

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Alumi Combi Light Screen 806x2006



abstracta

The Norwegian EPD Foundation

Owner of the declaration:

Abstracta AB

Product:

Alumi Combi Light Screen 806x2006

Declared unit:

1 pcs

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR 026:2022 Part B for Furniture

Program operator:

The Norwegian EPD Foundation

Declaration number:

Registration number:

Issue date:

Valid to:

EPD software:

LCAno EPD generator ID: 569977

General information

Product

Alumi Combi Light Screen 806x2006

Program operator:

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

Declaration number:

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR 026:2022 Part B for Furniture

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 Alumi Combi Light Screen 806x2006

Declared unit (cradle to gate) with option:

A1-A3,A4,A5,B2,B3,B4,C1,C2,C3,C4,D

Functional unit:

This EPD considers one pcs of Alumi Combi Light Screen. The product is a sound absorbing floor screen with a whiteboard combined. One side is upholstered and the other is completely covered with a whiteboard. At the end of its life it can be dismantled and recycled or returned to Abstracta for reuse or recycling.

General information on verification of EPD from EPD tools:

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

Verification of EPD tool:

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

Third party verifier:

Elisabet Amat, GREENIZE projects

(no signature required)

Owner of the declaration:

Abstracta AB
Contact person: Tim Wisme
Phone:
e-mail: tim.wisme@abstracta.se

Manufacturer:

Abstracta AB

Place of production:

Abstracta AB
Lammengatan 2
363 45 Lammhult, Sweden

Management system:

ISO 9001, 14001 och 45001

Organisation no:

556046-3852

Issue date:

Valid to:

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.

Developer of EPD: Tim Wisme

Reviewer of company-specific input data and EPD: Erik Graesen

Approved:

Product

Product description:

Nina Jobs designed Alumi Combi Light with the aim of encouraging colleagues to have spontaneous meetings wherever they want. The screens, which function both as sound absorbers and writing boards, are mounted on wheels for easy portability. The versatile writing boards have the same understated look as the other sound-absorbing screens in the Alumi series, allowing them to be combined in harmonious unity.

One side of the Alumi Combi Light Screen is upholstered in fabric. The other side with an e3 ceramic steel whiteboard from PolyVision.

Visit the product page for more information: <https://abstracta.se/product/alumi-combi-sound-absorbing-writingboard/>

Product specification

The floor screen consists of a sound-absorbent filling mounted within a solid frame. One side of the Alumi Combi Screen is upholstered in fabric. The other side with an e3 ceramic steel whiteboard. Choose your upholstery from a wide variety of options.

This EPD includes the following variants:

Alumi Combi Light 1190x1806

Alumi Combi Light 1190x2006

Alumi Combi Light 806x1806

Alumi Combi Light 806x2006

It also includes the following options:

Alumi Combi Light 1190x1806 with polyester upholstery

See the product sheet for more information: <https://lammhults.sharepoint.com/:b:/s/abs-webpage/EdPWNCsxlBF1j6fDiTtHpN8BQPNRjHD0GdfxfOra9pI1pQ?e=0vcUgX>

| Materials | kg | % | Recycled share in material (kg) | Recycled share in material (%) |
|--|--------------|---------------|---------------------------------|--------------------------------|
| Filt | 1,62 | 5,41 | 0,81 | 50,00 |
| Glue for wood | 0,32 | 1,07 | 0,00 | 0,00 |
| Insulation - stone wool | 4,38 | 14,66 | 0,71 | 16,15 |
| Plastic - Polypropylene (PP) | 0,27 | 0,91 | 0,00 | 0,00 |
| Powder coating | 0,01 | 0,05 | 0,00 | 0,00 |
| Tape | 0,15 | 0,50 | 0,00 | 0,00 |
| Textile - Wool | 0,76 | 2,55 | 0,00 | 0,00 |
| Unverified data | 6,24 | 20,87 | 0,20 | 3,24 |
| Wood - Medium Density Fibreboard (MDF) | 5,12 | 17,13 | 0,00 | 0,00 |
| Metal - Aluminium | 8,29 | 27,72 | 0,00 | 0,00 |
| Metal - Stainless steel | 0,02 | 0,05 | 0,00 | 21,83 |
| Metal - Steel | 2,72 | 9,09 | 0,00 | 0,00 |
| Total | 29,90 | 100,00 | 1,72 | |

| Packaging | kg | % | Recycled share in material (kg) | Recycled share in material (%) |
|------------------------------|--------------|---------------|---------------------------------|--------------------------------|
| Packaging - Pallet | 0,86 | 22,79 | 0,00 | 0,00 |
| Packaging - Paper | 0,01 | 0,19 | 0,00 | 0,00 |
| Packaging - Polystyrene | 0,17 | 4,40 | 0,00 | 0,00 |
| Recycled cardboard | 2,74 | 72,62 | 2,74 | 100,00 |
| Total incl. packaging | 33,67 | 100,00 | 4,46 | |

