheet on [www.sto.de](http://www.sto.de).

| Criterion                                                   | Standard/Test specification | Value/Unit            | Notes                                       |
|-------------------------------------------------------------|-----------------------------|-----------------------|---------------------------------------------|
| Water vapour diffusion equivalent air layer thickness $\mu$ | EN 12086                    | 20 - 50               |                                             |
| Water absorption                                            | EN 1609                     | < 1 kg/m <sup>2</sup> |                                             |
| Tensile strength perpendicular to faces                     | EN 1607                     | = 80 kPa              |                                             |
| Shear modulus G                                             | EN 12090                    | > 250 kPa             |                                             |
| Shear strength                                              | EN 12090                    | > 30 kPa              |                                             |
| Declared thermal conductivity                               |                             | 0.021 W/(m·K)         | in accordance with approval of manufacturer |
| Reaction to fire (class)                                    | EN 13501-1                  | C-s2,d0               |                                             |

### Market:

The main market and place where the product is handled at the end of life is Europe.

### Reference service life, product

A reference service life (RSL) as per ISO 15686-1, -2, - 7, and -8 is not declared.

### Reference service life, building or construction works

## LCA: Calculation rules

### Declared unit:

1 m2 Sto-Resol Insulation Board

#### 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.

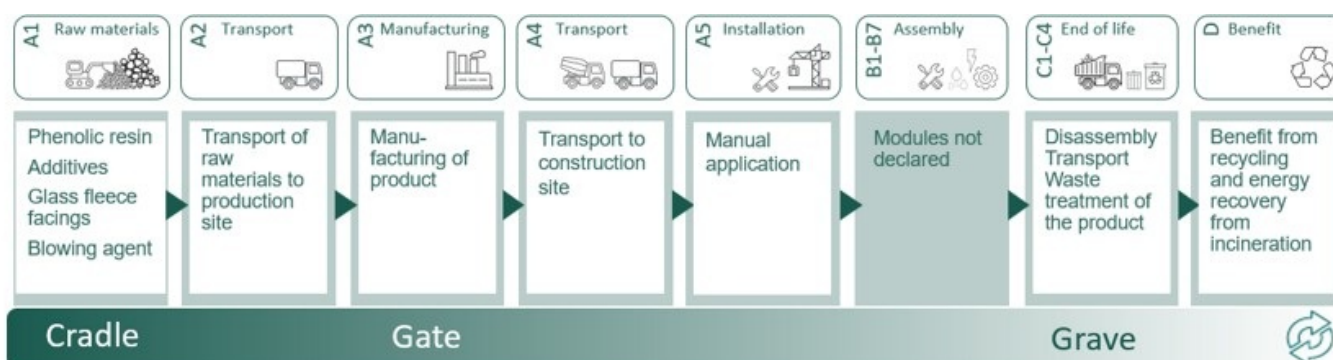
| Materials  | Source   | Data quality | Year |
|------------|----------|--------------|------|
| Insulation | Supplier | EPD          | 2022 |

## 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:

The scope of this EPD is cradle to gate with options, modules C1-C4 and module D. No actions are necessary during User stage.



The attached table allows to calculate the GWP indicators for different thicknesses. If calculating the other environmental indicators, it is paramount to use an additional calculation table provided by Sto for the correct result.

