epd-norge
Global program operatør

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

## Nilo Chair

The Norwegian EPD Foundation

**Owner of the declaration:**
Kinnarps AB

**Product:**
Nilo Chair

**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:**

NEPD-5723-5009-EN

**Registration number:**

NEPD-5723-5009-EN

**Issue date:** 08.01.2024

**Valid to:** 08.01.2029

**EPD Software:**
LCA.no EPD generator ID: 120790

## General information

**Product**

Nilo Chair

**Owner of the declaration:**

Kinnarps AB
Contact person: Johanna Ljunggren - Corporate Sustainability Manager
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e-mail: johanna.ljunggren@kinnarps.se

**Program operator:**

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

**Manufacturer:**

Kinnarps AB

**Declaration number:** NEPD-5723-5009-EN

**Place of production:**

Kinnarps AB
Industrigatan
521 88 Kinnarp, Sweden

**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

**Management system:**

ISO 9001, ISO 14001, ISO 45001

**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.

**Organisation no:**

556256-6736

**Declared unit:**

1 pcs Nilo Chair

**Issue date:** 08.01.2024

**Declared unit (cradle to gate) with option:**

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

**Valid to:** 08.01.2029

**Year of study:**

2022

**Functional unit:**

Production of one Nilo chair, provided and maintained for a period of 15 years.

**Comparability:**

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

**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

**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.

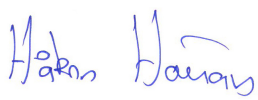
Developer of EPD: Isabell Vesterberg

Reviewer of company-specific input data and EPD: Johanna Ljunggren

**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.

**Approved:**



Håkon Hauan, CEO EPD-Norge

Third party verifier:

Elisabet Amat, GREENIZE projects

(no signature required

## Product

### Product description:

Nilo wooden shell chair with 4-legged steel underframe with castors. Armrests are available as options. Felt pads and connectors are available as options for Nilo variants with 4-legged underframe and sledge underframe.

Nilo is a practical and sustainable wooden shell chair in several versions that form a complete family of chairs. Thanks to its simple shape, it has the flexibility to fit into many different spaces, and is ideal for e.g. dining rooms, cafés and meeting rooms.

Read more: https://www.kinnarps.com/products/seating/chairs/nilo/

### Product specification

Nilo is made from renewable FSC®-certified wood, which guarantees responsible forestry with respect to both people and the environment. The chair is made of a few parts, all of which you can either recycle, separate or replace - making it a circular and sustainable choice. Nilo is available with wooden seat shell, with or without upholstered seat cushion or fully upholstered.

The back has a natural springiness that counteracts static sitting and increases blood circulation. The contoured seat provides a comfortable seating, as the user's weight is distributed over a larger area. The seat shell is available in durable laminate, providing durability in especially tough spaces. Nilo is available with handles at the back, which makes it easy to move and support yourself on. The chair is stackable and available with castors, offering flexible environments and space efficient solutions. It can also be hung on tables, which frees up floor space and facilitates cleaning.

This EPD includes the following variants:
Nilo 4-legged with wooden seat shell,
Nilo 4-legged with upholstered seat cushion in two different fabrics; 100 % recycled polyester fabric or wool-blend fabric,
Nilo 4-legged with completely upholstered seat shell, one variant in 100 % recycled polyester, one in polyester fabric and one in wool-blend fabric,
Nilo with sledge underframe.

Included options are:
Armrests,
Felt pads,
Connectors.

| Materials | kg | % | Recycled share in material (kg) | Recycled share in material (%) |
|---|---|---|---|---|
| Metal - Steel | 2,32 | 45,84 | 0,46 | 20,00 |
| Plastic - Nylon (PA) | 0,22 | 4,36 | 0,00 | 0,00 |
| Plastic - Polypropylene (PP) | 0,22 | 4,36 | 0,00 | 0,00 |
| Powder coating | 0,03 | 0,49 | 0,00 | 0,00 |
| Wood - Plywood | 2,27 | 44,96 | 0,00 | 0,00 |
| Total | 5,05 | | 0,46 | |

### Technical data:

Certifications:
Swedish Möbelfakta,
Nilo is FSC®-certified (FSC®C010544) in all executions.

