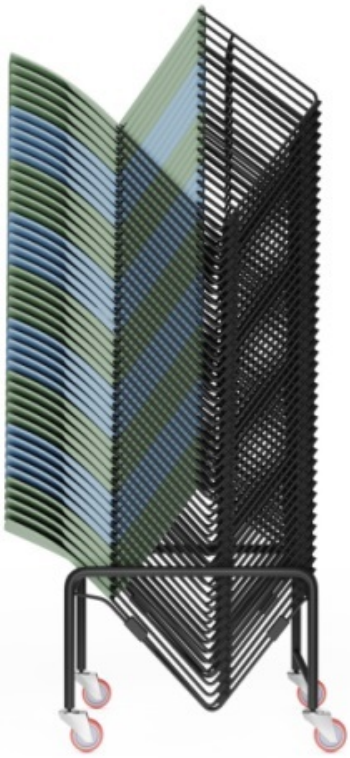
epd-norge
Global program operatør

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

## Profim Ariz







profim

Flokk

The Norwegian EPD Foundation

**Owner of the declaration:**
Flokk AS

**Product:**
Profim Ariz

**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: 400613

## General information

**Product**

Profim Ariz

**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 Profim Ariz

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

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

**Functional unit:**

Profim Ariz 570V chair, Upholstered seat and backrest (XtremeCamira), wo armrests - Including packaging

**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:**

Flokk AS
Contact person: Atle Thiis-Messel
Phone: 0047 98 25 68 30
e-mail: atle.messel@flokk.com

**Manufacturer:**

Flokk AS
Drammensveien 145,
0277 Oslo, Norway

**Place of production:**

Flokk - Turek
ul. Górnicza 8
62-700 Turek, Poland

**Management system:**

ISO 14001, ISO 9001, ISO 50001(Norway, Sweden)

**Organisation no:**

No 928 902 749

**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: Damian Bakowski

Reviewer of company-specific input data and EPD: Monika Kuczynska

**Approved:**

## Product

### Product description:

Extremely comfortable and lightweight conference and auditorium chair. Chairs can be joined in rows, which is useful, for example, in lecture halls. Regardless of the configuration, it's a model that will allow you to sit comfortably, provide space flexibility and safe use.

### Product specification

The model studied in detail in this declaration is the Profim Ariz 570V chair upholstered seat and backrest in Xtreme fabric from Camira, without armrests, including carton box packaging.

The key environmental indicators for the other models of the family, and applicable options of the product collection are presented in a table on pages 11-12 of this declaration.

| Materials | kg | % | Recycled share in material (kg) | Recycled share in material (%) |
|---|---|---|---|---|
| Adhesive | 0,07 | 1,00 | 0,00 | 1,82 |
| Metal - Steel | 3,52 | 50,45 | 0,70 | 19,78 |
| Plastic - Polyoxymethylene (POM) | 0,01 | 0,14 | 0,00 | 0,00 |
| Plastic - Polypropylene (PP) | 2,24 | 32,17 | 0,00 | 0,00 |
| Plastic - Polyurethane (PUR) | 0,03 | 0,49 | 0,00 | 0,00 |
| Powder coating | 0,05 | 0,72 | 0,00 | 0,00 |
| Textile - Polyester (PE) | 1,05 | 15,02 | 0,87 | 83,50 |
| Total | 6,97 | 100,00 | 1,57 | |

| Packaging | kg | % | Recycled share in material (kg) | Recycled share in material (%) |
|---|---|---|---|---|
| Packaging - Cardboard | 0,43 | 12,58 | 0,00 | 0,00 |
| Packaging - Paper | 0,02 | 0,66 | 0,01 | 34,31 |
| Packaging - Plastic straps | 0,00 | 0,13 | 0,00 | 0,00 |
| Plastic - Polyethylene (LDPE) | 0,12 | 3,41 | 0,12 | 100,00 |
| Recycled cardboard | 2,86 | 83,22 | 2,86 | 100,00 |
| Total incl. packaging | 10,41 | 100,00 | 4,55 | |

### Technical data:

- wide configuration possibilities with several plastic colours and a wide range of upholstery fabrics
- plastic, upholstered, and mesh versions.
- version with comfortable armrest available
- possibility of high stacking (up to 45 pieces on a special trolley for chair transport)
- option to join in rows, mount writing top and newspaper basket