| A1-A3      | 20 mm | 30 mm | 40 mm | 50 mm | 60 mm | 70 mm | 80 mm | 90 mm | 100 mm | 120 mm | 140 mm | 160 mm | 180 mm | 200 mm |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| GWP-total  | 0.28  | 0.37  | 0.44  | 0.53  | 0.63  | 0.72  | 0.81  | 0.91  | 1      | 1.24   | 1.44   | 1.65   | 1.84   | 2.02   |
| GWP-fossil | 0.28  | 0.37  | 0.44  | 0.53  | 0.63  | 0.72  | 0.81  | 0.91  | 1      | 1.24   | 1.44   | 1.65   | 1.84   | 2.02   |
| GWP-bio.   | 0.22  | 0.32  | 0.41  | 0.51  | 0.60  | 0.70  | 0.80  | 0.90  | 1      | 1.28   | 1.50   | 1.58   | 1.78   | 1.98   |
| GWP-luluc  | 0.24  | 0.34  | 0.42  | 0.52  | 0.61  | 0.71  | 0.81  | 0.90  | 1      | 1.27   | 1.49   | 1.61   | 1.81   | 2      |
| C1-C4      | 20 mm | 30 mm | 40 mm | 50 mm | 60 mm | 70 mm | 80 mm | 90 mm | 100 mm | 120 mm | 140 mm | 160 mm | 180 mm | 200 mm |
| GWP-total  | 0.28  | 0.37  | 0.45  | 0.55  | 0.64  | 0.70  | 0.81  | 0.93  | 1      | 1.23   | 1.43   | 1.64   | 1.86   | 2.03   |
| GWP-fossil | 0.28  | 0.37  | 0.45  | 0.55  | 0.64  | 0.70  | 0.81  | 0.93  | 1      | 1.23   | 1.43   | 1.64   | 1.86   | 2.04   |
| GWP-bio.   | 0.28  | 0.37  | 0.45  | 0.55  | 0.64  | 0.71  | 0.81  | 0.93  | 1      | 1.23   | 1.43   | 1.64   | 1.86   | 2.04   |
| GWP-luluc  | 0.32  | 0.40  | 0.48  | 0.57  | 0.66  | 0.72  | 0.82  | 0.93  | 1      | 1.22   | 1.41   | 1.69   | 1.90   | 2.07   |
| D          | 20 mm | 30 mm | 40 mm | 50 mm | 60 mm | 70 mm | 80 mm | 90 mm | 100 mm | 120 mm | 140 mm | 160 mm | 180 mm | 200 mm |
| GWP-total  | 0.28  | 0.37  | 0.45  | 0.55  | 0.64  | 0.70  | 0.81  | 0.92  | 1      | 1.23   | 1.43   | 1.63   | 1.86   | 2.03   |
| GWP-fossil | 0.28  | 0.37  | 0.45  | 0.55  | 0.64  | 0.70  | 0.81  | 0.92  | 1      | 1.23   | 1.43   | 1.63   | 1.86   | 2.03   |
| GWP-bio.   | 0.28  | 0.37  | 0.45  | 0.55  | 0.64  | 0.70  | 0.81  | 0.92  | 1      | 1.23   | 1.43   | 1.63   | 1.86   | 2.03   |
| GWP-luluc  | 0.28  | 0.37  | 0.45  | 0.55  | 0.64  | 0.70  | 0.81  | 0.92  | 1      | 1.23   | 1.43   | 1.63   | 1.86   | 2.03   |

### Additional technical information:

## LCA: Scenarios and additional technical information

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

A4 (Transport to market/building site): Since the distance to the construction site can vary strongly, a distance of 300 km is used to allow simple scaling for individual projects.

A5 (Installation): The product is applied according to the specification in the technical data sheet at the building site. Installation can generally be done manually. Some additional energy is considered for preparing and applying the adhesive. Outputs are small amounts of waste from the product itself (assumed to be less than 3%).

C1 (De-construction, demolition): In this LCA it is assumed that Sto-Resol Insulation Board is dismantled using machinery.

C2 (Transport end of life): This stage includes the transportation effects of demolished waste to a waste processing area. The distance between the demolishing area and a waste processing area is assumed to be quite short (less than 100 km).

C3, C4 (Waste processing): The insulation board is not classified as hazardous waste. In this LCA, incineration is assumed as a typical waste scenario.

D (Environmental costs and benefits of recycling and reuse): Energy credit related to energy recovery from the incineration is included in module D.

Stages not included:

Once installation is complete, no actions or technical operations are required during the use stage until the end of life stage. Stages B1-B7 are therefore not included.

| 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 %                                | 300.00        | 0.043                   | l/tkm | 12.90               |
| Assembly (A5)                                                                                              | Unit                                  | Value         |                         |       |                     |
| Material loss, including waste treatment (psc)                                                             | Units                                 | 0.03          |                         |       |                     |
| Diesel (L)                                                                                                 | L                                     | 0.000756      |                         |       |                     |
| De-construction demolition (C1)                                                                            | Unit                                  | Value         |                         |       |                     |
| Diesel (L)                                                                                                 | L                                     | 0.000776      |                         |       |                     |
| Transport to waste processing (C2)                                                                         | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit  | Value (Liter/tonne) |
| Truck, 16-32 tonnes, EURO 6 (kgkm)                                                                         | 36.7 %                                | 100.00        | 0.043                   | l/tkm | 4.30                |
| Waste processing (C3)                                                                                      | Unit                                  | Value         |                         |       |                     |
| Waste treatment per kg Non-hazardous waste, incineration with fly ash extraction - C3 (kg)                 | kg                                    | 3.88          |                         |       |                     |
| Disposal (C4)                                                                                              | Unit                                  | Value         |                         |       |                     |
| Landfilling of ashes from incineration of Non-hazardous waste, process per kg ashes and residues - C4 (kg) | kg                                    | 0.9206        |                         |       |                     |
| Benefits and loads beyond the system boundaries (D)                                                        | Unit                                  | Value         |                         |       |                     |
| Substitution of thermal energy, district heating (MJ)                                                      | MJ                                    | 34.88         |                         |       |                     |
| Substitution of electricity (MJ)                                                                           | MJ                                    | 2.31          |                         |       |                     |