Technical data:

The dimensions of Alumi Combi Light Screen are 806x2006x63, but other sizes are also available. The product does not include a leg set, but in this EPD a standard choice for legs has been included.

For more information on the technical data of Alumi Combi Light Screen, see the technical data sheet: <https://lammhults.sharepoint.com/:b:/s/abs-webpage/EVG5OSXsEwtMvIptvAXvi8BZokBd966-FyAkBR1igZaTg?e=A2L40u>

Market:

The product is available worldwide. The distance to the market is based on shipping to Scandinavia or Western Europe.

Reference service life, product

At least 15 years, with a 5-year warranty and a 10-year spare part guarantee.

Reference service life, building

Assumed to be 60 years.

LCA: Calculation rules

Declared unit:

1 pcs Alumi Combi Light Screen 806x2006

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. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

| Materials | Source | Data quality | Year |
|--|------------------------|--------------|------|
| Filt | S-P-04908 | EPD | 2020 |
| Glue for wood | ecoinvent 3.6 | Database | 2019 |
| Insulation - stone wool | NEPD-4117-3336-EN | EPD | 2021 |
| Metal - Aluminium | ecoinvent 3.6 | Database | 2019 |
| Metal - Aluminium | S-P-07377 | EPD | 2021 |
| Metal - Stainless steel | ecoinvent 3.6 | Database | 2019 |
| Metal - Steel | ecoinvent 3.6 | Database | 2019 |
| Packaging - Pallet | ecoinvent 3.6 | Database | 2019 |
| Packaging - Paper | ecoinvent 3.6 | Database | 2019 |
| Packaging - Polystyrene | ecoinvent 3.6 | Database | 2019 |
| Plastic - Polypropylene (PP) | ecoinvent 3.6 | Database | 2019 |
| Powder coating | Ecoinvent 3.6 | Database | 2019 |
| Recycled cardboard | Modified ecoinvent 3.6 | Database | 2019 |
| Tape | Ecoinvent 3.6 | Database | 2019 |
| Textile - Wool | Modified ecoinvent 3.6 | Database | 2019 |
| Unverified data | ecoinvent 3.6 | Database | 2019 |
| Wood - Medium Density Fibreboard (MDF) | ecoinvent 3.6 | Database | 2019 |

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

| Product stage | | | Construction installation stage | | Use stage | | | | | | End of life stage | | | | Beyond the system boundaries | |
|---------------|-----------|---------------|---------------------------------|----------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|------------------------------|------------------------------------|
| Raw materials | Transport | Manufacturing | Transport | Assembly | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| X | X | X | X | X | MNR | X | X | X | MNR | MNR | MNR | X | X | X | X | X |

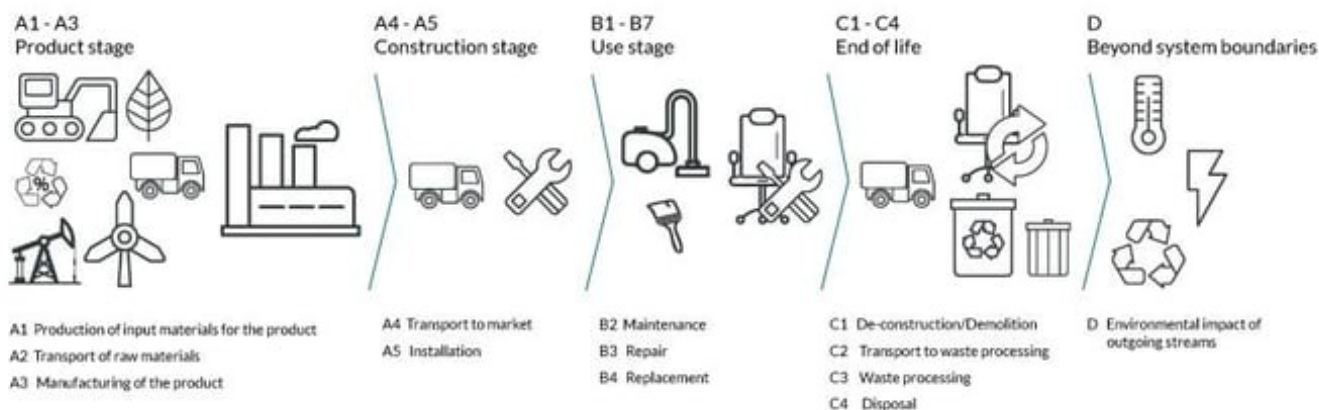
System boundary:

The EPD is a cradle-to-grave analysis, A1-D, where some B-stages (use phase) that were assumed to be neglectable are not included.

The A1-A4 stages includes the extraction and production of raw materials, transportation to the production site, the production process itself, and an estimated transport distance to the market. A5 includes the generated waste from the packaging of the product after assembly at the customer.

The only B stage that is assumed to be relevant is B2. This stage includes assumptions on how the customer takes care of the product according to Abstracta’s care instructions.

The C- and D-stages includes the use of materials and energy for deconstruction, the transport to waste management, the waste processes, disposal of materials that cannot be processed, and the potential of reuse, recovery, and recycling of the product.



Additional technical information:

Care instructions

Fabric

To maintain the color and appearance of the fabric, it should be vacuum cleaned regularly with a soft nozzle.

Stain Removal for Polyester:

- Use colorless towel or a washcloth to absorb as much as possible of still-moist stain. Dried stains should be vacuumed.
- Wet the stain sparingly with a white pure cotton cloth, warm water and possibly a little pH-neutral cleaner.
- Dab the area with a dry cloth or colorless paper towel to absorb the moisture and stain.
- Repeat this process until the stain is gone.
- On the final repetition, use only clean water with no detergent added.
- Finish by dabbing up moisture with a dry cloth or paper towel.

Stain Removal for wool:

Dab or wipe gently with a damp cloth.

Whiteboards and glass boards

Remove any protective film from the writing board and thoroughly clean the surface before first use. Moderately-used writing boards should then be cleaned a couple of times a week. The board must be absolutely dry when used. Use only pens intended for whiteboards. Replace the felt on the eraser on a regular basis.

Clean as follows:

- Wipe with approved cleaning fluid intended for whiteboards.
- Then wash away residual cleaning solution with clean lukewarm water.
- Wipe dry with a cloth.
- Repeat if necessary.
- Easier soiled paintings can be cleaned with only lukewarm water.
- Wipe dry with a cloth.

Note: Avoid detergents that are not intended for whiteboards (e.g. soap or detergent) when they can leave residues which hinder erasure.

Abstracta offers a reuse service for our clients. This involves us collecting worn-out products to facilitate reuse, renovation, or recycling. In order to make circularity easier, most of our products feature replaceable parts, simplifying repair. We do this in the hope that we can help contribute in the transition to a more sustainable future. Read more about the service here: <https://abstracta.se/story/abstracta-is-introducing-a-new-recycling-service-for-used-products-abstracta/> or contact our Sales Support for more information. Otherwise, try to ensure that the product can be reused when possible, or else, dismantle it so that as much of the materials can be recycled as possible.

LCA: Scenarios and additional technical information

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

Some assumptions have been made regarding the products lifetime after leaving the factory gates. The product is assumed to be transported to a customer in Scandinavia, Germany, the UK, or France (88% of sales in 2023). An average distance to the customer has been calculated through this data. In the A5 phase, the packaging of the product becomes waste, and the impacts are added automatically according to assumptions made in the EPD tool on waste handling on-site. In the use stage, the assumption is that the customer takes care of the product by vacuuming it for 1 minute/m² of the product, with a 600 W vacuum, on a yearly basis. For the end-of-life stage of the product, it has been assumed that there is a 50 km distance from the customer to a waste terminal. The rest of the values are automatically filled in by the tool. For the D-stage, automatic values are filled in, according to generic data.














