

Owner: DEKO p | s
No.: MD-24068-EN
Issued: 16-04-2024
Valid to: 16-04-2029

3rd PARTY VERIFIED

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | ISO 14025 & EN 15804



Owner of declaration
 DEKO p|s
 Mårkærvej 11, DK-2630 Taastrup
 66674517



Issued:
 16-04-2024

Valid to:
 16-04-2024

Programme
 EPD Danmark
www.epddanmark.dk



- Industry EPD
- Product EPD

Declared product(s)
 DEKO FD 12.76 mm

Number of declared datasets/product variations: 1

Production site
 Mårkærvej 11, DK-2630 Taastrup

The products are not manufactured using green certificates (GO) for the energy consumption in A3.

Product(s) use
 The function of the product is to provide access to a room and ensure soundproofing.

Declared unit
 1 m² of glazed door

Functional unit
 1 m² of soundproofing glazed door, including associated fixing components with a reference service life of 30 years

Year of production site data (A3)
 2022

EPD version
 [Vers. 1], [April 2024]

Basis of calculation

This EPD is developed in accordance with the European standard EN 15804+A2 and the cPCR EN 17213:2020.

Comparability

EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

Validity


This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

Use

The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

EPD type

- Cradle-to-gate with modules C1-C4 and D
- Cradle-to-gate with options, modules C1-C4 and D
- Cradle-to-grave and module D
- Cradle-to-gate
- Cradle-to-gate with options

| |
|---|
| CEN standard EN 15804 serves as the core PCR |
| Independent verification of the declaration and data, according to EN ISO 14025 <input type="checkbox"/> internal <input checked="" type="checkbox"/> external |
| Third party verifier:  Linda Høiby |


 Martha Katrine Sørensen
 EPD Danmark

Life cycle stages and modules (MND = module not declared)

| Product | | | Construction process | | Use | | | | | | | End of life | | | | Beyond the system boundary |
|---------------------|-----------|---------------|----------------------|----------------------|-----|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|--|
| Raw material supply | Transport | Manufacturing | Transport | Installation process | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Re-use, recovery and recycling potential |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

Product information

Product description

The main product components are shown in the table below.

| Material | Weight-% of declared products |
|---|-------------------------------|
| Glass incl. PVB lamination | 85 |
| Aluminium profiles incl. powder coating | 12 |
| Steel | 2 |
| Aluminium parts | 2 |
| Plastic | <1 |

Product packaging:

The composition of the sales- and transport packaging of the product is shown in the table below.

| Material | Weight-% of packaging |
|--|-----------------------|
| Plastic (LDPE foil & tape, PP straps & bag, polystyrene) | 15 |
| Wood (EUR pallet, single-use pallet, masonite, cork) | 46 |
| Cardboard | 35 |
| Steel straps & fittings | 4 |

Representativity

This declaration, including data collection and the modelled foreground system including results, represents the production of 1 m² glazed door system at the production site located in Taastrup, DK. Product specific data are based on average values collected in the period 2022. Background data are based on 'LCA for Experts' and EcoInvent database and are less than 10 years old. Generally, the used background datasets are of high quality, and the majority of the datasets are only a couple of years old.

Hazardous substances

DEKO FD glazed door system does not contain substances listed on the "Candidate List of Substances of Very High Concern for authorisation"

(<http://echa.europa.eu/candidate-list-table>)

Essential characteristics

The FD door system compose of glass panes, aluminium profiles, and small plastic and metal components. The systems offer sound insulation up to:

| FD | Sound insulation (dB) |
|----------|-----------------------|
| 12.76 mm | 37 |

Test reports, as well as other technical information can be obtained by contacting DEKO or go to their website:

<https://www.deko.com/>

Reference Service Life (RSL)

The reference service life is 30 years which is determined according to the guarantee DEKO p|s provides on their systems. According to information from DEKO, there is no need for the replacement or repair of product components during the RSL. Maintenance is included in terms of simple cleaning with water and mild detergent three times a year and lubrication of hinges one time per year.

Geographical scope

The geographical scope of this study is Europe.

Picture of product(s)



Figure 1: Example of a FD glazed door.

