

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Combo Cabinets



Martela

The Norwegian EPD Foundation

Owner of the declaration:

Martela Oyj

Product:

Combo Cabinets

Declared unit:

1 pc

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:

NEPD-6113-5376-EN

Registration number:

NEPD-6113-5376-EN

Issue date: 16.02.2024

Valid to: 16.02.2029

EPD software:

LCAno EPD generator ID: 222904

General information

Product

Combo Cabinets

Program operator:

Post Box 5250 Majorstuen, 0303 Oslo, Norway The Norwegian EPD Foundation Phone: +47 23 08 80 00 web: post@epd-norge.no

Declaration number:

NEPD-6113-5376-EN

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 Combo Cabinets

Declared unit (cradle to gate) with option:

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

Functional unit:

Combo is a versatile and extensive cabinet collection that can be used to assemble thousands of individual storage solutions. The collection has plenty of material and colour options as well as various accessories.

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:

Elisabet Amat, GREENIZE projects

(no signature required)

Owner of the declaration:

Martela Oyj Contact person: Anne-Maria Peitsalo Phone: e-mail: anne-maria.peitsalo@martela.com

Manufacturer:

Martela Oyj Miestentie 1 02150 Espoo, Finland

Place of production:

Martela Oyj, Nummela production Ojakkalantie 10 03100 Nummela, Finland

Management system:

ISO 14001, ISO 9001, ISO 45001

Organisation no:

0114891-2

Issue date: 16.02.2024

Valid to: 16.02.2029

Year of study:

2022

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway.

Developer of EPD: Tiina Bordi

Reviewer of company-specific input data and EPD: Anne-Maria Peitsalo

Approved:

Håkon Hauan, CEO EPD-Norge

Product

Product description:

Combo is a versatile cabinet series for assembling unique storage solutions. There are plenty of material and colour options and a variety of accessories available. Cabinets are available with or without traditional doors, as well as a space-saving vertical roller or sliding doors.

Product specification

Combo sliding door cabinet size 120×42×128 cm

Frame, shelfs and doors are white melamine

White plastic plinth

| Materials | kg | % | Recycled share in material (kg) | Recycled share in material (%) |
|------------------------------|-------|-------|---------------------------------|--------------------------------|
| Metal - Stainless steel | 0,21 | 0,27 | 0,05 | 21,83 |
| Plastic - Melamine | 0,50 | 0,64 | 0,00 | 0,00 |
| Plastic - Polypropylene (PP) | 5,57 | 7,10 | 0,00 | 0,00 |
| Wood - Chipboard | 72,19 | 92,00 | 0,00 | 0,00 |
| Total | 78,47 | | 0,05 | |

| Packaging | kg | % | Recycled share in material (kg) | Recycled share in material (%) |
|-----------------------|-------|-------|---------------------------------|--------------------------------|
| Packaging - Cardboard | 0,50 | 4,27 | 0,18 | 36,00 |
| Packaging - Plastic | 1,20 | 10,26 | 0,00 | 0,00 |
| Packaging - Wood | 10,00 | 85,47 | 0,00 | 0,00 |
| Total incl. packaging | 90,17 | | 0,23 | |

Technical data:

Möbelfakta certified product

More product information available here:

https://www.martela.com/furniture/storage/cabinets-and-lockers/combo-cabinet

Market:

Europe

Reference service life, product

At least 10 years verified by type testing in accredited test laboratory, 5 years warranty

Reference service life, building

LCA: Calculation rules

Declared unit:

1 pcs Combo Cabinets

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 |
|------------------------------|------------------------|--------------|------|
| Metal - Stainless steel | ecoinvent 3.6 | Database | 2019 |
| Packaging - Cardboard | ecoinvent 3.6 | Database | 2019 |
| Packaging - Plastic | ecoinvent 3.6 | Database | 2019 |
| Packaging - Wood | Modified ecoinvent 3.6 | Database | 2019 |
| Plastic - Melamine | ecoinvent 3.6 | Database | 2019 |
| Plastic - Polypropylene (PP) | ecoinvent 3.6 | Database | 2019 |
| Wood - Chipboard | ecoinvent 3.6 | Database | 2019 |