### Market:

Worldwide

### Reference service life, product

5 years

### Reference service life, building

## LCA: Calculation rules

### Declared unit:

1 pcs Profim Ariz

### 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:

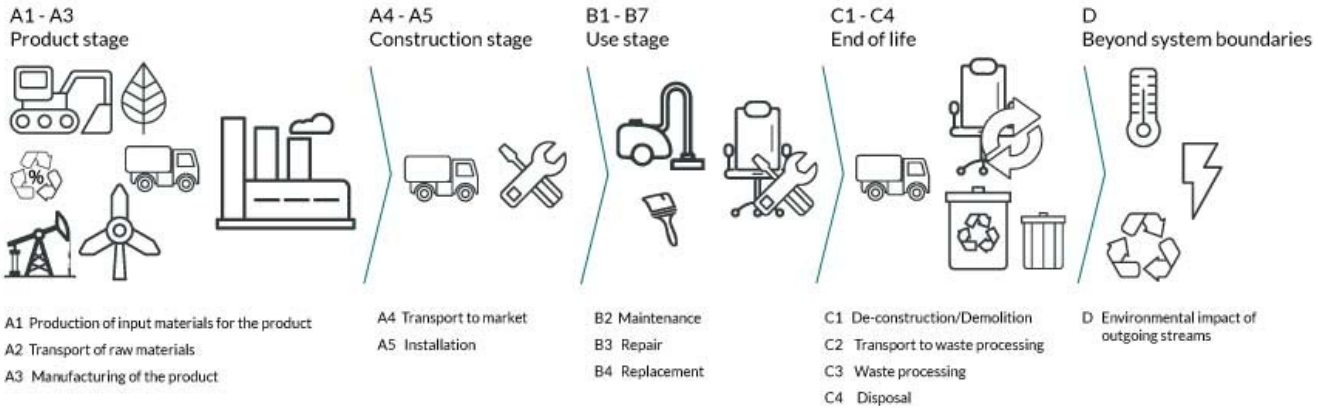
Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other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

| Materials | Source | Data quality | Year |
|---|---|---|---|
| Adhesive | Modified ecoinvent 3.6 | Database/Supplier | 2019 |
| Metal - Steel | ecoinvent 3.6 | Database | 2019 |
| Metal - Steel | Modified ecoinvent 3.6 | Database | 2019 |
| Packaging - Cardboard | Modified ecoinvent 3.6 | Database | 2019 |
| Packaging - Paper | ecoinvent 3.6 | Database | 2019 |
| Packaging - Plastic straps | ecoinvent 3.6 | Database | 2019 |
| Plastic - Polyethylene (LDPE) | ecoinvent 3.6 | Database | 2019 |
| Plastic - Polyoxymethylene (POM) | ecoinvent 3.6 | Database | 2019 |
| Plastic - Polypropylene (PP) | ecoinvent 3.6 | Database | 2019 |
| Plastic - Polyurethane (PUR) | ecoinvent 3.6 | Database | 2019 |
| Powder coating | Ecoinvent 3.6 | Database | 2019 |
| Recycled cardboard | Modified ecoinvent 3.6 | Database | 2019 |
| Textile - Polyester (PE) | ecoinvent 3.6 | Database | 2019 |
| Textile - Polyester (PE) | 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:




### Additional technical information:

## LCA: Scenarios and additional technical information

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

| Transport from production place to user (A4) | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit | Value (Liter/tonne) |
|---|---|---|---|---|---|
| Truck, over 32 tonnes, EURO 5 (km) | 53,3 % | 1000 | 0,023 | l/tkm | 23,00 |

| Assembly (A5) | Unit | Value | | | |
|---|---|---|---|---|---|
| Waste, packaging, cardboard, 100 % recycled, to average treatment (kg) | kg | 2,86 | | | |
| Waste, packaging, corrugated board box, 0 % recycled, to average treatment (kg) | kg | 0,43 | | | |
| Waste, packaging, paper printed, to average treatment (kg) | kg | 0,02 | | | |
| Waste, packaging, PET straps, to average treatment - A5 (kg) | kg | 0,00 | | | |
| Waste, packaging, plastic film (LDPE), to average treatment - A5 (kg) | kg | 0,12 | | | |

| Maintenance (B2) | Unit | Value | | | |
|---|---|---|---|---|---|
| Electricity, European average (kWh) | kWh/DU | 10,53 | | | |
| Electricity, World average (kWh) | kWh/DU | 1,17 | | | |
| Water, tap water (m3) | m3/DU | 0,78 | | | |