LCA background

Declared unit

The LCI and LCIA results in this EPD relates to 1 m² glazed door system.

| FD system | 12.76 mm | Unit |
|----------------------------|-------------------------------------|--------------------|
| Declared unit | 1 m ² glazed door system | - |
| Density | 36.4 | kg/m ² |
| Conversion factor to 1 kg. | 0.027 | m ² /kg |

Functional unit

1 m² of soundproofing glazed door, including associated fixing components with a reference service life of 30 years.

Allocation

Allocation is made in accordance with EN 15804 + A2. Energy and waste in module A3 are allocated to the FD system based on the total amount of bought glass panes (m²).

Impacts from pre-consumer scrap is allocated to the main product system in which the material is used (FD system). Impacts from post-consumer

scrap is allocated to the former product system. Additionally, transport and recycling process are included to account for the processing of scrap needed to utilise scrap in a new product.

The remaining materials are modelled as primary materials.

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804:2012+A2:2019. In addition to this it also follows the cPCR for windows and doors EN 17213:2020.

Guarantee of Origin – certificates

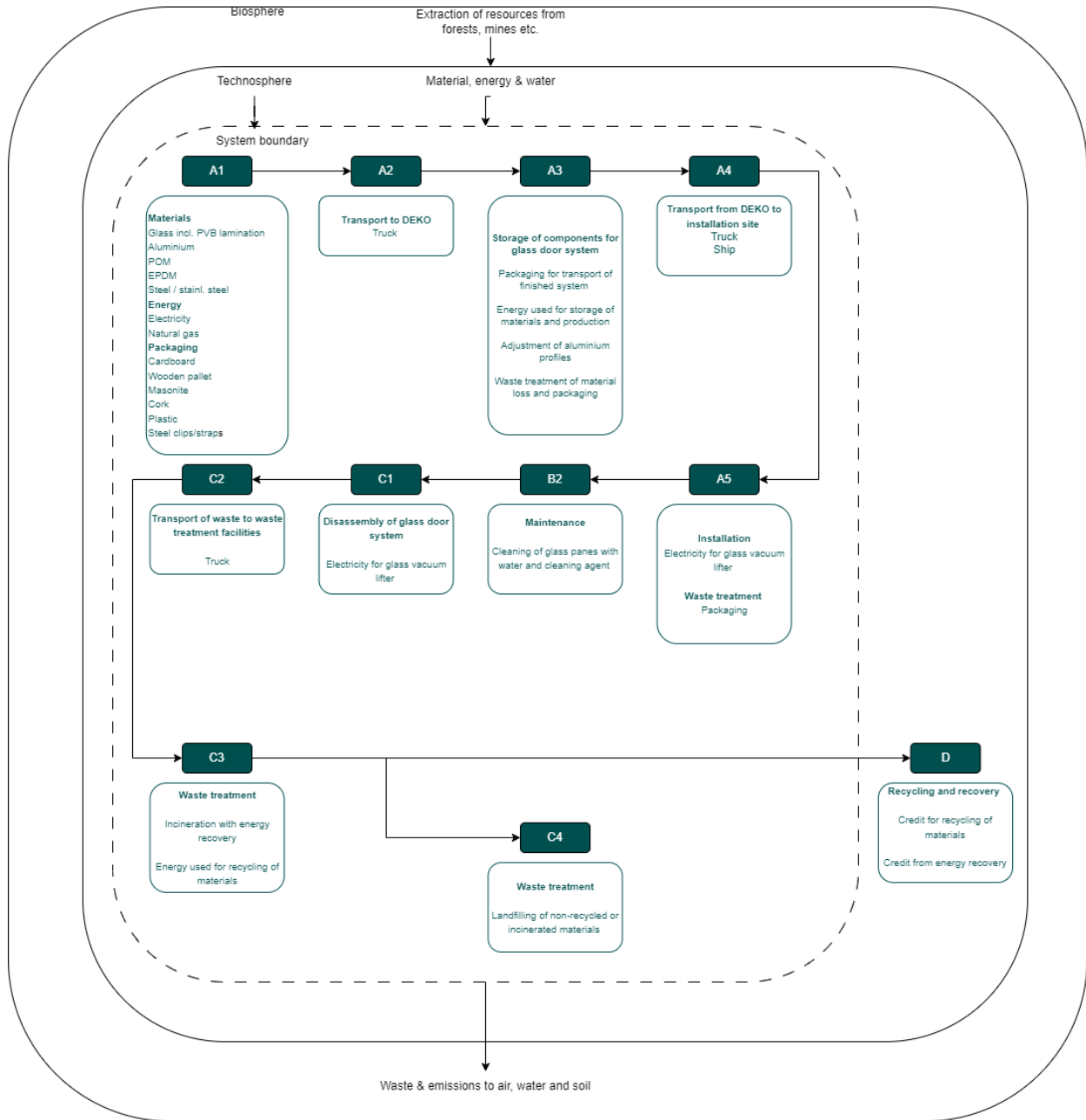
Foreground system:

The products are produced without using any green certificates (GO). Therefore, the energy consumption in module A3 is modelled using Residual mix (DK). Remaining energy processes are modelled using grid mix.

Background system:

Upstream and downstream processes are modelled using datasets representing average supply mixes for the specific country or region.

Flow diagram



System boundary

This EPD is based on a cradle-to-grave and module D LCA, in which 100 weight-% has been accounted for.

The general rules apply for the exclusion of inputs and outputs in the LCA, which is in compliance with the rules in EN 15804:2012+A2:2019, 6.3.6, in case of insufficient input data gaps for unit process, the cut-off criteria shall be 1% of renewable and non-renewable primary energy usage and 1% of the total mass input of that unit process. The total of neglected input flows per module, e.g. per module A1-A3, A4-A5, B1-B5, B6-B7, C1-C4 and module D shall be a maximum of 5% of energy usage and mass.

Excluded processes in the system include energy use of electric screwdriver during installation and disassembly in module A5 and C1, respectively. The energy use for adjustment of aluminium profiles in module A3 is excluded as this is deemed negligible. As the system is only being stored at DEKO, thus no energy from the production in module A3 has been allocated to the system. No water is needed to produce the system, as the water use is exclusively for sanitary purposes. It is estimated that the amount of water allocated to 1 m² FD are insignificant. Therefore, the water usage and sewage originating in module A3 are excluded from the study.

Product stage (A1-A3) includes:

A1 – Extraction and processing of raw materials

A2 – Transport to the production site

A3 – Manufacturing processes

The product stage comprises the acquisition of all raw materials, products and energy, transport to the production site, losses from production, packaging and waste processing up to the “end-of-waste” state or final disposal. The LCA results are declared in aggregated form for the product stage, which means, that the sub-modules A1, A2 and A3 are declared as one module A1-A3.

The FD system compose of glass, aluminium, plastic, and steel.

The glass panes are customised in specific measurement before arriving at DEKO, hence no adjustment is needed. The glass panes compose of glass and PVB lamination.

The aluminium profiles are extruded into profiles prior to the aluminium profiles arrive at DEKO. The scrap content in the aluminium is 6% post-consumer and 85% pre-consumer. The pre-consumer scrap is attributed the same environmental impacts as primary aluminium. The profiles are delivered in standard length and are adjusted at DEKO, thus the transport and treatment of aluminium cut-offs are handled in module A3 but are not credited in module D.

The materials are stored and packed in Taastrup DK.

Construction process stage (A4-A5) includes:

The installation of the FD system is done using electric screw drivers and a glass vacuum lifter. The energy use of the glass vacuum lifter is included. The steel straps are assumed recycled in A5 and credited in module D.

The plastic packaging is assumed incinerated with energy recovery and credited in module D. The wooden pallet is assumed reused 25 times. Therefore, 1/25 of the pallet is assumed incinerated and credited in module D. Cardboard and other wooden packaging components are assumed incinerated together with the pallet.

Use stage (B1-B7) includes:

The environmental impacts occurring in the use stage can be attributed to the cleaning of the glass panes and lubrication of hinges. No replacements are expected during the RSL. It is assumed that the glass panes (incl. profiles) are cleaned three times per year with the use of 0.2 l water and 0.001kg cleaning agent per m² throughout the 30 years (RSL). Subsequently, the used cleaning water and cleaning agent is treated as wastewater. The door is assumed lubricated one time per year with the use of 3 mL per m² throughout the 30 years (RSL).

End of Life (C1-C4) includes:

It is assumed that 100% of the door system is collected at the demolition site and sent for waste treatment. The waste treatment for the specific material fractions follows the guidelines in cPCR EN17213:2019.