Fulfilled technical standards:
EN 16139:2013 Furniture - Strength, durability and safety - Requirements for non-domestic seating,
EN 1729 Furniture - Chairs and tables for educational institutions.

Fulfilled fire requirements, for upholstered variants:
EN 1021-1 Assessment of the ignitability of upholstered furniture – Part 1: Ignition source smouldering cigarette, with Kinnarps standard fabrics,
EN 1021-2 Assessment of the ignitability of upholstered furniture – Part 2: Ignition source match flame equivalent, with Kinnarps standard fabrics.

### Market:

Mainly Europe, but is available world wide.

### Reference service life, product

15 years.

### Reference service life, building

## LCA: Calculation rules

### Declared unit:

1 pcs Nilo Chair

### 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.
Specific data for the manufacturing processes (product stage A3) refers to the year 2020. All other specific data is from year of study.

| Materials | Source | Data quality | Year |
|---|---|---|---|
| Metal - Steel | ecoinvent 3.6 | Database | 2019 |
| Plastic - Nylon (PA) | ecoinvent 3.6 | Database | 2019 |
| Plastic - Polypropylene (PP) | ecoinvent 3.6 | Database | 2019 |
| Powder coating | Ecoinvent 3.6 | Database | 2019 |
| Wood - Plywood | modified ecoinvent 3.6 | Database | 2019 |

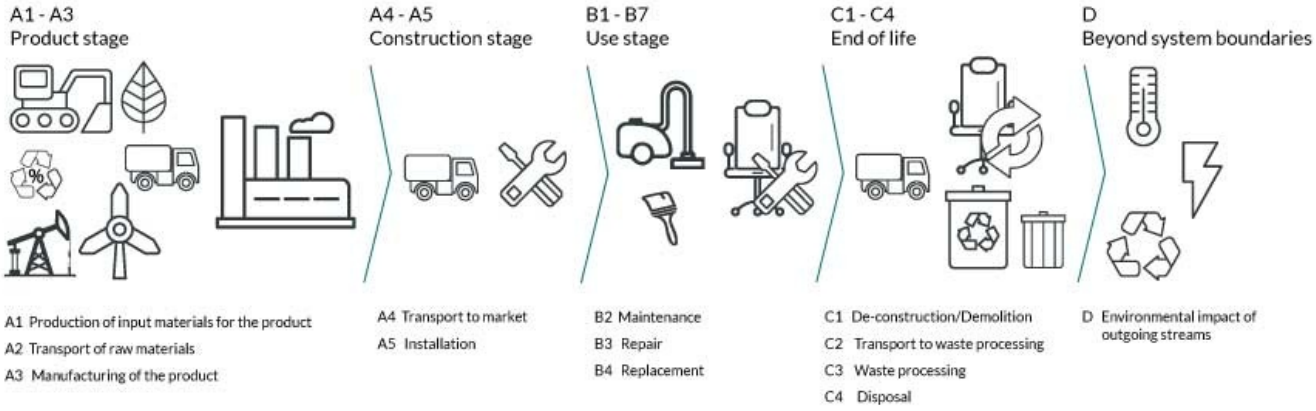
## System boundaries (X=included, MND=module not declared, MNR=module not relevant)

| 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 | MND | X | X | X | MND | MND | MND | X | X | X | X | X |

### System boundary:

The wooden seat shell is bought as a premanufactured component. The upholstering is done at Kinnarps' production site in Skillingaryd, where the fabric is also processed. Certain steel components are manufactured at Kinnarps' production site in Jönköping and some are purchased as premanufactured components. Final assembly of the product is done at Kinnarps' production site in Kinnarp.

The flow chart below illustrates the system boundaries of the analysis.