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

| | Pı | roduct stag | ge | | uction ion stage | | Use stage End of life stage | | | | Beyond the system boundaries | | | | | | |
|-----|-----------|-------------|---------------|-----------|---------------------|-----|-----------------------------|--------|-------------|-------------------------|------------------------------|--------------------------|-----------------------------------|-----------|---------------------|----------|--|
| Raw | materials | Transport | Manufacturing | Transport | Assembly | Use | Maintenance | Repair | Replacement | Refu <i>r</i> b ishment | Operational energy use | Operational water use | De- construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery- Recycling-potential |
| Α | .1 | A2 | A3 | A4 | A5 | B1 | B2 | В3 | B4 | B5 | В6 | В7 | C1 | C2 | C3 | C4 | D |
| X | < | Х | X | X | Χ | MND | Χ | Χ | Х | MND | MND | MND | X | Χ | X | Χ | X |

System boundary:

Product Stage / A1 Raw materials:

Martela has long partnerships with its suppliers and subcontractors, who buy raw materials to their products and components from their suppliers, respectively. Main suppliers are locating in Europe.

Wood material is coming from sustainably cultivated forest (FSC, PEFC, etc). Recycled materials are taken to use based on availability and when they fulfill the technical requirements set for the end products.

Materials are including the product package to our customers. Packages that are coming from suppliers are re-used in customer delivery phase (like pallets) or handled as waste in Manufacturing phase A3. Customer delivery package is disposed in Installation phase A5.

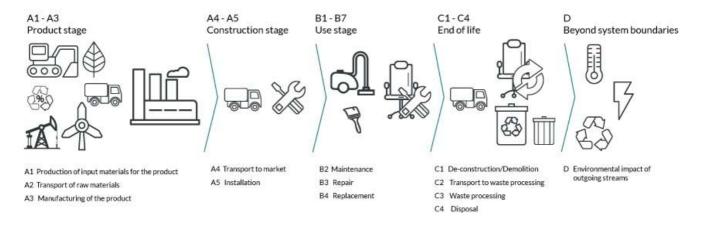
Product Stage / A2 Transport:

Transportation is calculated from suppliers location to our own factories in Nummela and Kitee and between our factories when delivering components to final assembly phase in our logistics center in Nummela.

Product Stage / A3 Manufacturing:

Martela has two own factories for manufacturing this product. Kitee factory is manufacturing laminate and melamine components for cabinets. Production unit in Nummela make final assembly of the products based on customer orders.

Nummela and Kitee factories are using renewable electricity and heating energy. From factory waste 98% is recycled.



Additional technical information:

LCA: Scenarios and additional technical information

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

Construction installation stage / A4 Transport:

Transportation from Martela logistics center in Nummela to our customers are calculated base on average transportation distances: in Finland 300 km and in Scandinavia 1000 km. In export deliveries Ferry is in use (between Helsinki - Tallinn and Turku - Stockholm).

Construction installation stage / A5 Assembly:

Martela products are partly assembled at customer premisies (like tables). This assembling is done with hand tools and use of energy is minimal in this stage. This product is delivered pre-assembled.

Customer end package is disposed in this stage automatically by the tool set-up, but in the real life, our installation personel take all waste back to our premisies and packages are re-used (like pallets) or recycled locally or in Nummela factory (included in A3 waste).

User stage / B1-B7:

Martela products do not require special maintenance. Wet wiping of the product is advice according.

Based on technical durability testing according EN standard in accredited testing laboratory Martela verifies use life of at least 10 years and grants normal warranty for 5 years.

End-of-life stage / C1-C4:

LCA-tool is calculating stage C waste prosessing and disposal material by material for recycling and resource for energy production in Norway. Material amounts are calculated based on the material used to make the product. Average transportation distance 85 km has added for waste management.

Beyond the system bondaries / Re-use - Recovery - Recycling -potential / D:

LCA-tool is calculating stage D potential based on material recycling and resource for energy production from materials if product end of lifecycle would be in Norway. Material amounts are calculated based on the material used to make the product.