The waste is transported to waste treatment facilities. For recycling the distance is set to 230-550 km depending on the material whereas the waste going to incineration is transported 50 km and waste to landfill is transported 70 km.

The following waste treatment rates are applied: 5% loss is assumed for sorting of metals and plastic and 70% is assumed for sorting glass.

| Materials | Recycling (%) | Incineration (%) | Loss (%) |
|--------------------------|---------------|------------------|----------|
| Glass incl. PVB laminate | 30 | 0 | 70 |
| Aluminium | 95 | 0 | 5 |
| Steel | 95 | 0 | 5 |
| Plastic | 0 | 95 | 5 |

Re-use, recovery and recycling potential (D) includes:

In module D the potential benefits from recovery and recycling of materials from the product and packaging is modelled.

For aluminium, the secondary material is subtracted to avoid double counting. This entails that only the primary materials are credited in module D.

LCA results

| ENVIRONMENTAL IMPACTS PER 1 m ² FD 12.76 mm | | | | | | | | | | | | |
|--|---|----------|----------|----------|----------|-----------|----------|----------|----------|----------|-----------|-----------|
| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | B3-B7 | C1 | C2 | C3 | C4 | D |
| GWP-total | [kg CO ₂ eq.] | 8.28E+01 | 1.09E+00 | 9.28E-01 | 0.00E+00 | 2.74E-01 | 0.00E+00 | 2.40E-01 | 5.95E-01 | 1.00E+00 | 3.53E-01 | -4.40E+01 |
| GWP-fossil | [kg CO ₂ eq.] | 8.28E+01 | 1.08E+00 | 5.57E-01 | 0.00E+00 | 3.20E-01 | 0.00E+00 | 2.38E-01 | 5.88E-01 | 1.00E+00 | 3.63E-01 | -4.39E+01 |
| GWP-biogenic | [kg CO ₂ eq.] | 7.07E-02 | 2.43E-03 | 3.70E-01 | 0.00E+00 | -6.63E-02 | 0.00E+00 | 2.08E-03 | 1.34E-03 | 1.53E-03 | -1.13E-02 | -9.30E-02 |
| GWP-luluc | [kg CO ₂ eq.] | 3.99E-02 | 9.86E-03 | 1.09E-03 | 0.00E+00 | 2.12E-02 | 0.00E+00 | 2.60E-05 | 5.51E-03 | 3.15E-05 | 1.03E-03 | -1.09E-02 |
| ODP | [kg CFC 11 eq.] | 3.77E-08 | 1.40E-13 | 4.49E-12 | 0.00E+00 | 2.42E-08 | 0.00E+00 | 4.40E-12 | 7.74E-14 | 3.34E-12 | 8.90E-13 | -4.61E-11 |
| AP | [mol H ⁺ eq.] | 5.66E-01 | 6.22E-03 | 1.21E-03 | 0.00E+00 | 2.14E-03 | 0.00E+00 | 5.08E-04 | 3.65E-03 | 4.68E-04 | 2.40E-03 | -2.23E-01 |
| EP-freshwater | [kg P eq.] | 8.72E-04 | 3.90E-06 | 1.33E-06 | 0.00E+00 | 1.14E-04 | 0.00E+00 | 8.93E-07 | 2.17E-06 | 6.89E-07 | 8.30E-06 | -2.21E-05 |
| EP-marine | [kg N eq.] | 1.17E-01 | 2.97E-03 | 4.43E-04 | 0.00E+00 | 7.03E-04 | 0.00E+00 | 1.22E-04 | 1.77E-03 | 1.15E-04 | 6.16E-04 | -3.90E-02 |
| EP-terrestrial | [mol N eq.] | 1.32E+00 | 3.30E-02 | 4.95E-03 | 0.00E+00 | 4.51E-03 | 0.00E+00 | 1.27E-03 | 1.97E-02 | 1.38E-03 | 6.77E-03 | -4.32E-01 |
| POCP | [kg NMVOC eq.] | 2.70E-01 | 5.99E-03 | 9.77E-04 | 0.00E+00 | 1.30E-03 | 0.00E+00 | 3.24E-04 | 3.46E-03 | 3.13E-04 | 1.86E-03 | -1.04E-01 |
| ADPm ¹ | [kg Sb eq.] | 1.13E-04 | 7.08E-08 | 4.51E-08 | 0.00E+00 | 3.21E-06 | 0.00E+00 | 3.68E-08 | 3.94E-08 | 2.80E-08 | 1.60E-08 | -1.95E-06 |
| ADPf ¹ | [MJ] | 1.27E+03 | 1.48E+01 | 6.75E+00 | 0.00E+00 | 6.75E+00 | 0.00E+00 | 5.00E+00 | 8.10E+00 | 3.97E+00 | 4.99E+00 | -5.86E+02 |
| WDP ¹ | [m ³ world eq. deprived] | 1.37E+01 | 1.29E-02 | 1.14E-01 | 0.00E+00 | 4.16E-01 | 0.00E+00 | 5.24E-02 | 7.18E-03 | 1.15E-01 | 3.39E-02 | -5.92E+00 |
| Caption | GWP-total = Globale 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 = Ozone Depletion; AP = Acidification; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water depletion potential | | | | | | | | | | | |
| | The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: 1,95*10 ² or 195, while 1,12E-11 is the same as 1,12*10 ⁻¹¹ or 0,0000000000112. | | | | | | | | | | | |
| Disclaimer | ¹ The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. | | | | | | | | | | | |