### Additional technical information:

## LCA: Scenarios and additional technical information

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

The product is shipped to the consumer in Kinnarps' trucks with blankets and cardboard sheets as packaging material which is returned to the factory after delivery and reused. This method saves 270 kg of packaging material per container and enables 50% more products to be transported in each truck. Kinnarps' trucks have a load efficiency of over 90% and are run on diesel with renewable content. For more information about sustainability at Kinnarps, visit https://www.kinnarps.com/about-kinnarps/sustainability/.

The maintenance scenario includes wet-wiping once a week for the whole reference service life. For upholstered variants, the maintenance scenario includes vaccum cleaning of textiles once a week for the whole reference service life.

In normal use, no repair or replacement is required during the product's referenced service life.

| Transport from production place to user (A4) | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit | Value (Liter/tonne) |
|---|---|---|---|---|---|
| Truck, 16-32 tonnes, HVO, EURO 6 (kgkm) | 36,7 % | 300 | 0,043 | l/tkm | 12,90 |

| Maintenance (B2) | Unit | Value | | | |
|---|---|---|---|---|---|
| Water, tap water (m3) | m3/DU | 0,78 | | | |

| Transport to waste processing (C2) | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit | Value (Liter/tonne) |
|---|---|---|---|---|---|
| Truck, over 32 tonnes, EURO 6 (km) | 53,3 % | 85 | 0,023 | l/tkm | 1,96 |

| Waste processing (C3) | Unit | Value | | | |
|---|---|---|---|---|---|
| Waste treatment per kg Non-hazardous waste, incineration with fly ash extraction - C3 (kg) | kg | 0,03 | | | |
| Waste treatment per kg Plastics, Mixture, municipal incineration with fly ash extraction (kg) | kg | 0,22 | | | |
| Waste treatment per kg Polypropylene (PP), incineration with fly ash extraction - C3 (kg) | kg | 0,22 | | | |
| Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg) | kg | 2,32 | | | |
| Waste treatment per kg Wood, incineration with fly ash extraction (kg) | kg | 2,27 | | | |
| Waste, materials to recycling (kg) | kg | 0,79 | | | |

| Disposal (C4) | Unit | Value | | | |
|---|---|---|---|---|---|
| Landfilling of ashes and residues from incineration of Scrap steel (kg) | kg | 1,53 | | | |
| Landfilling of ashes from incineration of Non-hazardous waste, process per kg ashes and residues - C4 (kg) | kg | 0,01 | | | |
| Landfilling of ashes from incineration of Plastics, Mixture, municipal incineration with fly ash extraction, process per kg ashes and residues - C4 (kg) | kg | 0,01 | | | |
| 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 Wood, process per kg ashes and residues (kg) | kg | 0,03 | | | |

| Benefits and loads beyond the system boundaries (D) | Unit | Value | | | |
|---|---|---|---|---|---|
| Substitution of electricity, in Norway (MJ) | MJ | 2,29 | | | |
| Substitution of primary steel with net scrap (kg) | kg | 0,63 | | | |
| Substitution of thermal energy, district heating, in Norway (MJ) | MJ | 34,65 | | | |

