

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Uldal Toppsving Tre



The Norwegian EPD Foundation

**Owner of the declaration:**

Uldal AS

**Product:**

Uldal Toppsving Tre

**Declared unit:**

1 pcs

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

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

NPCR 014:2019 Part B for Windows and doors

**Program operator:**

The Norwegian EPD Foundation

**Declaration number:**

NEPD-12323-12379

**Registration number:**

NEPD-12323-12379

**Issue date:**

12.09.2025

**Valid to:**

12.09.2030

**EPD software:**

LCAno EPD generator ID: 1116103

## General information

### Product

Uldal Toppsving Tre

### Program operator:

The Norwegian EPD Foundation  
Post Box 5250 Majorstuen, 0303 Oslo, Norway  
Phone: +47 977 22 020  
web: [www.epd-norge.no](http://www.epd-norge.no)

### Declaration number:

NEPD-12323-12379

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

CEN Standard EN 15804:2012+A2:2019 serves as core PCR  
NPCR 014:2019 Part B for Windows and doors

### 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 pcs Uldal Toppsving Tre

### Declared unit with option:

A1-A3, A4, A5, B2, B4, C1, C2, C3, C4, D

### Functional unit:

1 top swing sash window measuring 1.23 m x 1.48 m (ref. EN 14351-1) with an expected service life of 40 yrs. Without alu clad. U-value = 0,79W/m2K.

### 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.

Third party verifier:

Gaylord K. Booto, Norwegian Institute for Air Research (NILU)

(no signature required)

### Owner of the declaration:

Uldal AS  
Contact person: Jonas Heilberg  
Phone: +47 38 13 71 00  
e-mail: [uldal@byggma.no](mailto:uldal@byggma.no)

### Manufacturer:

Uldal AS

### Place of production:

Uldal AS  
Mosfjellveien 15  
4760 Birkeland, Norway

### Management system:

### Organisation no:

947895788

### Issue date:

12.09.2025

### Valid to:

12.09.2030

### Year of study:

2023

### 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. NEPDT138

Developer of EPD: Jonas Heilberg

Reviewer of company-specific input data and EPD: Bente J Birkenes

### Approved:



Håkon Hauan, CEO EPD-Norge

## Product

### Product description:

Uldal window for exterior walls of buildings for domestic and commercial use

### Product specification

Top swing sash window

Made by finger-jointed, laminated pine

Made in Norway

| Materials                          | kg     | %       |
|------------------------------------|--------|---------|
| Adhesive and sealant               | 0,04   | 0,05799 |
| Metal - Aluminium                  | 0,2168 | 0,3143  |
| Metal - Galvanized Steel           | 3,80   | 5,51    |
| Paint, water-based                 | 0,45   | 0,6524  |
| Plastic - Polyvinyl chloride (PVC) | 1,90   | 2,75    |
| Powder coating                     | 0,001  | 0,00145 |
| Rubber, synthetic                  | 0,466  | 0,6756  |
| Triple glazing                     | 41,10  | 59,59   |
| Wood - Laminated wood              | 21,00  | 30,45   |
| Total                              | 68,97  | 100,00  |

| Packaging                     | kg    | %      |
|-------------------------------|-------|--------|
| Packaging - Plastic straps    | 0,02  | 0,36   |
| Packaging - Wood              | 5,00  | 90,58  |
| Plastic - Polyethylene (LDPE) | 0,50  | 9,06   |
| Total incl. packaging         | 74,49 | 100,00 |

### Technical data:

External measurements are 1230mm with and 1480mm height

Dept of the wood frame is 115mm

1,82m<sup>2</sup> total product area (0,549 conversion factor to 1m<sup>2</sup>)

With 3-layer glass and 2 energy coatings (4E+20G+4+20G+E4)

### Market:

Made in Norway for the Norwegian market, but with the possibility for export

### Reference service life, product

40 Years

### Reference service life, building or construction works

60 Years

## LCA: Calculation rules

### Declared unit:

1 pcs Uldal Toppsving Tre

### 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. 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. The PCR specific background data follow the allocation rules in the Ecoinvent v3.7.1 Cut-off database version. The allocation of water, energy and waste flows within the production facilities for windows and doors follows unit-based allocation adjusted with a point system to different product groups or products. This score system is regulated by a factor which increases with the resource intensity of each product. The unit-based allocation is adjusted by the weight of the product, excluding the weight of glass.