| ADDITIONAL ENVIRONMENTAL IMPACTS PER 1 m ² FD 12.76 mm | | | | | | | | | | | | |
|---|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | B3-B7 | C1 | C2 | C3 | C4 | D |
| PM | [Disease incidence] | 2.63E-06 | 4.07E-08 | 8.01E-09 | 0.00E+00 | 2.09E-08 | 0.00E+00 | 4.27E-09 | 1.44E-08 | 4.31E-09 | 2.91E-08 | -2.24E-06 |
| IRP ² | [kBq U235 eq.] | 2.72E+00 | 4.11E-03 | 1.34E-01 | 0.00E+00 | 2.23E-02 | 0.00E+00 | 1.32E-01 | 2.27E-03 | 9.75E-02 | 6.89E-03 | -6.23E+00 |
| ETP-fw ¹ | [CTUe] | 7.55E+02 | 1.06E+01 | 2.61E+00 | 0.00E+00 | 6.42E+00 | 0.00E+00 | 1.39E+00 | 5.80E+00 | 1.23E+00 | 2.84E+00 | -2.31E+02 |
| HTP-c ¹ | [CTUh] | 2.10E-06 | 2.15E-10 | 1.03E-10 | 0.00E+00 | 4.25E-10 | 0.00E+00 | 7.36E-11 | 1.18E-10 | 6.49E-11 | 3.86E-10 | -2.18E-08 |
| HTP-nc ¹ | [CTUh] | 3.25E-07 | 9.50E-09 | 2.66E-09 | 0.00E+00 | 1.59E-08 | 0.00E+00 | 1.17E-09 | 5.24E-09 | 1.73E-09 | 4.00E-08 | -4.46E-07 |
| SQP ¹ | - | 1.76E+02 | 6.06E+00 | 2.67E+00 | 0.00E+00 | 3.98E+00 | 0.00E+00 | 1.97E+00 | 3.38E+00 | 1.51E+00 | 1.09E+00 | -3.05E+01 |
| Caption | 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) | | | | | | | | | | | |
| | The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: 1,95*10 ² or 195, while 1,12E-11 is the same as 1,12*10 ⁻¹¹ or 0,0000000000112. | | | | | | | | | | | |
| Disclaimers | ¹ The results of this environmental 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 PER 1 m ² FD 12.76 mm | | | | | | | | | | | | |
|---|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | B3-B7 | C1 | C2 | C3 | C4 | D |
| PERE | [MJ] | 3.20E+02 | 1.06E+00 | 3.15E+00 | 0.00E+00 | 1.80E+00 | 0.00E+00 | 3.00E+00 | 5.89E-01 | 2.25E+00 | 7.55E-01 | -2.25E+02 |
| PERM | [MJ] | 1.70E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PERT | [MJ] | 3.37E+02 | 1.06E+00 | 3.15E+00 | 0.00E+00 | 1.80E+00 | 0.00E+00 | 3.00E+00 | 5.89E-01 | 2.25E+00 | 7.55E-01 | -2.25E+02 |
| PENRE | [MJ] | 1.23E+03 | 1.48E+01 | 6.75E+00 | 0.00E+00 | 6.76E+00 | 0.00E+00 | 5.00E+00 | 8.13E+00 | 3.97E+00 | 4.99E+00 | -5.87E+02 |
| PENRM | [MJ] | 3.53E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PENRT | [MJ] | 1.27E+03 | 1.48E+01 | 6.75E+00 | 0.00E+00 | 6.76E+00 | 0.00E+00 | 5.00E+00 | 8.13E+00 | 3.97E+00 | 4.99E+00 | -5.87E+02 |
| SM | [kg] | 5.15E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| RSF | [MJ] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| NRSF | [MJ] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW | [m ³] | 8.29E-01 | 1.16E-03 | 3.95E-03 | 0.00E+00 | 9.70E-03 | 0.00E+00 | 2.41E-03 | 6.46E-04 | 3.58E-03 | 1.07E-03 | -5.51E-01 |
| Caption | 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 material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water | | | | | | | | | | | |
| | The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: 1,95*10 ² or 195, while 1,12E-11 is the same as 1,12*10 ⁻¹¹ or 0,0000000000112. | | | | | | | | | | | |

