Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Interior doors made of wood and wood-based materials

from

Arbonia AG

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products, based on the average results of the product group
EPD registration number:	EPD-IES-0033574:001
Version date:	2026-10-05
Validity date:	2031-10-05

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com



GENERAL INFORMATION

Programme Information	
Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	support@environdec.com

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR 2019:14 Construction products (EN 15804+A2) (version 2.0.1). UN CPC code: 31600
PCR review was conducted by: The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com. The review panel may be contacted via support@environdec.com. Review Chair: Rob Rouwette (chair), Noa Meron (co-chair) The review panel may be contacted via the Secretariat www.environdec.com/support.
c-PCR: c-PCR Windows and doors (EN 17213) (c-PCR to PCR 2019:14) (Version 2.0.0).

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ **Individual EPD verification without a pre-verified LCA/EPD tool** Third-party verifier: Dr. Freddy Navarro, LCACHECK S.A.S de C.V Approved by: International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.
For further information about comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: Arbonia AG
Address: Amriswilerstrasse 50, 9320 Arbon Switzerland
Contact: info@arbonia.com
More information about the products and Arbonia is available at https://www.arbonia.com/de/produkte/innentueren/.

Address and contact information of the LCA practitioner commissioned by the EPD owner:
Intechnica Consult GmbH
Ostendstraße 181, 90482 Nuremberg, Germany
consulting@intechnica.de

Description of the organisation: Arbonia AG is a Swiss building-components company based in Arbon. The company has focused on the business of doors, showers and room partitioning systems. Arbonia comprises 15 companies that manufacture and process doors, showers, and room partition systems. Nine companies that manufacture doors under Arbonia participated in this EPD. These companies are listed under ”Name and location of production sites”.

PRODUCT INFORMATION

Product name: Interior doors made of wood and wood-based materials

UN CPC code: 31600 (Builders' joinery and carpentry of wood)

Product description: The EPD describes the product “door set”. This consists of a single-leaf door panel and door frame with associated accessories such as door fittings, door locks, etc. The doors include standard interior doors made primarily of wood, as well as functional doors (e.g., fire-rated doors, soundproof doors, etc.). The reference dimensions of the door are 1.23 m x 2.18m (reference door in accordance with DIN EN 17213).
The following table shows the percentage breakdown of the various door types manufactured by the Arbonia Group.

Door type	Total production
Standard doors	90.4 %
Sound-insulating doors	4.6 %
Fire-resistant doors	1.9 %
Burglar-resistant door	1.9 %
Moisture-/wet-room doors	0.5 %
Smoke control doors	0.5 %
Other door types	0.2 %
Radiation-protection doors	<0.1 %

Product pictures:

Example of a standard door:



Example of a functional door:



Example of a radiation protection door:



Name and location of production sites:

- Dimoldura Ibéria S.L.: Lalín (ES), Quintanar (ES), Etxarren (ES), Irurtzun (ES), Carregal do Sal (PT)
- GARANT Türen und Zargen GmbH: Amt Wachsenburg (DE)
- Invado Sp.z.o.o.: Ciasna (PL)
- Joro Türen GmbH: Renchen (DE)
- Lignis s.r.o.: Koryčany (CZ)
- PRÜM-Türenwerk GmbH: Weinsheim (DE)
- Rozière SAS: Bertholène (FR), Bozouls (FR)
- RWD Schlatter AG: Roggwil (CH)
- TPO Holz-Systeme GmbH: Leutershausen (DE).

CONTENT DECLARATION

The main LCA results were calculated using an inventory representing the average production of all products covered by the EPD (see table under 'product description'). All quantities in the content declaration are average quantities based on the percentage distribution of door types in the table above. The declared results represent the average product group and the reported product variations are calculated relative to these average results. In some cases, best-case and worst-case scenarios were calculated. For the best-case scenario, a honeycomb door is used, and for the worst-case scenario, a radiation-shielding door containing 35% lead.

The mass (weight) of one unit of an average product, as purchased or per declared unit:

Description	Amount	Unit
Declared Unit (door set)	1	m²
Mass of declared unit (1m² door set)	20.0	kg
Mass of one door set	53.7	kg
Conversion factor to mass	20.0	kg/m²

Content of the average door, consisting of the door types listed in the table on page 3, in the form of a list of materials and substances, and their mass:

Product content	Average mass, kg / m² door set	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/m² door set
Solid wood	1.62	0	8.0	0.81

Product content	Average mass, kg / m² door set	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/m² door set
Particleboard	9.80	0	49.0	4.90
Fiberboard	6.67	0	33.3	3.34
Other	0.45	0	0	0
Functional insert	0.004	0	0	0
Glass	0.41	0	0	0
Fitting	0.18	0	0	0
Edge material	0.06	0	0	0
Adhesive	0.23	0	0	0
Coating	0.51	0	0	0
Painting	0.09	0	0	0
TOTAL	20.0	0	90.3	9.05