## 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 | 1,12E+01 | 5,95E-02 | 0 | 2,69E-01 | 0 |
| | GWP-fossil | kg $CO_2$ -eq | 1,47E+01 | 5,93E-02 | 0 | 2,67E-01 | 0 |
| | GWP-biogenic | kg $CO_2$ -eq | -3,46E+00 | 1,01E-04 | 0 | 1,68E-03 | 0 |
| | GWP-luluc | kg $CO_2$ -eq | 3,54E-02 | 9,25E-05 | 0 | 4,35E-04 | 0 |
| | ODP | kg CFC11 -eq | 1,25E-06 | 1,22E-08 | 0 | 2,37E-08 | 0 |
| | AP | mol H+ -eq | 7,75E-02 | 4,16E-04 | 0 | 1,56E-03 | 0 |
| | EP-FreshWater | kg P -eq | 7,81E-04 | 2,18E-06 | 0 | 2,14E-05 | 0 |
| | EP-Marine | kg N -eq | 1,64E-02 | 1,10E-04 | 0 | 2,48E-04 | 0 |
| | EP-Terrestial | mol N -eq | 1,83E-01 | 1,23E-03 | 0 | 2,88E-03 | 0 |
| | POCP | kg NMVOC -eq | 6,30E-02 | 4,51E-04 | 0 | 9,05E-04 | 0 |
| | ADP-minerals&metals[1] | kg Sb -eq | 3,00E-04 | 7,21E-06 | 0 | 7,48E-06 | 0 |
| | ADP-fossil[1] | MJ | 2,34E+02 | 1,26E+00 | 0 | 4,57E+00 | 0 |
| | WDP[1] | $m^3$ | 4,29E+03 | 3,72E+00 | 0 | 8,18E+01 | 0 |

| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| | GWP-total | kg $CO_2$ -eq | 0 | 0 | 3,78E-02 | 4,96E+00 | 1,79E-02 | -9,00E-01 |
| | GWP-fossil | kg $CO_2$ -eq | 0 | 0 | 3,78E-02 | 1,18E+00 | 1,79E-02 | -8,92E-01 |
| | GWP-biogenic | kg $CO_2$ -eq | 0 | 0 | 1,62E-05 | 3,79E+00 | 1,33E-05 | -7,96E-04 |
| | GWP-luluc | kg $CO_2$ -eq | 0 | 0 | 1,15E-05 | 1,12E-05 | 5,31E-06 | -7,23E-03 |
| | ODP | kg CFC11 -eq | 0 | 0 | 9,10E-09 | 5,32E-09 | 5,42E-09 | -1,46E-02 |
| | AP | mol H+ -eq | 0 | 0 | 1,22E-04 | 6,28E-04 | 1,24E-04 | -5,09E-03 |
| | EP-FreshWater | kg P -eq | 0 | 0 | 3,00E-07 | 1,01E-06 | 1,81E-07 | -6,04E-05 |
| | EP-Marine | kg N -eq | 0 | 0 | 2,66E-05 | 2,92E-04 | 4,43E-05 | -1,25E-03 |
| | EP-Terrestial | mol N -eq | 0 | 0 | 2,97E-04 | 3,09E-03 | 4,91E-04 | -1,31E-02 |
| | POCP | kg NMVOC -eq | 0 | 0 | 1,17E-04 | 7,74E-04 | 1,41E-04 | -5,08E-03 |
| | ADP-minerals&metals[1] | kg Sb -eq | 0 | 0 | 6,73E-07 | 2,79E-07 | 3,02E-07 | -1,39E-05 |
| | ADP-fossil[1] | MJ | 0 | 0 | 6,13E-01 | 4,52E-01 | 4,01E-01 | -8,69E+00 |
| | WDP[1] | $m^3$ | 0 | 0 | 4,70E-01 | 1,37E+00 | 8,41E-01 | 8,57E-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 | 1,57E-06 | 1,38E-08 | 0 | 1,31E-08 | 0 |
| | IRP[2] | kgBq U235 -eq | 1,84E+00 | 4,10E-03 | 0 | 3,16E-02 | 0 |
| | ETP-fw[1] | CTUe | 4,70E+02 | 1,83E+00 | 0 | 4,95E+00 | 0 |
| | HTP-c[1] | CTUh | 6,61E-08 | 0,00E+00 | 0 | 7,39E-10 | 0 |
| | HTP-nc[1] | CTUh | 5,38E-07 | 3,06E-09 | 0 | 1,64E-08 | 0 |
| | SQP[1] | dimensionless | 6,35E+02 | 2,34E+00 | 0 | 1,28E+00 | 0 |

| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| | PM | Disease incidence | 0 | 0 | 3,47E-09 | 8,59E-09 | 2,26E-09 | -1,58E-07 |
| | IRP[2] | kgBq U235 -eq | 0 | 0 | 2,68E-03 | 1,04E-03 | 1,61E-03 | -1,59E-02 |
| | ETP-fw[1] | CTUe | 0 | 0 | 4,48E-01 | 2,69E+00 | 2,44E-01 | -5,42E+01 |
| | HTP-c[1] | CTUh | 0 | 0 | 0,00E+00 | 2,36E-10 | 9,00E-12 | -3,61E-09 |
| | HTP-nc[1] | CTUh | 0 | 0 | 4,34E-10 | 6,41E-09 | 2,42E-10 | 5,73E-08 |
| | SQP[1] | dimensionless | 0 | 0 | 7,03E-01 | 8,06E-02 | 8,80E-01 | -1,96E+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 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 | B3 |
|---|---|---|---|---|---|---|---|
| | PERE | MJ | 1,38E+02 | 5,69E-02 | 0 | 6,21E-01 | 0 |
| | PERM | MJ | 3,18E+01 | 0,00E+00 | 0 | 0,00E+00 | 0 |
| | PERT | MJ | 1,70E+02 | 5,69E-02 | 0 | 6,21E-01 | 0 |
| | PENRE | MJ | 2,20E+02 | 1,26E+00 | 0 | 4,57E+00 | 0 |
| | PENRM | MJ | 1,58E+01 | 0,00E+00 | 0 | 0,00E+00 | 0 |
| | PENRT | MJ | 2,35E+02 | 1,26E+00 | 0 | 4,57E+00 | 0 |
| | SM | kg | 4,81E-01 | 0,00E+00 | 0 | 0,00E+00 | 0 |
| | RSF | MJ | 2,44E-01 | 1,85E-03 | 0 | 4,98E-02 | 0 |
| | NRSF | MJ | 3,42E-01 | 6,37E-03 | 0 | 4,91E-02 | 0 |
| | FW | $m^3$ | 1,79E-01 | 5,14E-04 | 0 | 7,85E-01 | 0 |

| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| | PERE | MJ | 0 | 0 | 7,71E-03 | 1,90E-02 | 7,68E-03 | -1,82E+01 |
| | PERM | MJ | 0 | 0 | 0,00E+00 | -3,18E+01 | 0,00E+00 | 0,00E+00 |
| | PERT | MJ | 0 | 0 | 7,71E-03 | -3,18E+01 | 7,68E-03 | -1,82E+01 |
| | PENRE | MJ | 0 | 0 | 6,13E-01 | 4,55E-01 | 4,01E-01 | -8,69E+00 |
| | PENRM | MJ | 0 | 0 | 0,00E+00 | -1,58E+01 | 0,00E+00 | 0,00E+00 |
| | PENRT | MJ | 0 | 0 | 6,13E-01 | -1,53E+01 | 4,01E-01 | -8,69E+00 |
| | SM | kg | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| | RSF | MJ | 0 | 0 | 2,70E-04 | 4,19E-04 | 2,03E-04 | 2,19E-02 |
| | NRSF | MJ | 0 | 0 | 9,04E-04 | 0,00E+00 | 1,76E-02 | -3,25E-01 |
| | FW | $m^3$ | 0 | 0 | 6,98E-05 | 1,30E-03 | 3,62E-04 | -2,28E-02 |

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

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

## End of life - Waste

| Indicator | | Unit | A1-A3 | A4 | A5 | B2 | B3 |
|---|---|---|---|---|---|---|---|
| | HWD | kg | 1,37E-01 | 1,76E-04 | 0 | 8,64E-04 | 0 |
| | NHWD | kg | 4,73E+00 | 1,87E-01 | 0 | 5,55E-02 | 0 |
| | RWD | kg | 1,18E-03 | 5,03E-06 | 0 | 2,68E-05 | 0 |

| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| | HWD | kg | 0 | 0 | 3,36E-05 | 0,00E+00 | 1,55E+00 | -3,73E-03 |
| | NHWD | kg | 0 | 0 | 5,33E-02 | 2,50E-02 | 1,97E-02 | -3,51E-01 |
| | RWD | kg | 0 | 0 | 4,19E-06 | 0,00E+00 | 2,46E-06 | -1,31E-05 |