### Data quality:

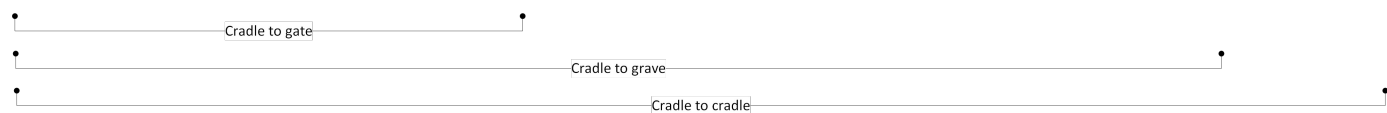
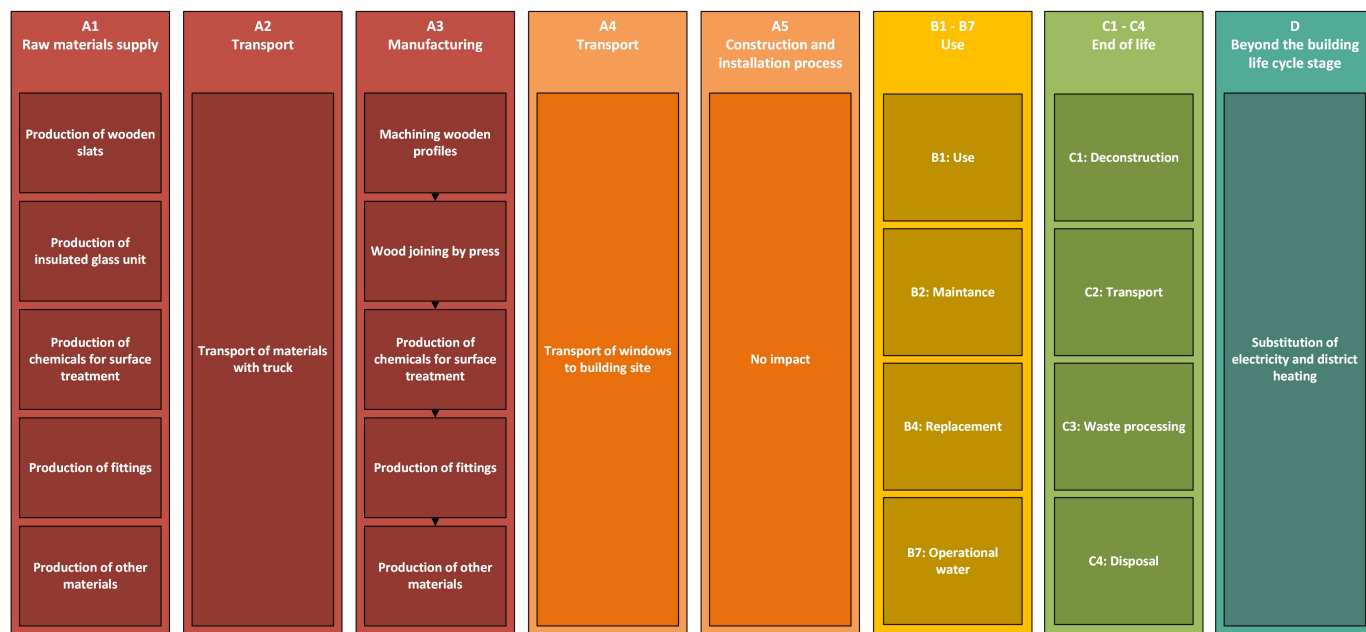
Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the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