| WASTE CATEGORIES AND OUTPUT FLOWS PER 1 m ² FD 12.76 mm | | | | | | | | | | | | |
|--|---|----------|----------|-----------|----------|----------|----------|-----------|----------|-----------|----------|-----------|
| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | B3-B7 | C1 | C2 | C3 | C4 | D |
| HWD | [kg] | 5.62E-06 | 4.59E-11 | -3.84E-10 | 0.00E+00 | 9.16E-12 | 0.00E+00 | -3.91E-10 | 2.52E-11 | -2.81E-10 | 1.57E-10 | -3.52E-08 |
| NHWD | [kg] | 1.60E+01 | 2.24E-03 | 3.01E-02 | 0.00E+00 | 1.60E-02 | 0.00E+00 | 3.67E-03 | 1.24E-03 | 7.23E-02 | 2.19E+01 | -1.17E+01 |
| RWD | [kg] | 1.08E-01 | 2.76E-05 | 8.06E-04 | 0.00E+00 | 1.64E-05 | 0.00E+00 | 7.94E-04 | 1.52E-05 | 5.89E-04 | 5.71E-05 | -3.04E-02 |
| CRU | [kg] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| MFR | [kg] | 5.10E+00 | 0.00E+00 | 1.27E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.42E+01 | 0.00E+00 | 0.00E+00 |
| MER | [kg] | 3.56E-02 | 0.00E+00 | 3.10E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.55E-02 | 0.00E+00 | 0.00E+00 |
| EEE | [MJ] | 1.14E+00 | 0.00E+00 | 8.83E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.45E+00 | 0.00E+00 | 0.00E+00 |
| EET | [MJ] | 2.05E+00 | 0.00E+00 | 1.59E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.59E+00 | 0.00E+00 | 0.00E+00 |
| Caption | HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy | | | | | | | | | | | |
| | The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: 1,95*10 ² or 195, while 1,12E-11 is the same as 1,12*10 ⁻¹¹ or 0,0000000000112. | | | | | | | | | | | |

| BIOGENIC CARBON CONTENT PER 1 m ² FD 12.76 mm | | |
|--|---|---------------------|
| Parameter | Unit | At the factory gate |
| Biogenic carbon content in product | [kg C] | 0 |
| Biogenic carbon content in accompanying packaging | [kg C] | 0.43 |
| Note | 1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂ | |

Additional information

LCA interpretation

The results of this EPD are calculated based on 1 m² FD system with the thickness; 12.76 mm. The calculated results reflect that the production of aluminium profiles and glass panes entails the greatest environmental impacts for the system. This can be expected as the aluminium profiles and glass panes account for 14% and 83% of the weight, respectively. In addition to this, the production of these components are very energy and material intensive.