| Repair (B3) | Unit | Value | | | |
|---|---|---|---|---|---|
| Electricity, European average (kWh) | kWh/DU | 0,50 | | | |
| Electricity, World average (kWh) | kWh/DU | 0,06 | | | |

| Transport to waste processing (C2) | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit | Value (Liter/tonne) |
|---|---|---|---|---|---|
| Truck, 16-32 tonnes, EURO 5 (km) | 36,7 % | 85 | 0,044 | l/tkm | 3,74 |

| Waste processing (C3) | Unit | Value | | | |
|---|---|---|---|---|---|
| Waste treatment per kg Hazardous waste, incineration (kg) | kg | 0,07 | | | |
| Waste treatment per kg Non-hazardous waste, incineration with fly ash extraction - C3 (kg) | kg | 0,05 | | | |
| Waste treatment per kg Polyoxymethylene (POM), incineration with fly ash extraction (kg) - CH - C3 | kg | 0,01 | | | |
| Waste treatment per kg Polypropylene (PP), incineration with fly ash extraction - C3 (kg) | kg | 2,24 | | | |
| Waste treatment per kg Polyurethane (PU), incineration (kg) | kg | 0,03 | | | |
| Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg) | kg | 3,52 | | | |
| Waste treatment per kg Textile, incineration with fly ash extraction (kg) | kg | 1,05 | | | |
| Waste, materials to recycling (kg) | kg | 1,19 | | | |

| Disposal (C4) | Unit | Value | | | |
|---|---|---|---|---|---|
| Landfilling of ashes and residues from incineration of Scrap steel (kg) | kg | 2,32 | | | |
| Landfilling of ashes from incineration of Hazardous waste, from incineration (kg) | kg | 0,01 | | | |
| 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 Polyoxymethylene (POM), process per kg ashes and residues (kg) - CH - C4 | kg | 0,00 | | | |
| Landfilling of ashes from incineration of Polypropylene, PP, process per kg ashes and residues - C4 (kg) | kg | 0,07 | | | |
| Landfilling of ashes from incineration of Polyurethane (PU), process per kg ashes and residues - C4 (kg) | kg | 0,00 | | | |
| Landfilling of ashes from incineration of Textile, soiled, process per kg ashes and residues (kg) | kg | 0,05 | | | |

| Benefits and loads beyond the system boundaries (D) | Unit | Value | | | |
|---|---|---|---|---|---|
| Substitution of electricity, in Norway (MJ) | MJ | 4,69 | | | |
| Substitution of primary steel with net scrap (kg) | kg | 0,96 | | | |
| Substitution of thermal energy, district heating, in Norway (MJ) | MJ | 70,96 | | | |

## 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 | 1,89E+01 | 9,47E-01 | 5,69E+00 | 5,67E+00 | 2,54E-01 |
| | GWP-fossil | kg $CO_2$ -eq | 2,40E+01 | 9,46E-01 | 6,32E-02 | 5,62E+00 | 2,52E-01 |
| | GWP-biogenic | kg $CO_2$ -eq | -5,14E+00 | 3,88E-04 | 5,62E+00 | 3,61E-02 | 1,62E-03 |
| | GWP-luluc | kg $CO_2$ -eq | 4,19E-02 | 2,76E-04 | 1,85E-05 | 1,27E-02 | 5,74E-04 |
| | ODP | kg CFC11 -eq | 1,89E-06 | 2,19E-07 | 1,19E-08 | 4,39E-07 | 1,95E-08 |
| | AP | mol H+ -eq | 1,20E-01 | 3,98E-03 | 2,66E-04 | 3,22E-02 | 1,44E-03 |
| | EP-FreshWater | kg P -eq | 1,22E-03 | 7,21E-06 | 4,60E-07 | 5,47E-04 | 2,47E-05 |
| | EP-Marine | kg N -eq | 2,59E-02 | 1,20E-03 | 9,48E-05 | 4,31E-03 | 1,91E-04 |
| | EP-Terrestial | mol N -eq | 2,83E-01 | 1,32E-02 | 9,51E-04 | 5,22E-02 | 2,32E-03 |
| | POCP | kg NMVOC -eq | 9,80E-02 | 4,25E-03 | 2,75E-04 | 1,35E-02 | 5,94E-04 |
| | ADP-minerals&metals[1] | kg Sb-eq | 8,79E-04 | 1,62E-05 | 1,36E-06 | 4,34E-05 | 1,69E-06 |
| | ADP-fossil[1] | MJ | 4,28E+02 | 1,47E+01 | 7,89E-01 | 1,08E+02 | 4,87E+00 |
| | WDP[1] | $m^3$ | 1,34E+04 | 1,13E+01 | 1,09E+00 | 1,51E+03 | 6,70E+01 |