| Materials                          | Source                   | Data quality | Year |
|------------------------------------|--------------------------|--------------|------|
| Adhesive and sealant               | EPD-FEI-20220021-IBG1-EN | EPD          | 2021 |
| Metal - Aluminium                  | NEPD-4811-4063-NO        | EPD          | 2021 |
| Metal - Galvanized Steel           | Ecoinvent 3.6            | Database     | 2019 |
| Packaging - Plastic straps         | ecoinvent 3.6            | Database     | 2019 |
| Packaging - Wood                   | Modified ecoinvent 3.6   | Database     | 2019 |
| Paint, water-based                 | ecoinvent 3.6            | Database     | 2019 |
| Plastic - Polyethylene (LDPE)      | ecoinvent 3.6            | Database     | 2019 |
| Plastic - Polyvinyl chloride (PVC) | ecoinvent 3.6            | Database     | 2019 |
| Powder coating                     | ecoinvent 3.6            | Database     | 2019 |
| Rubber, synthetic                  | ecoinvent 3.6            | Database     | 2019 |
| Triple glazing                     | Modified S-P-00933       | EPD          | 2019 |
| Wood - Laminated wood              | S-P-02154                | EPD          | 2018 |

## 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       | X           | MND    | X           | MND           | MND                    | MND                   | X                          | X         | X                | X        | X                                   |

### System boundary:



### Additional technical information:

Contains Biocides see "FDV document"

## LCA: Scenarios and additional technical information

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

### SCENARIO

A1:

Packaging is based on 5 products pr. pallet, it is possible to pack denser for projects.

A3:

Production data is weighted without TGU and packaging.

B2:

The maintenance scenario is based on washing with 4,5 l water and 45 ml detergent per year

| 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 %                                | 300,00        | 0,043                   | l/tkm | 12,90               |
| Assembly (A5)                                                                                                     | Unit                                  | Value         |                         |       |                     |
| Waste, packaging, PET straps, to average treatment (kg)                                                           | kg                                    | 0,02          |                         |       |                     |
| Waste, packaging, pallet, EUR wooden pallet, reusable, average treatment (kg)                                     | kg                                    | 5,00          |                         |       |                     |
| Waste, packaging, plastic film (LDPE), to average treatment (kg)                                                  | kg                                    | 0,50          |                         |       |                     |
| Maintenance (B2)                                                                                                  | Unit                                  | Value         |                         |       |                     |
| Soap solution 5%, household detergent (kg) - pure soap                                                            | kg                                    | 2,73          |                         |       |                     |
| Treatment of wastewater (kg)                                                                                      | kg                                    | 272,73        |                         |       |                     |
| Water, tap water (kg)                                                                                             | kg                                    | 270,00        |                         |       |                     |
| Lubricant (kg)                                                                                                    | kg                                    | 0,01          |                         |       |                     |
| Replacement (B4)                                                                                                  | Unit                                  | Value         |                         |       |                     |
| Uskiftning av vindu (stk)                                                                                         | Units                                 | 0,50          |                         |       |                     |
| Transport to waste processing (C2)                                                                                | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit  | Value (Liter/tonne) |
| Truck, 16-32 tonnes, EURO 6 (km) - Europe                                                                         | 36,7 %                                | 85,00         | 0,043                   | l/tkm | 3,66                |
| Waste processing (C3)                                                                                             | Unit                                  | Value         |                         |       |                     |
| Waste treatment per kg Rubber, municipal incineration with fly ash extraction (kg)                                | kg                                    | 0,361         |                         |       |                     |
| Waste treatment per kg Rubber, municipal incineration with energy recovery (kg)                                   | kg                                    | 0,038         |                         |       |                     |
| Waste treatment per kg Polyethylene (PE), incineration with energy recovery (kg)                                  | kg                                    | 0,0817        |                         |       |                     |
| Waste treatment per kg Polyvinylchloride (PVC), incineration with fly ash extraction (kg)                         | kg                                    | 1,81          |                         |       |                     |
| Waste treatment per kg Paint, hazardous waste incineration (kg)                                                   | kg                                    | 0,4285        |                         |       |                     |
| Materials to recycling (kg)                                                                                       | kg                                    | 16,15         |                         |       |                     |
| Waste treatment per kg Wood, incineration with energy recovery (kg)                                               | kg                                    | 19,95         |                         |       |                     |
| Disposal (C4)                                                                                                     | Unit                                  | Value         |                         |       |                     |
| Landfilling of ashes from incineration of Rubber, process per kg ashes and residues (kg)                          | kg                                    | 0,01888       |                         |       |                     |
| Waste, rubber, to landfill (kg)                                                                                   | kg                                    | 0,021         |                         |       |                     |
| Landfilling of ashes from incineration of Rubber, process per kg ashes and residues (kg)                          | kg                                    | 0,001987      |                         |       |                     |
| Waste, polyethylene, to landfill (kg)                                                                             | kg                                    | 0,0043        |                         |       |                     |
| Landfilling of ashes from incineration of Polyethylene (PE), process per kg ashes and residues (kg)               | kg                                    | 0,002879      |                         |       |                     |
| Waste, polyvinylchloride, to landfill (kg)                                                                        | kg                                    | 0,095         |                         |       |                     |
| Landfilling of ashes from incineration of Polyvinylchloride (PVC), process per kg ashes and residues (kg)         | kg                                    | 0,2876        |                         |       |                     |
| Waste, paint, to landfill (kg)                                                                                    | kg                                    | 0,02255       |                         |       |                     |
| Landfilling of ashes from incineration of Paint, hazardous waste incineration, process of ashes and residues (kg) | kg                                    | 0,01267       |                         |       |                     |
| Waste, scrap aluminium, to landfill (kg)                                                                          | kg                                    | 0,01084       |                         |       |                     |
| Waste, scrap steel, to landfill (kg) - C4                                                                         | kg                                    | 0,19          |                         |       |                     |
| Waste, glass, to landfill (kg)                                                                                    | kg                                    | 28,77         |                         |       |                     |
| Waste, wood, untreated, to landfill (kg)                                                                          | kg                                    | 1,05          |                         |       |                     |
| Landfilling of ashes from incineration of Wood, process per kg ashes and residues (kg)                            | kg                                    | 0,2295        |                         |       |                     |