Technical information on scenarios

Transport to the building site (A4)

| Scenario information | Truck | Ship | Unit |
|---|---|---|-------------------|
| Fuel type | Diesel | Heavy fuel oil | - |
| Vehicle type | Truck, Euro 5, 26 - 28t gross weight / 18.4t payload capacity | Container ship, 5.000 to 200.000 dwt payload capacity, deep sea | - |
| Transport distance | 217 | 33 | km |
| Capacity utilisation (including empty runs) | <42.5 | <42.5 | % |
| Gross density of products transported | 30.8 - 60 | | kg/m ² |

Installation of the product in the building (A5)

| Scenario information | Value | Unit |
|-----------------------------|-------|------|
| Waste materials (packaging) | 0.32 | kg |
| Output materials | 36.4 | kg |

Reference service life

| RSL information | | Unit |
|---------------------------|---|-------|
| Reference service Life | 30 | Years |
| Maintenance (cleaning) | Cleaning 3 times a year during the RSL | - |
| Maintenance (lubrication) | Lubricated 1 time a year during the RSL | - |

Use (B1-B7) – B2 Maintenance

| Scenario information | Value | Unit |
|--|---|------------------|
| Maintenance process (cleaning) | The door system is assumed cleaned 3 times a year with mild cleaning agent. | |
| Maintenance cycle | 3 | /year |
| Waste materials resulting from maintenance (water and mild cleaning agent) | 0.201 | kg |
| Net freshwater consumption during maintenance | 0.2 | m ³ |
| Maintenance process (lubrication) | The door system is assumed lubricated 1 time a year with lubricating oil | |
| Maintenance cycle | 1 | /year |
| Lubricant (per maintenance cycle) | 0.94 | g/m ² |

End of life (C1-C4)

| Scenario information | FD 12.76 mm | Unit |
|--------------------------------------|--|------|
| Collected separately | 36.42 | kg |
| Collected with mixed waste | 0 | kg |
| For reuse | 0 | kg |
| For recycling | 13.96 | kg |
| For energy recovery | 0.33 | kg |
| For final disposal | 21.84 | kg |
| Assumptions for scenario development | Aluminium, steel and glass are assumed recycled with an efficiency of 95%, 95% and 30%, respectively. 95% of the plastic is assumed incinerated. | |

Re-use, recovery and recycling potential (D)

| Module | Scenario information | FD 12.76 mm | Unit |
|-----------------------|---|-------------|------|
| A5 (packaging) | Materials sent for recycling | 0.01 | kg |
| | Energy recovery from waste incineration (electricity) | 0.9 | MJ |
| | Energy recovery from waste incineration (thermal) | 1.6 | MJ |
| C3 (declared product) | Materials sent for recycling | 13.96 | kg |
| | Energy recovery from waste incineration (electricity) | 0.32 | MJ |
| | Energy recovery from waste incineration (thermal) | 0.57 | MJ |

Indoor air

This EPD give information on release of dangerous substances to indoor air as DEKO has the FD door system certified according to EuroFins Indoor Air Comfort Gold certification. Read more on release of dangerous substances to indoor air in EN15804+A2 chapter 7.4.1.

Soil and water

The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A1 chapter 7.4.2.

References

| | |
|---------------------------------------|--|
| Publisher |  www.epddanmark.dk <small>Template version 2022.2</small> |
| Programme operator | Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup www.teknologisk.dk |
| LCA-practitioner | <i>Kasper Brodersen Møller Artelia A/S Mariane Thomsens Gade 1c 8000 Aarhus C Denmark</i> |
| LCA software / background data | <i>Sphera LCA for Experts vers. 10.7, professional database, version 2023.1 and EcoInvent vers. 3.9.1</i> |
| 3rd party verifier | <i>Linda Høibye Life Cycle Assessment Consulting</i> |

General programme instructions

General Programme Instructions, version 2.0, spring 2020
www.epddanmark.dk

EN 15804

DS/EN 15804 + A2:2019 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

EN 15942

DS/EN 15942:2011 – "Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

EN 17213

cPCR: DS/EN 17213:2020 – "Windows and doors – Environmental product declarations – Product category rules for windows and pedestrian door sets"

ISO 14025

DS/EN ISO 14025:2010 – "Environmental labels and declarations – Type III environmental declarations – Principles and procedures"

ISO 14040

DS/EN ISO 14040:2008 – " Environmental management – Life cycle assessment – Principles and framework"

ISO 14044

DS/EN ISO 14044:2008 – " Environmental management – Life cycle assessment – Requirements and guidelines"