## 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 | 8.15E+00  | 1.90E-01 | 5.27E-01  | 2.74E-03 | 6.34E-02 | 9.09E+00  | 2.55E-03 | -2.10E-01 |  |
|  GWP-fossil                       | kg CO <sub>2</sub> -eq | 8.11E+00  | 1.90E-01 | 5.26E-01  | 2.74E-03 | 6.34E-02 | 9.09E+00  | 2.55E-03 | -2.02E-01 |  |
|  GWP-biogenic                     | kg CO <sub>2</sub> -eq | -6.26E-02 | 7.87E-05 | -1.87E-03 | 5.14E-07 | 2.62E-05 | 0.00E+00  | 0.00E+00 | -4.18E-04 |  |
|  GWP-luluc                        | kg CO <sub>2</sub> -eq | 9.95E-02  | 6.77E-05 | 2.99E-03  | 2.16E-07 | 2.26E-05 | 1.52E-04  | 7.85E-07 | -6.97E-03 |  |
|  ODP                              | kg CFC11 -eq           | 4.26E-08  | 4.31E-08 | 5.43E-09  | 5.92E-10 | 1.44E-08 | 6.01E-08  | 8.54E-10 | -1.47E-02 |  |
|  AP                               | mol H <sup>+</sup> -eq | 1.59E-02  | 5.46E-04 | 5.68E-04  | 2.87E-05 | 1.82E-04 | 1.30E-03  | 1.87E-05 | -1.67E-03 |  |
|  EP-FreshWater                    | kg P -eq               | 2.96E-05  | 1.52E-06 | 1.14E-06  | 9.99E-09 | 5.06E-07 | 6.01E-06  | 2.57E-08 | -1.80E-05 |  |
|  EP-Marine                        | kg N -eq               | 4.59E-03  | 1.08E-04 | 1.70E-04  | 1.27E-05 | 3.60E-05 | 4.84E-04  | 6.65E-06 | -5.45E-04 |  |
|  EP-Terrestrial                   | mol N -eq              | 4.56E-02  | 1.21E-03 | 1.70E-03  | 1.39E-04 | 4.03E-04 | 4.80E-03  | 7.33E-05 | -5.89E-03 |  |
|  POCP                             | kg NMVOC -eq           | 2.26E-02  | 4.63E-04 | 7.70E-04  | 3.82E-05 | 1.54E-04 | 1.18E-03  | 2.12E-05 | -1.62E-03 |  |
|  ADP-minerals&metals <sup>1</sup> | kg Sb-eq               | 1.13E-05  | 5.25E-06 | 6.27E-07  | 4.21E-09 | 1.75E-06 | 2.41E-06  | 4.53E-08 | -2.01E-06 |  |
|  ADP-fossil <sup>1</sup>          | MJ                     | 2.43E+02  | 2.87E+00 | 7.48E+00  | 3.77E-02 | 9.58E-01 | 1.56E+00  | 6.22E-02 | -2.89E+00 |  |
|  WDP <sup>1</sup>                 | m <sup>3</sup>         | 2.90E+00  | 2.78E+00 | -5.86E-01 | 8.02E-03 | 9.27E-01 | -2.65E+01 | 1.19E-01 | -3.60E+01 |  |