| Benefits and loads beyond the system boundaries (D)              | Unit | Value     |  |  |  |
|------------------------------------------------------------------|------|-----------|--|--|--|
| Substitution of electricity, in Norway (MJ)                      | MJ   | 0,4941    |  |  |  |
| Substitution of thermal energy, district heating, in Norway (MJ) | MJ   | 7,47      |  |  |  |
| Substitution of thermal energy, district heating, in Norway (MJ) | MJ   | 28,72     |  |  |  |
| Substitution of electricity, in Norway (MJ)                      | MJ   | 1,90      |  |  |  |
| Substitution of electricity (MJ)                                 | MJ   | 0,1725    |  |  |  |
| Substitution of thermal energy, district heating (MJ)            | MJ   | 2,61      |  |  |  |
| Substitution of thermal energy, district heating, in Norway (MJ) | MJ   | 2,40      |  |  |  |
| Substitution of electricity, in Norway (MJ)                      | MJ   | 0,1584    |  |  |  |
| Substitution of electricity, in Norway (MJ)                      | MJ   | 0,0003227 |  |  |  |
| Substitution of thermal energy, district heating, in Norway (MJ) | MJ   | 0,004883  |  |  |  |
| Substitution of primary aluminium with net scrap (kg)            | kg   | 0,1975    |  |  |  |
| Substitution of primary steel with net scrap (kg)                | kg   | 3,61      |  |  |  |
| Substitution of primary glass with net scrap (kg)                | kg   | 7,21      |  |  |  |
| Substitution of electricity, in Norway (MJ)                      | MJ   | 13,87     |  |  |  |
| Substitution of thermal energy, district heating, in Norway (MJ) | MJ   | 209,90    |  |  |  |