The mass and the content of consumer packaging per m² average door set:

Packaging materials	Mass, kg / m² door set	Mass-% (versus the product)	Biogenic material, kg C/m² door set
Cardboard packaging	0.55	2.8	0.23
PE shrink wrap	0.03	0.2	0
Polystyrene	0.03	0.1	0
Pallet	0.28	1.4	0.14
Particleboard	0.42	2.1	0.21
Strapping	0.005	0.02	0
Upholstery material	0.004	0.02	0
TOTAL	1.32	6.6	0.66

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO_2.

Information on the environmental and hazardous/toxic properties of substances contained in the worst-case scenario radiation-shielding door containing 35% lead:

Hazardous substances from the candidate list of SVHC	EC No.	CAS No.	Mass-% per m² radiation-shielding door set
Lead	231-100-4	7439-92-1	35

Content of best-case (honeycomb door) and worst-case (radiation-shielding door containing 35% lead) scenarios in the form of a list of materials and substances, and their mass (additional Information):

Product content	Best-case scenario honeycomb door (kg/m² door set)	Worst-case scenario radiation-shielding door (kg/m² door set)
Solid wood	0.00	0.00
Particleboard	7.80	20.80
Fiberboard	4.67	18.82
Other (Steel)	0.00	11.50
Functional insert (Lead)	0.00	10.27
Glass	0.00	0.00
Fitting	0.18	0.18
Edge material	0.06	0.06
Adhesive	0.23	0.23
Coating	0.71	0.51
Painting	0.09	0.09
TOTAL	13.7	62.42

LCA INFORMATION

Declared unit: 1m² Door set (consisting of a door panel and a door frame)

Conversion factor to mass if mass is not used as functional/declared unit (not applicable for services): 20.0 kg/m²

Time representativeness: 2024

Geographical scope: The manufacturing facilities are in Europe (see list under “Product Information”). The products are sold primarily on the European market.

Database(s) and LCA software used: EcoInvent 3.12 and SimaPro 10.4

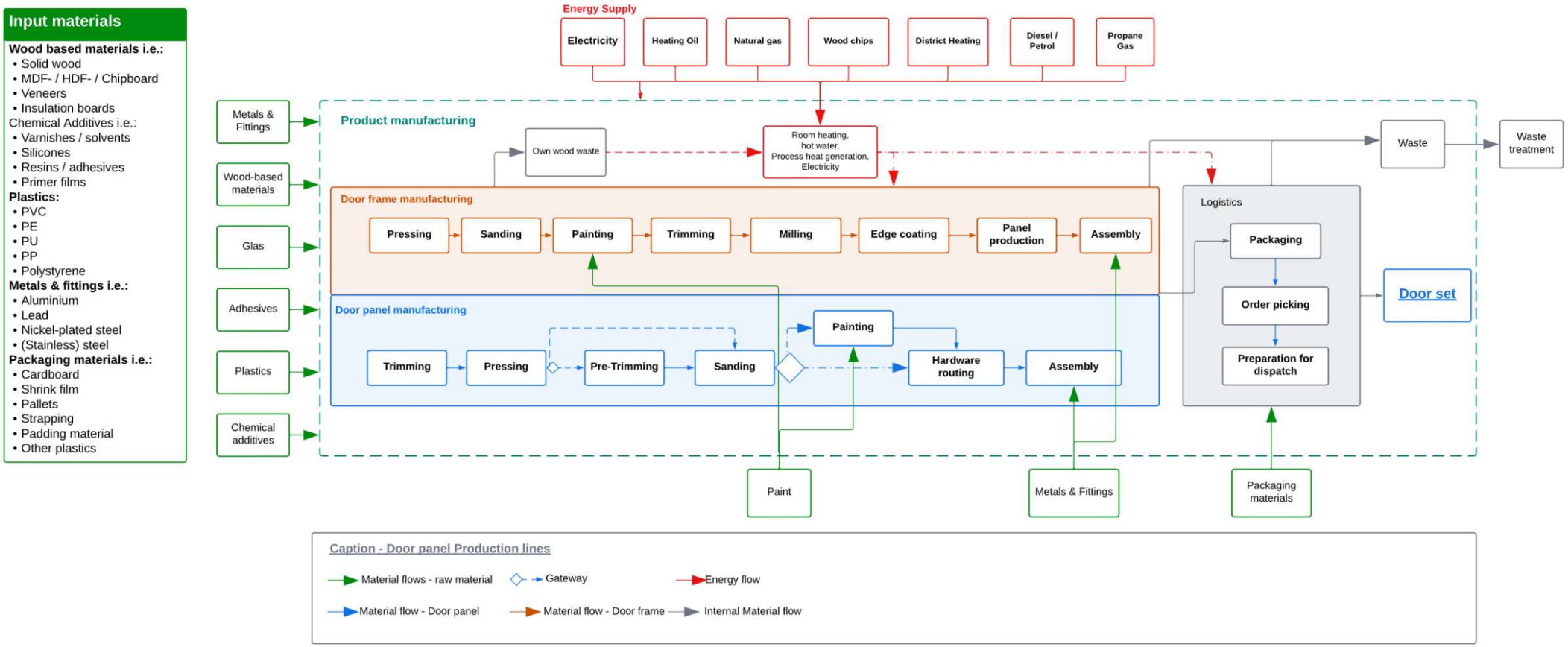
Characterisation methods: EN 15804 +A2 LCIA & LCI indicators V1.01 / EN 15804 official