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-A3    | A4       | A5       | C1       | C2       | C3       | C4       | D         |
|-------------------------------------------------------------------------------------------------------|-------------------|----------|----------|----------|----------|----------|----------|----------|-----------|
|  PM                  | Disease incidence | 1.72E-07 | 1.16E-08 | 6.61E-09 | 7.59E-10 | 3.88E-09 | 7.29E-09 | 3.42E-10 | -1.01E-07 |
|  IRP <sup>2</sup>    | kgBq U235 -eq     | 3.78E-01 | 1.26E-02 | 1.22E-02 | 1.62E-04 | 4.19E-03 | 6.08E-03 | 2.52E-04 | -1.85E-02 |
|  ETP-fw <sup>1</sup> | CTUe              | 9.09E+01 | 2.13E+00 | 3.55E+00 | 2.06E-02 | 7.10E-01 | 2.39E+01 | 6.51E-02 | -1.57E+01 |
|  HTP-c <sup>1</sup>  | CTUh              | 3.75E-09 | 0.00E+00 | 1.36E-10 | 1.00E-12 | 0.00E+00 | 7.45E-10 | 4.00E-12 | -2.88E-10 |
|  HTP-nc <sup>1</sup> | CTUh              | 1.30E-07 | 2.33E-09 | 4.50E-09 | 1.90E-11 | 7.76E-10 | 1.58E-08 | 1.24E-10 | -1.51E-08 |
|  SQP <sup>1</sup>    | dimensionless     | 1.67E+01 | 2.01E+00 | 5.97E-01 | 4.79E-03 | 6.70E-01 | 3.12E-01 | 8.71E-02 | -1.93E+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 =  $9.0 \cdot 10^{-3}$  = 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-A3    | A4       | A5       | C1       | C2       | C3        | C4       | D         |
|  | PERE  | MJ             | 2.71E+01 | 4.12E-02 | 8.20E-01 | 2.04E-04 | 1.37E-02 | 1.52E-01  | 1.13E-03 | -1.79E+01 |
|  | 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  |
|  | PERT  | MJ             | 2.71E+01 | 4.12E-02 | 8.20E-01 | 2.04E-04 | 1.37E-02 | 1.52E-01  | 1.13E-03 | -1.79E+01 |
|  | PENRE | MJ             | 1.22E+02 | 2.87E+00 | 3.86E+00 | 3.78E-02 | 9.58E-01 | 1.96E+00  | 6.26E-02 | -2.89E+00 |
|  | PENRM | MJ             | 1.21E+02 | 0.00E+00 | 3.60E-11 | 0.00E+00 | 0.00E+00 | -1.21E+02 | 0.00E+00 | 0.00E+00  |
|  | PENRT | MJ             | 2.43E+02 | 2.87E+00 | 3.86E+00 | 3.78E-02 | 9.58E-01 | -1.19E+02 | 6.26E-02 | -2.89E+00 |
|  | SM    | 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  |
|  | RSF   | MJ             | 8.47E-04 | 1.47E-03 | 2.05E-04 | 5.02E-06 | 4.91E-04 | 3.81E-03  | 2.91E-05 | -3.13E-03 |
|  | NRSF  | MJ             | 3.03E-03 | 5.26E-03 | 3.76E-04 | 7.39E-05 | 1.75E-03 | 0.00E+00  | 0.00E+00 | -1.06E+00 |
|  | FW    | m <sup>3</sup> | 5.12E-02 | 3.07E-04 | 1.63E-03 | 1.94E-06 | 1.02E-04 | 2.73E-03  | 5.77E-05 | -2.15E-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 =  $9.0 \cdot 10^{-3}$  = 0.009"

| End of life - Waste                                                               |      |       |          |          |          |          |          |          |          |           |
|-----------------------------------------------------------------------------------|------|-------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Indicator                                                                         | Unit | A1-A3 | A4       | A5       | C1       | C2       | C3       | C4       | D        |           |
|  | HWD  | kg    | 2.05E-04 | 1.48E-04 | 2.37E-02 | 1.11E-06 | 4.94E-05 | 0.00E+00 | 7.90E-01 | -1.36E-04 |
|  | NHWD | kg    | 1.92E-01 | 1.40E-01 | 1.32E-01 | 4.47E-05 | 4.66E-02 | 3.88E+00 | 1.31E-01 | -6.83E-02 |
|  | RWD  | kg    | 2.32E-03 | 1.96E-05 | 7.07E-05 | 2.62E-07 | 6.53E-06 | 0.00E+00 | 1.48E-06 | -1.51E-05 |

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

"Reading example: 9.0 E-03 =  $9.0 \times 10^{-3}$  = 0.009"

| 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    | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
|  | MER  | kg    | 0.00E+00 | 0.00E+00 | 1.16E-01 | 0.00E+00 | 0.00E+00 | 3.88E+00 | 0.00E+00 | 0.00E+00 |
|  | EEE  | MJ    | 0.00E+00 | 0.00E+00 | 4.04E-05 | 0.00E+00 | 0.00E+00 | 1.35E-03 | 0.00E+00 | 0.00E+00 |
|  | EET  | MJ    | 0.00E+00 | 0.00E+00 | 6.11E-04 | 0.00E+00 | 0.00E+00 | 2.04E-02 | 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 =  $9.0 \times 10^{-3}$  = 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 | 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).

### 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 | 8.15E+00 | 1.90E-01 | 5.28E-01 | 2.74E-03 | 6.34E-02 | 9.09E+00 | 1.04E-02 | -2.07E-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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