## 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       | B2       | B4       | C1 | C2       | C3       | C4       | D         |
|  | GWP-total                        | kg CO <sub>2</sub> -eq | 7.70E+01  | 3.65E+00 | 7.63E+00 | 9.34E-01 | 6.58E+01 | 0  | 1.04E+00 | 4.17E+01 | 4.66E-01 | -1.46E+01 |
|  | GWP-fossil                       | kg CO <sub>2</sub> -eq | 1.17E+02  | 3.65E+00 | 4.79E-02 | 4.47E-01 | 6.46E+01 | 0  | 1.03E+00 | 6.76E+00 | 3.75E-01 | -1.45E+01 |
|  | GWP-biogenic                     | kg CO <sub>2</sub> -eq | -4.09E+01 | 1.51E-03 | 7.58E+00 | 6.28E-02 | 8.62E-01 | 0  | 4.28E-04 | 3.50E+01 | 9.12E-02 | -8.24E-02 |
|  | GWP-luluc                        | kg CO <sub>2</sub> -eq | 6.71E-01  | 1.30E-03 | 4.88E-06 | 4.25E-01 | 3.37E-01 | 0  | 3.68E-04 | 4.56E-04 | 9.38E-05 | -8.72E-02 |
|  | ODP                              | kg CFC11 -eq           | 8.22E-06  | 8.27E-07 | 3.55E-09 | 6.76E-08 | 4.81E-06 | 0  | 2.34E-07 | 2.26E-07 | 1.03E-07 | -1.06E-01 |
|  | AP                               | mol H <sup>+</sup> -eq | 6.66E-01  | 1.05E-02 | 1.05E-04 | 5.27E-03 | 3.44E-01 | 0  | 2.97E-03 | 6.62E-03 | 2.77E-03 | -1.20E-01 |
|  | EP-FreshWater                    | kg P -eq               | 2.71E-03  | 2.92E-05 | 1.65E-07 | 2.44E-03 | 1.39E-03 | 0  | 8.26E-06 | 1.72E-05 | 4.63E-06 | -5.70E-04 |
|  | EP-Marine                        | kg N -eq               | 1.52E-01  | 2.08E-03 | 6.97E-05 | 9.18E-03 | 7.89E-02 | 0  | 5.88E-04 | 2.31E-03 | 1.01E-03 | -2.16E-02 |
|  | EP-Terrestrial                   | mol N -eq              | 1.78E+00  | 2.32E-02 | 4.31E-04 | 1.65E-02 | 9.20E-01 | 0  | 6.58E-03 | 2.49E-02 | 1.06E-02 | -2.49E-01 |
|  | POCP                             | kg NMVOC -eq           | 4.61E-01  | 8.90E-03 | 1.24E-04 | 2.93E-03 | 2.41E-01 | 0  | 2.52E-03 | 6.55E-03 | 3.05E-03 | -7.32E-02 |
|  | ADP-minerals&metals <sup>1</sup> | kg Sb -eq              | 2.76E-03  | 1.01E-04 | 3.28E-07 | 2.56E-05 | 1.45E-03 | 0  | 2.86E-05 | 9.92E-06 | 3.38E-06 | -7.01E-04 |
|  | ADP-fossil <sup>1</sup>          | MJ                     | 1.72E+03  | 5.52E+01 | 2.49E-01 | 5.76E+00 | 9.07E+02 | 0  | 1.56E+01 | 1.21E+01 | 7.52E+00 | -1.54E+02 |
|  | WDP <sup>1</sup>                 | m <sup>3</sup>         | 2.40E+03  | 5.34E+01 | 7.22E-01 | 1.02E+02 | 1.30E+03 | 0  | 1.51E+01 | 1.26E+02 | 1.31E+01 | -1.12E+03 |

GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

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

\*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

## Remarks to environmental impacts

### Additional environmental impact indicators

| Indicator                                                                                             | Unit              | A1-A3    | A4       | A5       | B2       | B4       | C1 | C2       | C3       | C4       | D         |
|-------------------------------------------------------------------------------------------------------|-------------------|----------|----------|----------|----------|----------|----|----------|----------|----------|-----------|
|  PM                  | Disease incidence | 5.61E-06 | 2.24E-07 | 1.57E-09 | 7.14E-08 | 3.01E-06 | 0  | 6.33E-08 | 7.59E-08 | 5.29E-08 | -1.94E-06 |
|  IRP <sup>2</sup>    | kgBq U235 -eq     | 2.77E+00 | 2.41E-01 | 1.05E-03 | 3.13E-02 | 1.58E+00 | 0  | 6.84E-02 | 5.24E-02 | 3.03E-02 | -4.03E-01 |
|  ETP-fw <sup>1</sup> | CTUe              | 1.49E+03 | 4.09E+01 | 2.52E-01 | 1.20E+02 | 8.96E+02 | 0  | 1.16E+01 | 2.40E+02 | 1.32E+01 | -5.16E+02 |
|  HTP-c <sup>1</sup>  | CTUh              | 1.29E-07 | 0.00E+00 | 1.40E-11 | 1.79E-09 | 6.67E-08 | 0  | 0.00E+00 | 4.22E-09 | 2.54E-10 | -2.73E-08 |
|  HTP-nc <sup>1</sup> | CTUh              | 1.17E-06 | 4.47E-08 | 6.33E-10 | 4.52E-08 | 6.64E-07 | 0  | 1.27E-08 | 9.46E-08 | 6.09E-09 | 2.02E-07  |
|  SQP <sup>1</sup>    | dimensionless     | 1.01E+03 | 3.86E+01 | 3.41E-01 | 1.91E+01 | 5.44E+02 | 0  | 1.09E+01 | 4.78E+00 | 1.99E+01 | -1.79E+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        | B2       | B4       | C1 | C2       | C3        | C4       | D         |  |
|  PERE  | MJ             | 7.65E+02 | 7.90E-01 | 5.91E-03  | 4.60E+00 | 3.84E+02 | 0  | 2.24E-01 | 1.86E+00  | 1.31E-01 | -1.43E+02 |  |
|  PERM  | MJ             | 3.90E+02 | 0.00E+00 | -6.94E+01 | 0.00E+00 | 0.00E+00 | 0  | 0.00E+00 | -3.20E+02 | 0.00E+00 | 0.00E+00  |  |
|  PERT  | MJ             | 1.15E+03 | 7.90E-01 | -6.94E+01 | 4.60E+00 | 3.84E+02 | 0  | 2.24E-01 | -3.19E+02 | 1.31E-01 | -1.43E+02 |  |
|  PENRE | MJ             | 1.65E+03 | 5.52E+01 | 2.49E-01  | 6.32E+00 | 8.71E+02 | 0  | 1.56E+01 | 1.21E+01  | 7.52E+00 | -1.54E+02 |  |
|  PENRM | MJ             | 1.02E+02 | 0.00E+00 | -2.17E+01 | 0.00E+00 | 6.84E-09 | 0  | 0.00E+00 | -8.07E+01 | 0.00E+00 | 0.00E+00  |  |
|  PENRT | MJ             | 1.75E+03 | 5.52E+01 | -2.14E+01 | 6.32E+00 | 8.71E+02 | 0  | 1.56E+01 | -6.86E+01 | 7.52E+00 | -1.54E+02 |  |
|  SM    | kg             | 5.30E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 2.65E+00 | 0  | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00  |  |
|  RSF   | MJ             | 1.64E+00 | 2.83E-02 | 1.60E-04  | 2.23E-02 | 8.58E-01 | 0  | 8.01E-03 | 3.72E-02  | 2.82E-03 | 1.18E-01  |  |
|  NRSF  | MJ             | 9.64E+00 | 1.01E-01 | 8.34E-04  | 2.75E-02 | 4.93E+00 | 0  | 2.86E-02 | 0.00E+00  | 9.69E-02 | -3.44E+00 |  |
|  FW    | m <sup>3</sup> | 3.48E+00 | 5.90E-03 | 1.47E-04  | 7.44E-02 | 1.81E+00 | 0  | 1.67E-03 | 1.20E-01  | 8.10E-03 | -2.47E-01 |  |