Environmental Impact Assessment Method: EN15804 reference package EF 3.1

Description of system boundaries: Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + A4–A5 + C and D)

The main LCA results were calculated using an inventory representing the average production of all products covered by the EPD (see table under ’product description’). All quantities in the content declaration are average quantities based on the percentage distribution of door types in the table above. The declared results represent the average product group and the reported product variations are calculated relative to these average results. In some cases, best-case and worst-case scenarios were calculated. For the best-case scenario, a honeycomb door is used, and for the worst-case scenario, a radiation-shielding door containing 35% lead.

Process flow diagram:



More information:
The results have been calculated per 1 m² of product.
The study does not exclude any modules or processes which are mandatory.
The study does not exclude any hazardous materials or substances.
All relevant inputs and outputs from each unit process that have available data are considered in the calculation.
No single unit process is disregarded if it accounts for more than 1% of the total mass or energy flows.
Additionally, the total neglected input and output flows for each module do not surpass 5% of the energy usage or mass.

Target group: The aim of the study is to provide information and data for an EPD for business-to-business communication.

Allocation:
In this study, as per EN 15804, allocation is conducted in the following order:
1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.
Module A3 generates 0.06 kg/m² door set of steel scrap. This amount could be classified as a co-product. However, the economic value of this amount is very low compared to the economic value of the door component. The effort required for allocation is disproportionate compared to the improvement in the accuracy of the results. Therefore, the amount of steel scrap is negligible for allocation purposes.
The allocations in the Ecoinvent 3.12 datasets used in this study follow the Ecoinvent system model ‘EN15804 +A2 LCIA & LCI indicators V1.01/ EN 15804 official’.
No other allocations were applied in the preparation of the EPD.

Explanation of assumptions regarding modules A2, A4, A5, C and D:

Transport (A2):
Based on the given data, the average transport distance from supplier to door plant is determined for each company. Transport performance is calculated using this data, the quantity of materials delivered per company, and the number of door sets produced. This results in approximately 10.3 tkm per m² door set. Transportation is modeled using a data set that represents a standard truck.

Transport (A4):
For transport to the customer, the standard case specified in DIN EN 17213, Annex G, for large-scale projects is used. This assumes that a 40-metric-ton truck travels a total distance of 300 km.

Construction / installation process (A5):
The door is installed manually. Therefore, no relevant consumption of energy or water, and no use of machinery or powered equipment, is assumed for the installation process.
Installation-related ancillary materials and fixing materials are included in the delivered product scope and/or have already been accounted for in the material flow model of modules A1–A3. Their production and supply are therefore not modelled again in module A5 to avoid double counting.
No relevant material losses, cutting waste, or product-related installation waste are assumed for the door itself during installation. Consequently, the only process considered in module A5 is the treatment of packaging waste generated when unpacking the product at the construction site.

Electricity:
The modeling uses the German residual mix. The German residual mix was chosen because 50% of average door production and over 75% of the electricity consumption reported by the participating companies for the average door set occurs in Germany. Additionally, the German residual mix is a conservative estimate, as the residual mixes of other countries have only marginally lower environmental impacts. The residual mix from the EcoInvent 3.12 database is representative of the year 2024. Electricity, including its upstream supply chain, has a GWP-GHG value of 0.85 kg CO_2eq/kWh equivalents.

Heat from wood chips:
For modeling purposes, an Ecoinvent dataset on heat generation from wood chips is used ("Heat, district or industrial, other than natural gas {CH}| heat production, wood chips from industry, at furnace 5000 kW | EN15804, S"). The dataset creator has already allocated the environmental impacts between heat and electricity.
For the on-site production of heat from wood chips or wood flour generated at the facility itself, the data set "Heat, district or industrial, other than natural gas {CH}| heat production, wood chips from industry, at furnace 5000 kW | EN15804, S" is also used. However, the input of wood chips is manually set to zero, since the chips are generated on-site by the manufacturers of the door components and do not need to be procured externally.