| Transport from production place to user (A4) | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit | Value (Liter/tonne) |
|--|---------------------------------------|---------------|-------------------------|-------|---------------------|
| Ship, Ferry, Sea (km) | 50,0 % | 8 | 0,034 | l/tkm | 0,27 |
| Truck, 16-32 tonnes, EURO 6 (km) | 36,7 % | 502 | 0,043 | l/tkm | 21,58 |
| Assembly (A5) | | Unit | Value | | |
| Waste, packaging, cardboard, 100 % recycled, to average treatment (kg) | kg | 2,74 | | | |
| Waste, packaging, polystyrene, for incineration (kg) | kg | 0,17 | | | |
| Waste, packaging, Pallet, EUR wooden pallet, single use, average treatment (kg) | kg | 0,86 | | | |
| Waste, packaging, kraft paper, unbleached, to average treatment (kg) | kg | 0,01 | | | |
| Maintenance (B2) | | Unit | Value | | |
| Electricity, Nordic (kWh) | kWh/DU | 0,23 | | | |
| 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) | 36,7 % | 50 | 0,043 | l/tkm | 2,15 |
| Waste processing (C3) | | Unit | Value | | |
| Copper to recycling (kg) | kg | 9,10 | | | |
| Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg) | kg | 8,22 | | | |
| Waste treatment per kg Polypropylene (PP), incineration with fly ash extraction - C3 (kg) | kg | 0,27 | | | |
| Waste treatment per kg Non-hazardous waste, incineration with fly ash extraction - C3 (kg) | kg | 0,09 | | | |
| Waste treatment per kg Glass, incineration with fly ash extraction (kg) | kg | 0,75 | | | |
| Waste treatment per kg Textile, incineration with fly ash extraction (kg) | kg | 0,76 | | | |
| Waste treatment per kg Wood, incineration with fly ash extraction (kg) | kg | 5,12 | | | |
| Waste treatment per kg Hazardous waste, incineration (kg) | kg | 0,32 | | | |
| Waste treatment per kg Scrap aluminium, incineration with fly ash extraction (kg) | kg | 1,76 | | | |
| Waste treatment per kg Polyethylene terephthalate, PET, incineration with fly ash extraction - C3 (kg) | kg | 1,62 | | | |














| Disposal (C4) | Unit | Value | | | |
|--|------|-------|--|--|--|
| Landfilling of ashes and residues from incineration of Scrap steel (kg) | kg | 5,43 | | | |
| Landfilling of ashes from incineration of Polypropylene, PP, process per kg ashes and residues - C4 (kg) | kg | 0,01 | | | |
| Landfilling of ashes from incineration of Non-hazardous waste, process per kg ashes and residues - C4 (kg) | kg | 0,02 | | | |
| Landfilling of ashes from incineration of Glass, process of ashes and residues (kg) | kg | 0,75 | | | |
| Landfilling of ashes from incineration of Textile, soiled, process per kg ashes and residues (kg) | kg | 0,04 | | | |
| Landfilling of ashes from incineration of Wood, process per kg ashes and residues (kg) | kg | 0,06 | | | |
| Waste, Stone wool, to landfil (kg) | kg | 4,38 | | | |
| Landfilling of ashes from incineration of Hazardous waste, from incineration (kg) | kg | 0,06 | | | |
| Landfilling of ashes and residues from incineration of Scrap aluminium (kg) | kg | 1,58 | | | |
| Landfilling of non-hazardous waste (kg) | kg | 0,07 | | | |
| Landfilling of ashes from incineration of Polyethylene terephthalate, PET, process per kg ashes and residues - C4 (kg) | kg | 0,04 | | | |

| Benefits and loads beyond the system boundaries (D) | Unit | Value | | | |
|--|------|-------|--|--|--|
| Substitution of primary steel with net scrap (kg) | kg | 6,22 | | | |
| Substitution of electricity, in Norway (MJ) | MJ | 6,46 | | | |
| Substitution of thermal energy, district heating, in Norway (MJ) | MJ | 97,69 | | | |
| Substitution of primary aluminium with net scrap (kg) | kg | 0,18 | | | |