| 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 % | 300 | 0,034 | l/tkm | 10,20 |
| Truck, 16-32 tonnes, EURO 6 (km) | 36,7 % | 800 | 0,043 | l/tkm | 34,40 |
| Assembly (A5) | Unit | Value | | | |
| Waste, packaging, corrugated board box, to average treatment (kg) | kg | 0,50 | | | |
| Waste, packaging, pallet, EUR wooden pallet, reusable, average treatment (kg) | kg | 10,00 | | | |
| Waste, packaging, plastic film (LDPE), to average treatment - A5 (kg) | kg | 1,20 | | | |
| Maintenance (B2) | Unit | Value | | | |
| Water, tap water (m3) | m3/DU | 0,01 | | | |
| 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 % | 85 | 0,043 | l/tkm | 3,66 |
| Waste processing (C3) | Unit | Value | | | |
| Waste treatment per kg Non-hazardous waste, incineration with fly ash extraction - C3 (kg) | kg | 0,50 | | | |
| Waste treatment per kg Polypropylene (PP), incineration with fly ash extraction - C3 (kg) | kg | 5,57 | | | |
| Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg) | kg | 0,21 | | | |
| Waste treatment per kg Wood, incineration with fly ash extraction (kg) | kg | 72,19 | | | |
| Waste, materials to recycling (kg) | kg | 0,07 | | | |
| Disposal (C4) | Unit | Value | | | |
| Landfilling of ashes and residues from incineration of Scrap steel (kg) | kg | 0,14 | | | |
| Landfilling of ashes from incineration of Non- hazardous waste, process per kg ashes and residues - C4 (kg) | kg | 0,12 | | | |
| Landfilling of ashes from incineration of Polypropylene, PP, process per kg ashes and residues - C4 (kg) | kg | 0,17 | | | |
| Landfilling of ashes from incineration of Wood, process per kg ashes and residues (kg) | kg | 0,83 | | | |

| Benefits and loads beyond the system boundaries (D) | Unit | Value | | |
|--|------|--------|--|--|
| Substitution of electricity, in Norway (MJ) | MJ | 59,57 | | |
| Substitution of primary steel with net scrap (kg) | kg | 0,06 | | |
| Substitution of thermal energy, district heating, in Norway (MJ) | МЈ | 901,22 | | |