| **Indicator** | | **Unit** | B4 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| | GWP-total | kg $CO_2$ -eq | 0 | 0 | 1,48E-01 | 7,66E+00 | 3,48E-02 | -1,48E+00 |
| | GWP-fossil | kg $CO_2$ -eq | 0 | 0 | 1,47E-01 | 6,13E+00 | 3,47E-02 | -1,46E+00 |
| | GWP-biogenic | kg $CO_2$ -eq | 0 | 0 | 6,01E-05 | 1,53E+00 | 2,97E-05 | -1,43E-03 |
| | GWP-luluc | kg $CO_2$ -eq | 0 | 0 | 5,16E-05 | 5,56E-05 | 8,87E-06 | -1,46E-02 |
| | ODP | kg CFC11 -eq | 0 | 0 | 3,36E-08 | 2,62E-08 | 8,66E-09 | -3,00E-02 |
| | AP | mol H+ -eq | 0 | 0 | 6,03E-04 | 1,33E-03 | 2,06E-04 | -8,62E-03 |
| | EP-FreshWater | kg P -eq | 0 | 0 | 1,16E-06 | 5,08E-06 | 3,55E-07 | -1,01E-04 |
| | EP-Marine | kg N -eq | 0 | 0 | 1,79E-04 | 5,68E-04 | 7,19E-05 | -2,19E-03 |
| | EP-Terrestial | mol N -eq | 0 | 0 | 1,98E-03 | 6,09E-03 | 7,99E-04 | -2,31E-02 |
| | POCP | kg NMVOC -eq | 0 | 0 | 6,05E-04 | 1,52E-03 | 2,29E-04 | -8,58E-03 |
| | ADP-minerals&metals[1] | kg Sb-eq | 0 | 0 | 3,99E-06 | 9,62E-07 | 4,77E-07 | -2,23E-05 |
| | ADP-fossil[1] | MJ | 0 | 0 | 2,22E+00 | 1,37E+00 | 6,50E-01 | -1,47E+01 |
| | WDP[1] | $m^3$ | 0 | 0 | 2,12E+00 | 3,14E+00 | 2,14E+00 | -1,86E+01 |

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

"Reading example: 9,0 E-03 = 9,0*10-3 = 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 | 1,48E-06 | 8,33E-08 | 3,96E-09 | 1,14E-07 | 4,75E-09 |
| | IRP[2] | kgBq U235 -eq | 1,02E+00 | 6,43E-02 | 3,39E-03 | 8,90E-01 | 4,03E-02 |
| | ETP-fw[1] | CTUe | 1,02E+03 | 1,08E+01 | 1,04E+00 | 8,66E+01 | 3,84E+00 |
| | HTP-c[1] | CTUh | 7,28E-08 | 0,00E+00 | 3,10E-11 | 2,79E-09 | 9,70E-11 |
| | HTP-nc[1] | CTUh | 6,40E-07 | 1,04E-08 | 1,29E-09 | 8,81E-08 | 3,37E-09 |
| | SQP[1] | dimensionless | 2,06E+02 | 1,69E+01 | 5,72E-01 | 2,53E+01 | 1,13E+00 |

| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| | PM | Disease incidence | 0 | 0 | 1,06E-08 | 1,50E-08 | 3,58E-09 | -2,93E-07 |
| | IRP[2] | kgBq U235 -eq | 0 | 0 | 9,72E-03 | 4,46E-03 | 2,66E-03 | -3,38E-02 |
| | ETP-fw[1] | CTUe | 0 | 0 | 1,64E+00 | 6,40E+00 | 4,79E-01 | -9,07E+01 |
| | HTP-c[1] | CTUh | 0 | 0 | 0,00E+00 | 4,98E-10 | 1,80E-11 | -5,65E-09 |
| | HTP-nc[1] | CTUh | 0 | 0 | 1,77E-09 | 8,88E-09 | 5,78E-10 | 7,95E-08 |
| | SQP[1] | dimensionless | 0 | 0 | 1,53E+00 | 3,71E-01 | 1,44E+00 | -4,00E+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 | 1,02E+02 | 1,85E-01 | 1,33E-02 | 1,99E+01 | 9,05E-01 |
| | PERM | MJ | 2,39E+01 | 0,00E+00 | -2,39E+01 | 0,00E+00 | 0,00E+00 |
| | PERT | MJ | 1,26E+02 | 1,85E-01 | -2,39E+01 | 1,99E+01 | 9,05E-01 |
| | PENRE | MJ | 3,28E+02 | 1,47E+01 | 7,89E-01 | 1,08E+02 | 4,88E+00 |
| | PENRM | MJ | 1,05E+02 | 0,00E+00 | -5,07E+00 | 0,00E+00 | 0,00E+00 |
| | PENRT | MJ | 4,33E+02 | 1,47E+01 | -4,29E+00 | 1,08E+02 | 4,88E+00 |
| | SM | kg | 4,55E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| | RSF | MJ | 9,78E-01 | 6,48E-03 | 4,36E-04 | 1,38E+00 | 6,27E-02 |
| | NRSF | MJ | 2,74E-01 | 2,17E-02 | 1,76E-03 | 3,70E-01 | 1,51E-02 |
| | FW | $m^3$ | 2,67E-01 | 1,68E-03 | 3,75E-04 | 8,69E-01 | 3,99E-03 |

| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| | PERE | MJ | 0 | 0 | 3,14E-02 | 1,44E-01 | 1,59E-02 | -3,71E+01 |
| | PERM | MJ | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| | PERT | MJ | 0 | 0 | 3,14E-02 | 1,44E-01 | 1,59E-02 | -3,71E+01 |
| | PENRE | MJ | 0 | 0 | 2,22E+00 | 1,39E+00 | 6,50E-01 | -1,47E+01 |
| | PENRM | MJ | 0 | 0 | 0,00E+00 | -1,00E+02 | 0,00E+00 | 0,00E+00 |
| | PENRT | MJ | 0 | 0 | 2,22E+00 | -9,86E+01 | 6,50E-01 | -1,47E+01 |
| | SM | kg | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| | RSF | MJ | 0 | 0 | 1,12E-03 | 3,23E-03 | 3,91E-04 | 3,17E-02 |
| | NRSF | MJ | 0 | 0 | 4,01E-03 | 0,00E+00 | 2,20E-02 | -1,05E+00 |
| | FW | $m^3$ | 0 | 0 | 2,34E-04 | 2,23E-03 | 6,10E-04 | -4,60E-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 | 2,44E-01 | 8,05E-04 | 0,00E+00 | 1,87E-02 | 8,39E-04 |
| | NHWD | kg | 6,78E+00 | 1,28E+00 | 3,43E+00 | 4,24E-01 | 1,73E-02 |
| | RWD | kg | 1,00E-03 | 1,00E-04 | 0,00E+00 | 7,21E-04 | 3,26E-05 |

| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| | HWD | kg | 0 | 0 | 1,13E-04 | 0,00E+00 | 2,38E+00 | -5,75E-03 |
| | NHWD | kg | 0 | 0 | 1,06E-01 | 1,20E-01 | 6,13E-02 | -5,70E-01 |
| | RWD | kg | 0 | 0 | 1,52E-05 | 0,00E+00 | 3,84E-06 | -2,79E-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 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| | MFR | kg | 8,33E-01 | 0,00E+00 | 3,14E+00 | 0,00E+00 | 0,00E+00 |
| | MER | kg | 6,61E-06 | 0,00E+00 | 1,58E-03 | 0,00E+00 | 0,00E+00 |
| | EEE | MJ | 4,60E-01 | 0,00E+00 | 1,89E-01 | 0,00E+00 | 0,00E+00 |
| | EET | MJ | 6,97E+00 | 0,00E+00 | 2,87E+00 | 0,00E+00 | 0,00E+00 |

| 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 | 1,19E+00 | 0,00E+00 | 0,00E+00 |
| | MER | kg | 0 | 0 | 0,00E+00 | 6,97E+00 | 0,00E+00 | 0,00E+00 |
| | EEE | MJ | 0 | 0 | 0,00E+00 | 4,54E+00 | 0,00E+00 | 0,00E+00 |
| | EET | MJ | 0 | 0 | 0,00E+00 | 6,86E+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 | 0,00E+00 |
| Biogenic carbon content in accompanying packaging | kg C | 1,53E+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, high voltage, hydro (kWh) - PL | ecoinvent 3.6 | 4,02 | g CO2-eq/kWh |