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 | B3 | |
|  GWP-total | kg CO ₂ -eq | 1,77E+02 | 2,79E+00 | 6,56E+00 | 3,28E-02 | 0 | |
|  GWP-fossil | kg CO ₂ -eq | 1,66E+02 | 2,79E+00 | 5,97E-01 | 3,06E-02 | 0 | |
|  GWP-biogenic | kg CO ₂ -eq | 7,24E+00 | 1,15E-03 | 5,97E+00 | 5,58E-04 | 0 | |
|  GWP-luluc | kg CO ₂ -eq | 3,89E+00 | 1,00E-03 | 2,13E-05 | 1,67E-03 | 0 | |
|  ODP | kg CFC11 -eq | 1,81E-05 | 6,31E-07 | 1,35E-08 | 3,31E-09 | 0 | |
|  AP | mol H ⁺ -eq | 1,85E+00 | 8,90E-03 | 4,60E-04 | 1,41E-04 | 0 | |
|  EP-FreshWater | kg P -eq | 1,34E-02 | 2,22E-05 | 6,84E-07 | 2,02E-06 | 0 | |
|  EP-Marine | kg N -eq | 3,00E-01 | 1,81E-03 | 1,80E-04 | 2,23E-05 | 0 | |
|  EP-Terrestrial | mol N -eq | 6,26E+00 | 2,02E-02 | 1,94E-03 | 2,99E-04 | 0 | |
|  POCP | kg NMVOC -eq | 5,54E-01 | 7,42E-03 | 5,15E-04 | 7,00E-05 | 0 | |
|  ADP-minerals&metals ¹ | kg Sb-eq | 1,82E-03 | 7,64E-05 | 1,47E-06 | 4,75E-07 | 0 | |
|  ADP-fossil ¹ | MJ | 2,13E+03 | 4,21E+01 | 9,29E-01 | 8,25E-01 | 0 | |
|  WDP ¹ | m ³ | 1,16E+04 | 4,04E+01 | 1,31E+00 | 6,38E+01 | 0 | |

| Indicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
|--|------------------------|----|----|----------|----------|----------|-----------|
|  GWP-total | kg CO ₂ -eq | 0 | 0 | 2,75E-01 | 1,49E+01 | 1,98E-01 | -9,09E+00 |
|  GWP-fossil | kg CO ₂ -eq | 0 | 0 | 2,75E-01 | 5,07E+00 | 1,42E-01 | -9,03E+00 |
|  GWP-biogenic | kg CO ₂ -eq | 0 | 0 | 1,14E-04 | 9,81E+00 | 5,65E-02 | -1,24E-02 |
|  GWP-luluc | kg CO ₂ -eq | 0 | 0 | 9,79E-05 | 2,14E-04 | 3,58E-05 | -5,34E-02 |
|  ODP | kg CFC11 -eq | 0 | 0 | 6,23E-08 | 9,79E-08 | 3,82E-08 | -4,13E-02 |
|  AP | mol H ⁺ -eq | 0 | 0 | 7,90E-04 | 3,19E-03 | 9,03E-04 | -4,96E-02 |
|  EP-FreshWater | kg P -eq | 0 | 0 | 2,20E-06 | 2,04E-05 | 1,77E-06 | -5,34E-04 |
|  EP-Marine | kg N -eq | 0 | 0 | 1,56E-04 | 1,24E-03 | 4,04E-04 | -9,95E-03 |
|  EP-Terrestrial | mol N -eq | 0 | 0 | 1,75E-03 | 1,31E-02 | 3,47E-03 | -1,04E-01 |
|  POCP | kg NMVOC -eq | 0 | 0 | 6,70E-04 | 3,38E-03 | 1,02E-03 | -4,40E-02 |
|  ADP-minerals&metals ¹ | kg Sb-eq | 0 | 0 | 7,60E-06 | 3,34E-06 | 1,78E-06 | -1,21E-04 |
|  ADP-fossil ¹ | MJ | 0 | 0 | 4,16E+00 | 4,51E+00 | 2,80E+00 | -8,63E+01 |
|  WDP ¹ | m ³ | 0 | 0 | 4,02E+00 | 1,38E+01 | 7,91E+00 | -6,76E+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*10⁻³ = 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 | B3 |
|---|-------------------|-----------|----------|----------|----------|----|
|  PM | Disease incidence | 1,52E-05 | 1,70E-07 | 5,66E-09 | 7,47E-10 | 0 |
|  IRP ² | kgBq U235 -eq | 6,10E+00 | 1,84E-01 | 3,71E-03 | 1,88E-02 | 0 |
|  ETP-fw ¹ | CTUe | 3,88E+03 | 3,11E+01 | 1,22E+00 | 1,03E+00 | 0 |
|  HTP-c ¹ | CTUh | 3,70E-07 | 0,00E+00 | 8,10E-11 | 2,40E-11 | 0 |
|  HTP-nc ¹ | CTUh | 2,81E-06 | 3,41E-08 | 3,58E-09 | 6,34E-10 | 0 |
|  SQP ¹ | dimensionless | -2,94E+04 | 2,92E+01 | 5,80E-01 | 6,22E-01 | 0 |










| Indicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|-------------------|----|----|----------|----------|----------|-----------|
|  PM | Disease incidence | 0 | 0 | 1,68E-08 | 4,80E-08 | 1,61E-08 | -9,64E-07 |
|  IRP ² | kgBq U235 -eq | 0 | 0 | 1,82E-02 | 1,69E-02 | 1,15E-02 | -1,17E-01 |
|  ETP-fw ¹ | CTUe | 0 | 0 | 3,08E+00 | 2,90E+01 | 2,16E+00 | -4,50E+02 |
|  HTP-c ¹ | CTUh | 0 | 0 | 0,00E+00 | 1,45E-09 | 7,40E-11 | -3,78E-08 |
|  HTP-nc ¹ | CTUh | 0 | 0 | 3,37E-09 | 2,30E-08 | 2,18E-09 | 6,25E-07 |
|  SQP ¹ | dimensionless | 0 | 0 | 2,91E+00 | 1,44E+00 | 6,11E+00 | -5,86E+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 = Soil Quality (dimensionless)

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 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 experience 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 | B3 | |
|  | PERE | MJ | 1,37E+03 | 6,00E-01 | 1,69E-02 | 8,12E-01 | 0 | |
|  | PERM | MJ | 1,11E+02 | 0,00E+00 | -2,81E+01 | 0,00E+00 | 0 | |
|  | PERT | MJ | 1,48E+03 | 6,00E-01 | -2,80E+01 | 8,12E-01 | 0 | |
|  | PENRE | MJ | 2,08E+03 | 4,21E+01 | 9,29E-01 | 8,38E-01 | 0 | |
|  | PENRM | MJ | 8,47E+01 | 0,00E+00 | -6,42E+00 | 0,00E+00 | 0 | |
|  | PENRT | MJ | 2,16E+03 | 4,21E+01 | -5,49E+00 | 8,38E-01 | 0 | |
|  | SM | kg | 4,46E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0 | |
|  | RSF | MJ | 1,14E+00 | 2,14E-02 | 5,32E-04 | 8,20E-03 | 0 | |
|  | NRSF | MJ | 1,36E+01 | 7,64E-02 | 3,55E-03 | 0,00E+00 | 0 | |
|  | FW | m ³ | 4,85E+00 | 4,48E-03 | 5,85E-04 | 3,69E-03 | 0 | |




| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|-------|----------------|----|----|----------|-----------|----------|-----------|
|  | PERE | MJ | 0 | 0 | 5,95E-02 | 5,95E-01 | 6,05E-02 | -6,22E+01 |
|  | PERM | MJ | 0 | 0 | 0,00E+00 | -4,95E+01 | 0,00E+00 | 0,00E+00 |
|  | PERT | MJ | 0 | 0 | 5,95E-02 | -4,89E+01 | 6,05E-02 | -6,22E+01 |
|  | PENRE | MJ | 0 | 0 | 4,16E+00 | 4,53E+00 | 2,80E+00 | -8,63E+01 |
|  | PENRM | MJ | 0 | 0 | 0,00E+00 | -5,63E+01 | 0,00E+00 | 0,00E+00 |
|  | PENRT | MJ | 0 | 0 | 4,16E+00 | -5,17E+01 | 2,80E+00 | -8,63E+01 |
|  | SM | kg | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
|  | RSF | MJ | 0 | 0 | 2,13E-03 | 1,31E-02 | 1,44E-03 | 2,35E-01 |
|  | NRSF | MJ | 0 | 0 | 7,61E-03 | 0,00E+00 | 6,85E-02 | 4,24E+00 |
|  | FW | m ³ | 0 | 0 | 4,45E-04 | 5,33E-03 | 2,75E-03 | -1,15E-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*10⁻³ = 0,009"