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

| Environme | ntal impact | 1 3 | | | | | | |
|----------------------------|---|--|--------------------------------------|--|--|--|--|---|
| | Indicator | Unit | | A1-A3 | A4 | A5 | B2 | В3 |
| | GWP-total | kg CO ₂ - | eq | -7,74E+00 | 1,23E+01 | 1,61E+01 | 3,45E-03 | 0 |
| | GWP-fossil | kg CO ₂ -eq | | 1,28E+02 | 1,23E+01 | 1,17E-01 | 3,43E-03 | 0 |
| | GWP-biogenic | kg CO ₂ - | eq | -1,36E+02 | 4,72E-03 | 1,60E+01 | 2,16E-05 | 0 |
| | GWP-luluc | kg CO ₂ - | eq | 6,78E-01 | 5,05E-03 | 1,34E-05 | 5,58E-06 | 0 |
| ٨ | ODP | kg CFC11 | -eq | 1,69E-05 | 2,73E-06 | 9,57E-09 | 3,04E-10 | 0 |
| Œ. | AP | mol H+ - | eq | 6,55E-01 | 1,10E-01 | 2,64E-04 | 2,00E-05 | 0 |
| | EP-FreshWater | kg P -ed | 1 | 4,66E-03 | 8,82E-05 | 4,23E-07 | 2,74E-07 | 0 |
| | EP-Marine | kg N -ed | 7 | 1,20E-01 | 2,59E-02 | 1,66E-04 | 3,17E-06 | 0 |
| | EP-Terrestial | mol N -e | eq | 1,64E+00 | 2,88E-01 | 1,05E-03 | 3,69E-05 | 0 |
| | POCP | kg NMVOC | -eq | 4,94E-01 | 8,24E-02 | 3,05E-04 | 1,16E-05 | 0 |
| | ADP-minerals&metals ¹ | kg Sb-e | 9 | 1,78E-03 | 2,89E-04 | 9,21E-07 | 9,59E-08 | 0 |
| | ADP-fossil ¹ | МЈ | МЛ | | 1,81E+02 | 6,63E-01 | 5,86E-02 | 0 |
| <u></u> | WDP ¹ | m ³ | | 8,86E+04 | 1,50E+02 | 1,77E+00 | 1,05E+00 | 0 |
| (70) | WDF | m³ | | 0,000+04 | 1,301+02 | 1,772+00 | 1,032+00 | O |
| 70 | Indicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
| | | | B4 0 | | | | | |
| | Indicator | Unit | | C1 | C2 | C3 | C4 | D |
| | Indicator GWP-total | Unit kg CO ₂ -eq | 0 | C1 0 | C2 1,05E+00 | C3 1,38E+02 | C4 4,67E-02 | D -5,48E+00 |
| | Indicator GWP-total GWP-fossil | Unit kg CO ₂ -eq kg CO ₂ -eq | 0 | C1 0 | C2 1,05E+00 1,05E+00 | C3 1,38E+02 1,63E+01 | C4 4,67E-02 4,67E-02 | D -5,48E+00 -5,29E+00 |
| | Indicator GWP-total GWP-fossil GWP-biogenic | Unit kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq | 0 0 | C1 0 0 | C2 1,05E+00 1,05E+00 4,33E-04 | C3 1,38E+02 1,63E+01 1,21E+02 | C4 4,67E-02 4,67E-02 2,53E-05 | D -5,48E+00 -5,29E+00 -1,08E-02 |
| P P P P P P P P P P | Indicator GWP-total GWP-fossil GWP-biogenic GWP-luluc | Unit kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq | 0 0 0 0 | 0 0 0 0 | C2 1,05E+00 1,05E+00 4,33E-04 3,73E-04 | C3 1,38E+02 1,63E+01 1,21E+02 1,73E-04 | C4 4,67E-02 4,67E-02 2,53E-05 7,71E-06 | D -5,48E+00 -5,29E+00 -1,08E-02 -1,80E-01 |
| | Indicator GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP | Unit kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq | 0 0 0 0 | 0 0 0 0 0 | C2 1,05E+00 1,05E+00 4,33E-04 3,73E-04 2,37E-07 | C3 1,38E+02 1,63E+01 1,21E+02 1,73E-04 9,27E-08 | C4 4,67E-02 4,67E-02 2,53E-05 7,71E-06 5,77E-09 | D -5,48E+00 -5,29E+00 -1,08E-02 -1,80E-01 -3,81E-01 |
| | Indicator GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP AP | Unit kg CO ₂ -eq mol H+ -eq | 0 0 0 0 0 | 0 0 0 0 0 0 | C2 1,05E+00 1,05E+00 4,33E-04 3,73E-04 2,37E-07 3,01E-03 | C3 1,38E+02 1,63E+01 1,21E+02 1,73E-04 9,27E-08 1,33E-02 | C4 4,67E-02 4,67E-02 2,53E-05 7,71E-06 5,77E-09 1,78E-04 | D -5,48E+00 -5,29E+00 -1,08E-02 -1,80E-01 -3,81E-01 -4,33E-02 |
| | Indicator GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater | witk kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CFC11 -eq mol H+ -eq kg P -eq | 0 0 0 0 0 0 | 0 0 0 0 0 0 | C2 1,05E+00 1,05E+00 4,33E-04 3,73E-04 2,37E-07 3,01E-03 8,36E-06 | C3 1,38E+02 1,63E+01 1,21E+02 1,73E-04 9,27E-08 1,33E-02 1,68E-05 | C4 4,67E-02 4,67E-02 2,53E-05 7,71E-06 5,77E-09 1,78E-04 6,18E-07 | D -5,48E+00 -5,29E+00 -1,08E-02 -1,80E-01 -3,81E-01 -4,33E-02 -4,68E-04 |
| | Indicator GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine | kg CO ₂ -eq kg CFC11 -eq mol H+ -eq kg P -eq kg N -eq | 0 0 0 0 0 0 | 0 0 0 0 0 0 0 | C2 1,05E+00 1,05E+00 4,33E-04 3,73E-04 2,37E-07 3,01E-03 8,36E-06 5,95E-04 | C3 1,38E+02 1,63E+01 1,21E+02 1,73E-04 9,27E-08 1,33E-02 1,68E-05 6,34E-03 | C4 4,67E-02 4,67E-02 2,53E-05 7,71E-06 5,77E-09 1,78E-04 6,18E-07 5,66E-05 | D -5,48E+00 -5,29E+00 -1,08E-02 -1,80E-01 -3,81E-01 -4,33E-02 -4,68E-04 -1,41E-02 |
| | Indicator GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine EP-Terrestial | kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CFC11 -eq mol H+ -eq kg P -eq kg N -eq mol N -eq | 0 0 0 0 0 0 0 | 0 0 0 0 0 0 0 0 | C2 1,05E+00 1,05E+00 4,33E-04 3,73E-04 2,37E-07 3,01E-03 8,36E-06 5,95E-04 6,66E-03 | C3 1,38E+02 1,63E+01 1,21E+02 1,73E-04 9,27E-08 1,33E-02 1,68E-05 6,34E-03 6,75E-02 | C4 4,67E-02 4,67E-02 2,53E-05 7,71E-06 5,77E-09 1,78E-04 6,18E-07 5,66E-05 6,41E-04 | D -5,48E+00 -5,29E+00 -1,08E-02 -1,80E-01 -3,81E-01 -4,33E-02 -4,68E-04 -1,41E-02 -1,53E-01 |
| | Indicator GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine EP-Terrestial POCP | kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CFC11 -eq mol H+ -eq kg P -eq kg N -eq mol N -eq g NMVOC -eq | 0 0 0 0 0 0 0 0 | C1 0 0 0 0 0 0 0 0 | C2 1,05E+00 1,05E+00 4,33E-04 3,73E-04 2,37E-07 3,01E-03 8,36E-06 5,95E-04 6,66E-03 2,55E-03 | C3 1,38E+02 1,63E+01 1,21E+02 1,73E-04 9,27E-08 1,33E-02 1,68E-05 6,34E-03 6,75E-02 1,65E-02 | C4 4,67E-02 4,67E-02 2,53E-05 7,71E-06 5,77E-09 1,78E-04 6,18E-07 5,66E-05 6,41E-04 1,78E-04 | D -5,48E+00 -5,29E+00 -1,08E-02 -1,80E-01 -3,81E-01 -4,33E-02 -4,68E-04 -1,41E-02 -1,53E-01 -4,23E-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