### Dangerous substances

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

### Indoor environment

Möbelfakta

## Additional Environmental Information

### Key Environmental Indicators

| Key environmental indicators | Unit | A1-A3 | A4 | A1-C4 | A1-D |
|---|---|---|---|---|---|
| GWPtotal | kg $CO_2$ -eq | 18,86 | 0,95 | 39,26 | 37,78 |
| Total energy consumption | MJ | 431,36 | 14,93 | 587,36 | 534,55 |
| Amount of recycled materials | % | 43,70 | | | |

| 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 | 2,41E+01 | 9,47E-01 | 6,32E-02 | 5,99E+00 | 2,69E-01 |

| Indicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|
| GWPIOBC | kg $CO_2$ -eq | 0 | 0 | 1,48E-01 | 7,79E+00 | 3,82E-02 | -2,00E+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 (%) |
| Profim Ariz 550V - Chair, Plastic seat and backrest, w/o armrests - No packaging | 5,78 | 16,44 | 289,66 | 12,05 |
| Profim Ariz 555V - Chair, Plastic seat, Mesh backrest, w/o armrests - No packaging | 5,91 | 17,09 | 299,74 | 11,81 |
| Profim Ariz 560V - Chair, Upholstered seat (Xtreme/Camira), Plastic backrest, w/o armrests - No packaging | 6,25 | 18,25 | 308,31 | 16,45 |
| Profim Ariz 570V - Chair, Upholstered seat and backrest (Xtreme/Camira), w/o armrests - No packaging | 6,97 | 21,12 | 336,77 | 22,54 |
| Profim Ariz 575V - CHair, Upholstered seat (Xtreme/Camira), Mesh backrest, w/o armrests - No packaging | 6,39 | 18,91 | 318,79 | 16,13 |
| Profim Ariz 550CV - Barstool, Plastic seat and backrest - No packaging | 7,81 | 21,38 | 350,85 | 14,14 |
| Profim Ariz 555CV - Barstool, Plastic seat, Mesh backrest - No packaging | 7,94 | 22,02 | 360,93 | 13,93 |
| Profim Ariz 560CV - Barstool, Upholstery seat (Xtreme/Camira), Plastic backrest - No packaging | 8,28 | 23,18 | 369,50 | 17,35 |
| Profim Ariz 570CV - Barstool, Upholstered seat and backrest (Xtreme/Camira) - No packaging | 9,01 | 26,06 | 398,11 | 22,01 |
| Profim Ariz 575CV - Barstool, Upholstered seat (Xtreme/Camira), Mesh backrest - No packaging | 8,42 | 23,84 | 379,97 | 17,09 |
| Profim Ariz Trolley - No packaging | 13,16 | 34,11 | 474,76 | 15,43 |

| 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 (%)** |
| Profim Ariz chair - Armrests | 2,07 | 6,58 | 76,54 | 18,16 |
| Profim Ariz chair - Feet with connectors (linking device) | 0,06 | 0,23 | 4,15 | 0,00 |
| Profim Ariz chair - Newspaper basket - No packaging | 0,94 | 6,73 | 95,79 | 21,89 |
| Profim Ariz chair - Writing table - No packaging | 2,87 | 2,66 | 68,34 | 10,56 |
| Profim Ariz chair/barstool (V/CV) - Packaging no. 1 (No carton box, only foil) | 0,12 | 0,31 | 6,12 | 6,75 |
| Profim Ariz chair (V) - Packaging no. 2 (1-2 chair in carton box) | 3,43 | -2,26 | 94,59 | 86,86 |
| Profim Ariz barstool (CV) - Packaging no. 3 (1-2 barstool in carton box) | 3,73 | -2,66 | 101,53 | 99,66 |
| Profim Ariz chair (V) - Packaging no. 4 (3-5 chair in carton box) | 4,97 | -3,49 | 127,91 | 77,43 |
| Profim Ariz Trolley - Packaging no. 5 (Carton box) | 1,56 | -1,01 | 43,74 | 97,44 |
| Profim Ariz chair Writing table - Packaging no. 6 (Carton box) | 1,58 | -0,86 | 44,78 | 94,80 |
| Profim Ariz chair Newspaper basket - Packaging no. 7 (Carton box) | 0,74 | -0,30 | 21,69 | 90,98 |

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