*INA Indicator Not Assessed





| End of life - Waste | | | | | | | | |
|---|------|------|----------|----------|----------|----------|----|--|
| Indicator | | Unit | A1-A3 | A4 | A5 | B2 | B3 | |
|  | HWD | kg | 6,90E-01 | 2,17E-03 | 0,00E+00 | 7,74E-05 | 0 | |
|  | NHWD | kg | 5,39E+01 | 2,03E+00 | 3,77E+00 | 5,13E-03 | 0 | |
|  | RWD | kg | 8,74E-02 | 2,87E-04 | 0,00E+00 | 8,65E-06 | 0 | |






| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|------|------|----|----|----------|----------|----------|-----------|
|  | HWD | kg | 0 | 0 | 2,14E-04 | 0,00E+00 | 7,83E+00 | -2,91E-02 |
|  | NHWD | kg | 0 | 0 | 2,02E-01 | 1,16E+00 | 4,60E+00 | -3,46E+00 |
|  | RWD | kg | 0 | 0 | 2,83E-05 | 0,00E+00 | 1,67E-05 | -1,08E-04 |

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

*Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

| End of life - Output flow | | | | | | | | |
|---|-----|------|----------|----------|----------|----------|----|--|
| Indicator | | Unit | A1-A3 | A4 | A5 | B2 | B3 | |
|  | CRU | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0 | |
|  | MFR | kg | 6,18E-01 | 0,00E+00 | 2,56E+00 | 0,00E+00 | 0 | |
|  | MER | kg | 5,34E-01 | 0,00E+00 | 1,02E+00 | 0,00E+00 | 0 | |
|  | EEE | MJ | 3,70E-01 | 0,00E+00 | 1,04E+00 | 0,00E+00 | 0 | |
|  | EET | MJ | 5,60E+00 | 0,00E+00 | 1,58E+01 | 0,00E+00 | 0 | |

| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|-----|------|----|----|----------|----------|----------|----------|
|  | CRU | kg | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
|  | MFR | kg | 0 | 0 | 0,00E+00 | 9,10E+00 | 1,64E-04 | 0,00E+00 |
|  | MER | kg | 0 | 0 | 0,00E+00 | 1,89E+01 | 1,33E-06 | 0,00E+00 |
|  | EEE | MJ | 0 | 0 | 0,00E+00 | 6,53E+00 | 1,15E-05 | 0,00E+00 |
|  | EET | MJ | 0 | 0 | 0,00E+00 | 9,88E+01 | 1,74E-04 | 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*10⁻³ = 0,009"

*INA Indicator Not Assessed

| Biogenic Carbon Content | | |
|---|------|---------------------|
| Indicator | Unit | At the factory gate |
| Biogenic carbon content in product | kg C | 2,37E+00 |
| Biogenic carbon content in accompanying packaging | kg C | 2,63E+00 |

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

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, Sweden (kWh) | ecoinvent 3.6 | 54,94 | g CO ₂ -eq/kWh |

Dangerous substances

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

Indoor environment

Additional Environmental Information

Key Environmental Indicators

| Key environmental indicators | Unit | A1-A3 | A4 | A1-C4 | A1-D |
|------------------------------|------------------------|---------|-------|---------|---------|
| GWPtotal | kg CO ₂ -eq | 177,29 | 2,79 | 202,04 | 192,94 |
| Total energy consumption | MJ | 3468,73 | 42,81 | 3526,44 | 3382,48 |
| Amount of recycled materials | % | 11,62 | | | |

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

| Indicator | Unit | A1-A3 | A4 | A5 | B2 | B3 |
|-----------|------------------------|----------|----------|----------|----------|----|
| GWPIOBC | kg CO ₂ -eq | 1,92E+02 | 2,79E+00 | 5,97E-01 | 4,44E-02 | 0 |

| Indicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
|-----------|------------------------|----|----|----------|----------|----------|-----------|
| GWPIOBC | kg CO ₂ -eq | 0 | 0 | 2,75E-01 | 6,22E+00 | 2,01E-01 | -1,24E+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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|  | Owner of the declaration: Abstracta AB Lammengatan 2, 363 45 Lammhult | Phone: e-mail: tim.wisme@abstracta.se web: www.abstracta.se |
|  | Author of the Life Cycle Assessment LCA.no AS Dokka 6A, 1671 Kråkerøy | Phone: +47 916 50 916 e-mail: post@lca.no web: www.lca.no |
|  | Developer of EPD generator LCA.no AS Dokka 6A, 1671 Kråkerøy | Phone: +47 916 50 916 e-mail: post@lca.no web: www.lca.no |
|  | ECO Platform ECO Portal | web: www.eco-platform.org web: ECO Portal |