Remarks to environmental impacts

[&]quot;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

| Additional er | nvironmental impac | t indicators | | | | | | |
|---------------------|---------------------|-------------------|-------------------|----------|----------|----------|----------|-----------|
| | Indicator | Unit | | A1-A3 | A4 | A5 | B2 | В3 |
| | PM | Disease incidence | Disease incidence | | 6,71E-07 | 3,99E-09 | 1,68E-10 | 0 |
| (101) | IRP ² | kgBq U235 -eq | | 4,16E+01 | 7,88E-01 | 2,83E-03 | 4,05E-04 | 0 |
| | ETP-fw ¹ | CTUe | CTUe | | 1,29E+02 | 7,05E-01 | 6,34E-02 | 0 |
| 44. *** <u>B</u> | HTP-c ¹ | CTUh | CTUh | | 0,00E+00 | 3,50E-11 | 9,00E-12 | 0 |
| 4° & | HTP-nc ¹ | CTUh | | 1,84E-06 | 1,43E-07 | 1,50E-09 | 2,11E-10 | 0 |
| | SQP ¹ | dimensionless | | 7,30E+03 | 1,08E+02 | 8,49E-01 | 1,64E-02 | 0 |
| li li | ndicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
| | PM | Disease incidence | 0 | 0 | 6,41E-08 | 1,28E-07 | 2,36E-09 | -2,61E-06 |
| | IRP ² | kgBq U235 -eq | 0 | 0 | 6,92E-02 | 1,62E-02 | 2,20E-03 | -4,77E-01 |
| | ETP-fw ¹ | CTUe | 0 | 0 | 1,17E+01 | 2,00E+01 | 7,73E-01 | -4,10E+02 |
| 28. <u>*</u> | HTP-c ¹ | CTUh | 0 | 0 | 0,00E+00 | 2,96E-09 | 3,80E-11 | -7,74E-09 |
| 96 <u>B</u> | HTP-nc ¹ | CTUh | 0 | 0 | 1,28E-08 | 1,39E-07 | 1,39E-09 | -3,83E-07 |

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)