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 | 0,00E+00 | 0 |
| | MFR | kg | 1,23E+00 | 0,00E+00 | 0 | 0,00E+00 | 0 |
| | MER | kg | 5,12E-06 | 0,00E+00 | 0 | 0,00E+00 | 0 |
| | EEE | MJ | 4,84E-01 | 0,00E+00 | 0 | 0,00E+00 | 0 |
| | EET | MJ | 7,33E+00 | 0,00E+00 | 0 | 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 | 7,86E-01 | 0,00E+00 | 0,00E+00 |
| | MER | kg | 0 | 0 | 0,00E+00 | 5,05E+00 | 0,00E+00 | 0,00E+00 |
| | EEE | MJ | 0 | 0 | 0,00E+00 | 2,34E+00 | 0,00E+00 | 0,00E+00 |
| | EET | MJ | 0 | 0 | 0,00E+00 | 3,54E+01 | 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

| Indicator | Unit | At the factory gate |
|---|---|---|
| Biogenic carbon content in product | kg C | 1,03E+00 |
| Biogenic carbon content in accompanying packaging | kg C | 0,00E+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 | Data source | Amount | Unit |
|---|---|---|---|
| Electricity, Sweden (kWh) | ecoinvent 3.6 | 54,94 | g CO2-eq/kWh |

### Dangerous substances

The product contains substances given by the REACH Candidate list that are less than 0,1 % by weight.

### Indoor environment

The product is low-emitting and tested according to Swedish Möbelfakta.

## Additional Environmental Information

### Key Environmental Indicators

| Key environmental indicators | Unit | A1-A3 | A4 | A1-C4 | A1-D |
|---|---|---|---|---|---|
| GWPtotal | kg $CO_2$ -eq | 11,24 | 0,06 | 16,59 | 15,69 |
| Total energy consumption | MJ | 358,20 | 1,32 | 366,34 | 339,13 |
| Amount of recycled materials | % | 9,17 | | | |

| 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 | 1,63E+01 | 5,95E-02 | 0 | 2,69E-01 | 0 |

| Indicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|
| GWPIOBC | kg $CO_2$ -eq | 0 | 0 | 3,78E-02 | 1,15E+00 | 1,87E-02 | -1,24E+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 (%) |
| Nilo - 4-legged - Wooden seat shell | 4,40 | 6,49 | 289,79 | 9,48 |
| Nilo - 4-legged - Upholstered seat cushion - 100 % recycled polyester fabric | 5,40 | 7,45 | 354,70 | 11,78 |
| Nilo - 4-legged - Upholstered seat cushion - Wool blend fabric | 5,50 | 25,88 | 455,30 | 7,59 |
| Nilo - 4-legged - Upholstered - 100 % recycled polyester fabric | 5,20 | 11,51 | 358,14 | 16,16 |
| Nilo - 4-legged - Upholstered - Wool blend fabric | 5,30 | 46,96 | 551,42 | 7,77 |
| Nilo - 4-legged - Upholstered - Polyester fabric | 5,20 | 11,78 | 382,61 | 8,00 |
| Nilo - Sledge underframe | 5,70 | 16,77 | 475,01 | 12,02 |

| Key environmental indicators (A1-A3) for options for this EPD | | | | |
|---|---|---|---|---|
| Options | Weight (kg) | GWPtotal (kg $CO_2$ -eq) | Total energy consumption (MJ) | Amount of recycled materials (%) |
| Nilo - Armrests, pair | 0,50 | 2,17 | 39,00 | 18,35 |
| Nilo - Felt pads, 4 pcs | 0,01 | 0,04 | 0,79 | 0,00 |
| Nilo - Connector, 1 pcs | 0,13 | 0,54 | 10,83 | 0,00 |

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