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

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

\*INA Indicator Not Assessed

### End of life - Waste

| Indicator                                                                         |      | Unit | A1-A3    | A4       | A5       | B2       | B4       | C1 | C2       | C3       | C4       | D         |
|-----------------------------------------------------------------------------------|------|------|----------|----------|----------|----------|----------|----|----------|----------|----------|-----------|
|  | HWD  | kg   | 8.23E-01 | 2.85E-03 | 0.00E+00 | 4.81E-02 | 5.18E-01 | 0  | 8.07E-04 | 0.00E+00 | 2.09E-01 | -4.10E-02 |
|  | NHWD | kg   | 2.13E+01 | 2.68E+00 | 7.70E-01 | 2.45E-01 | 2.80E+01 | 0  | 7.61E-01 | 0.00E+00 | 3.05E+01 | -3.11E+00 |
|  | RWD  | kg   | 4.17E-02 | 3.76E-04 | 0.00E+00 | 2.74E-05 | 2.11E-02 | 0  | 1.07E-04 | 0.00E+00 | 3.22E-06 | -4.43E-04 |

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

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

\*INA Indicator Not Assessed

### End of life - Output flow

| Indicator                                                                         |     | Unit | A1-A3    | A4       | A5       | B2       | B4       | C1 | C2       | C3       | C4       | D        |
|-----------------------------------------------------------------------------------|-----|------|----------|----------|----------|----------|----------|----|----------|----------|----------|----------|
|  | CRU | kg   | 0.00E+00 | 0.00E+00 | 4.75E+00 | 0.00E+00 | 2.38E+00 | 0  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
|  | MFR | kg   | 5.95E+00 | 0.00E+00 | 2.65E-01 | 0.00E+00 | 1.12E+01 | 0  | 0.00E+00 | 1.61E+01 | 9.41E-05 | 0.00E+00 |
|  | MER | kg   | 2.34E+00 | 0.00E+00 | 2.48E-01 | 0.00E+00 | 1.24E+01 | 0  | 0.00E+00 | 2.22E+01 | 1.95E-06 | 0.00E+00 |
|  | EEE | MJ   | 1.52E+00 | 0.00E+00 | 1.73E-01 | 0.00E+00 | 9.06E+00 | 0  | 0.00E+00 | 1.64E+01 | 1.48E-04 | 0.00E+00 |
|  | EET | MJ   | 2.29E+01 | 0.00E+00 | 2.61E+00 | 0.00E+00 | 1.37E+02 | 0  | 0.00E+00 | 2.48E+02 | 2.23E-03 | 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\*10<sup>-3</sup> = 0,009"

\*INA Indicator Not Assessed

### Biogenic Carbon Content

| Indicator                                         | Unit | At the factory gate |
|---------------------------------------------------|------|---------------------|
| Biogenic carbon content in product                | kg C | 9.54E+00            |
| Biogenic carbon content in accompanying packaging | kg C | 2.07E+00            |

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

## Additional requirements

### Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

| Electricity mix           | Source        | Amount | Unit                      |
|---------------------------|---------------|--------|---------------------------|
| Electricity, Norway (kWh) | ecoinvent 3.6 | 24,33  | g CO <sub>2</sub> -eq/kWh |

### Dangerous substances

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

### Indoor environment

No emissions

## Additional Environmental Information

| Additional environmental impact indicators required in NPCR Part A for construction products |                        |          |          |          |          |          |    |          |          |          |           |
|----------------------------------------------------------------------------------------------|------------------------|----------|----------|----------|----------|----------|----|----------|----------|----------|-----------|
| Indicator                                                                                    | Unit                   | A1-A3    | A4       | A5       | B2       | B4       | C1 | C2       | C3       | C4       | D         |
| GWPIOBC                                                                                      | kg CO <sub>2</sub> -eq | 1.19E+02 | 3.65E+00 | 4.79E-02 | 9.30E-01 | 6.53E+01 | 0  | 1.04E+00 | 6.77E+00 | 4.70E-01 | -1.45E+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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