1,11E+01

1,21E+00

1,43E+00

-5,00E+02

dimensionless

SQP¹

[&]quot;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

^{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 | В3 |
| | PERE | | MJ | 1,13E+03 | 2,33E+00 | 1,50E-02 | 7,96E-03 | 0 |
| | PERM | | МЈ | 7,85E+02 | 0,00E+00 | -1,43E+02 | 0,00E+00 | 0 |
| ₽. | PERT | | МЈ | 1,92E+03 | 2,33E+00 | -1,43E+02 | 7,96E-03 | 0 |
| | PENRE | | MJ | 2,90E+03 | 1,81E+02 | 6,63E-01 | 5,86E-02 | 0 |
| | PENRM | | MJ | 2,34E+02 | 0,00E+00 | -5,10E+01 | 0,00E+00 | 0 |
| IA | PENRT | | MJ | 3,13E+03 | 1,81E+02 | -5,03E+01 | 5,86E-02 | 0 |
| <u> </u> | SM | | kg | 2,26E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0 |
| 2 | RSF | | МЈ | 1,56E+01 | 8,13E-02 | 4,16E-04 | 6,38E-04 | 0 |
| | NRSF | | МЈ | 1,85E+01 | 2,73E-01 | 2,01E-03 | 6,29E-04 | 0 |
| & | FW | | m ³ | 2,84E+00 | 1,75E-02 | 3,76E-04 | 1,01E-02 | 0 |
| | | | | | | | | |
| | ndicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
| ्र च | ndicator PERE | Unit MJ | B4 0 | C1 0 | C2 2,27E-01 | C3 2,82E-01 | C4 2,44E-02 | D -4,62E+02 |
| | | | | | | | | |
| i de la companya de l | PERE | МЈ | 0 | 0 | 2,27E-01 | 2,82E-01 | 2,44E-02 | -4,62E+02 |
| E L | PERE PERM | MJ | 0 | 0 | 2,27E-01 0,00E+00 | 2,82E-01 -6,42E+02 | 2,44E-02 0,00E+00 | -4,62E+02 0,00E+00 |
| ्र (हे ड] ्रह् | PERE PERM PERT | M1 M1 | 0 0 0 | 0 0 | 2,27E-01 0,00E+00 2,27E-01 | 2,82E-01 -6,42E+02 -6,42E+02 | 2,44E-02 0,00E+00 2,44E-02 | -4,62E+02 0,00E+00 -4,62E+02 |
| ₽ | PERE PERM PERT PENRE | MI MI MI | 0 0 0 0 | 0 0 0 | 2,27E-01 0,00E+00 2,27E-01 1,58E+01 | 2,82E-01 -6,42E+02 -6,42E+02 8,28E+00 | 2,44E-02 0,00E+00 2,44E-02 4,77E-01 | -4,62E+02 0,00E+00 -4,62E+02 -7,52E+01 |
| # # # # # | PERE PERM PERT PENRE PENRM | M1 M1 M1 M1 | 0 0 0 0 | 0 0 0 0 | 2,27E-01 0,00E+00 2,27E-01 1,58E+01 0,00E+00 | 2,82E-01 -6,42E+02 -6,42E+02 8,28E+00 -1,83E+02 | 2,44E-02 0,00E+00 2,44E-02 4,77E-01 0,00E+00 | -4,62E+02 0,00E+00 -4,62E+02 -7,52E+01 0,00E+00 |
| | PERE PERM PERT PENRE PENRM PENRT | M1 M1 M1 M1 M1 | 0 0 0 0 0 | 0 0 0 0 0 | 2,27E-01 0,00E+00 2,27E-01 1,58E+01 0,00E+00 1,58E+01 | 2,82E-01 -6,42E+02 -6,42E+02 8,28E+00 -1,83E+02 -1,74E+02 | 2,44E-02 0,00E+00 2,44E-02 4,77E-01 0,00E+00 4,77E-01 | -4,62E+02 0,00E+00 -4,62E+02 -7,52E+01 0,00E+00 -7,52E+01 |
| | PERE PERM PERT PENRE PENRM PENRT SM | MJ MJ MJ MJ MJ kg | 0 0 0 0 0 0 | 0 0 0 0 0 | 2,27E-01 0,00E+00 2,27E-01 1,58E+01 0,00E+00 1,58E+01 0,00E+00 | 2,82E-01 -6,42E+02 -6,42E+02 8,28E+00 -1,83E+02 -1,74E+02 0,00E+00 | 2,44E-02 0,00E+00 2,44E-02 4,77E-01 0,00E+00 4,77E-01 0,00E+00 | -4,62E+02 0,00E+00 -4,62E+02 -7,52E+01 0,00E+00 -7,52E+01 0,00E+00 |

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 resources used as raw materials; PENRM = Use of non renewable primary energy resources; SM = Use of secondary materials; PENRM = Use of renewable primary energy resources; SM = Use of secondary materials; PENRM = 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 | | U | nit | A1-A3 | A4 | A5 | B2 | В3 |
| | HWD | HWD | | kg | | 8,97E-03 | 0,00E+00 | 1,11E-05 | 0 |
| Ū | NHWD | | k | g | 2,61E+01 | 7,31E+00 | 2,20E+00 | 7,11E-04 | 0 |
| . | RWD | | k | g | 2,19E-02 | 1,24E-03 | 0,00E+00 | 3,43E-07 | 0 |
| In | dicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
| | HWD | | kg | 0 | 0 | 8,16E-04 | 0,00E+00 | 9,83E-01 | -3,83E-03 |
| Ū | NHWD | | kg | 0 | 0 | 7,70E-01 | 5,00E-01 | 3,22E-01 | -1,79E+00 |
| 8 | RWD | | kg | 0 | 0 | 1,08E-04 | 0,00E+00 | 2,64E-06 | -3,91E-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 | | | | | | | | |
|---------------------------|-----------|------|------|----------|----------|----------|----------|----------|
| Ind | Indicator | | Unit | | A4 | A5 | B2 | В3 |
| ®▷ | CRU | kg | | 0,00E+00 | 0,00E+00 | 9,50E+00 | 0,00E+00 | 0 |
| &> | MFR | kg | | 2,91E+01 | 0,00E+00 | 1,08E+00 | 0,00E+00 | 0 |
| Þ₹ | MER | kg | | 4,32E+01 | 0,00E+00 | 5,31E-01 | 0,00E+00 | 0 |
| 50 | EEE | MJ | | 3,04E+01 | 0,00E+00 | 3,74E-01 | 0,00E+00 | 0 |
| D | EET | MJ | | 4,60E+02 | 0,00E+00 | 5,65E+00 | 0,00E+00 | 0 |
| Indicato | or | Unit | B4 | C1 | C2 | C3 | C4 | D |
| ∅ D | CRU | kg | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| &▷ | MFR | kg | 0 | 0 | 0,00E+00 | 7,13E-02 | 0,00E+00 | 0,00E+00 |
| DF | MER | kg | 0 | 0 | 0,00E+00 | 7,85E+01 | 0,00E+00 | 0,00E+00 |
| ₹ D | EEE | MJ | 0 | 0 | 0,00E+00 | 5,93E+01 | 0,00E+00 | 0,00E+00 |
| DØ | EET | МЈ | 0 | 0 | 0,00E+00 | 8,97E+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*10-3 = 0,009" *INA Indicator Not Assessed

| Biogenic Carbon Content | | | | | | | |
|-------------------------|---------------------|--|--|--|--|--|--|
| Unit | At the factory gate | | | | | | |
| kg C | 3,31E+01 | | | | | | |
| kg C | 4,37E+00 | | | | | | |
| | kg C | | | | | | |

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 | Data source | Amount | Unit |
|----------------------------|---------------|--------|--------------|
| Electricity, Finland (kWh) | ecoinvent 3.6 | 255,20 | g CO2-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 | -7,74 | 12,35 | 159,51 | 154,03 |
| Total energy consumption | MJ | 4064,01 | 183,45 | 4273,65 | 3709,52 |
| Amount of recycled materials | % | 0.25 | | | |

| Additional environmental impact indicators required in NPCR Part A for construction products | | | | | | | |
|--|------------------------|------------------------|----|----------|----------|----------|-----------|
| Indicator | Unit | Unit | | A4 | A5 | B2 | В3 |
| GWPIOBC | kg CO ₂ -eq | kg CO ₂ -eq | | 1,23E+01 | 1,17E-01 | 3,45E-03 | 0 |
| Indicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
| GWPIOBC | kg CO ₂ -eq | 0 | 0 | 1,05E+00 | 1,57E+01 | 4,94E-02 | -5,43E+00 |

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.

Variants and Options

| Key environmental indicators (A1-A3) for variants of this EPD | | | | | | |
|---|-------------|-----------------------------------|-------------------------------|----------------------------------|--|--|
| Variants | Weight (kg) | GWPtotal (kg CO ₂ -eq) | Total energy consumption (MJ) | Amount of recycled materials (%) | | |
| Combo double doors 80×44×204 (plinth) | 80,50 | -15,81 | 4061,64 | 0,32 | | |
| Combo double doors 80×44×204 (metal legs) | 80,20 | -14,26 | 4026,16 | 0,32 | | |
| Combo double doors 80x44x166 (plinth) | 63,01 | -9,05 | 3373,65 | 0,48 | | |
| Combo double doors 80x44x166 (metal legs) | 74,20 | -5,79 | 3867,66 | 0,57 | | |
| Combo Locker 80x44x166 (plinth) | 75,20 | -5,66 | 3933,92 | 0,46 | | |
| Combo Side cabinet | 68,05 | 5,82 | 3580,56 | 0,25 | | |

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