Waste generated within the supply chain of Arbonia members:
The treatment of waste generated within the upstream value chain is already included in the EcoInvent datasets, which map the material and energy inputs to the Arbonia members. This is done through so-called "Waste Treatment" processes, which are directly incorporated into the datasets. Consequently, these waste treatment processes are already assigned to Module A1 or A3, depending on which module the respective material or energy source is assigned to.

Waste generated at the sites of Arbonia members:
At Arbonia's business sites, the volumes of waste generated can be modeled based on the waste balances for the 2024 calendar year. Due to the wide variety of waste types, the total quantities are recorded and allocated as percentages to the five main waste categories (hazardous waste, metal waste, wood waste, municipal solid waste, and glass waste). According to this, the production of one m² door set generates approximately 2.1 kg of waste.

Waste	Mass, kg / m² door set
Wood waste	1.74
Metal waste	0.06
Municipal waste	0.26
Hazardous waste	0.08
Glass waste	0.002
TOTAL	2.1

According to the standard case for wooden windows and doors specified in DIN 17213, Appendix G, Figure G.3. 5% of the non-metal content and 70% of the glass waste are sent to landfills. The remaining 30% of the glass waste is recycled. 100% of the wood and municipal waste is incinerated with energy recovery.
To model the treatment of metal waste, a dataset on steel sorting at a sorting plant is first used. Steel recycling is modeled through the sorting and pressing of steel. Glass recycling is modeled through the sorting process.

Waste-treatment scenario for packaging materials (A5)
The waste-treatment scenarios for the packaging materials generated in module A5 are modelled conservatively, in alignment with the default end-of-life scenarios provided in DIN EN 17213:2026-01, Annex B. As the packaging does not contain glass or metal components, the respective recycling routes are not applicable. Wood and plastic packaging are therefore assumed to undergo 100% thermal treatment with energy recovery (energy efficiency for incineration of wood and plastic 61 %). Any benefits and loads beyond the system boundary resulting from energy recovery are reported separately in module D, where applicable.

End-of-life treatment of the door set:
When dismantling a door set, both the door panel and the door frame must be removed. The door panel is almost always removed manually. Therefore, no environmental impacts are modeled for the removal of the door panel. When removing a door frame, tools such as angle grinders, cordless screwdrivers, or a multi-tool are often used. Based on the conservative assumption of a total usage time of 10 minutes per frame and a conservatively estimated power consumption of 1,000 watts, the electricity consumption amounts to 0.17 kWh. Due to the low relevance of Module C1 to environmental impacts and the lack of a suitable EcoInvent dataset, the manufacturing of the tools required for removal is not modeled. A dataset is used that reflects the German consumer electricity mix.

Information module C2 describes the transport of the residual materials from the building from the demolition site to the disposal or recycling facility. For this purpose, the average transport distance for waste wood 68 km is taken from EcoInvent 3.12 dataset on waste wood disposal. With a weight of 20.0 kg per m² door set, this results in 1.36 metric ton-kilometers. The transport of the disposed door set is modeled using the data set for an average truck.

Although the door set consists mainly of wood and wood-based materials, it also contains other materials such as metals, plastics, and coatings. According to the standard case for wooden windows and doors specified in DIN 17213, Appendix G, Figure G.3. 5% of the non-metal content and 70% of the glass waste are sent to landfills. The remaining 30% of the glass waste is recycled. The rest of the wood and municipal waste is incinerated with energy recovery. A total of 20.0 kg of materials of one m² door set is disposed of. Since a door set consists, on average, of 92.4% wood and wood-based materials, a data set for the incineration of wood in a municipal waste-to-energy plant is used. EcoInvent models only data sets for untreated wood or for chromated wood. Neither data set is suitable, since although there is no chromium coating, the particleboard, for example, contains adhesives such as MUF adhesives. As an approximation, the following approach is taken: For the 92.4 % waste wood, a data set for untreated wood is used. The remaining 7.6% is divided into four different waste categories: hazardous waste (0.6%), metal waste (1.1%), plastic waste (3.9%) and glass waste (2.0%). As with wood waste and plastic waste is incinerated to generate energy. It is assumed that 30% of glass and 100% metal waste is recycled. Hazardous waste is incinerated without energy recovery.

Credits outside the system boundary:
Module D describes all loads and benefits resulting from the waste treatment of production waste and door components at the end of their life cycle. As described before waste, electricity, heat, and secondary steel are exported from the product system. To model the avoided life cycle inventory values and environmental impacts resulting from this, the following data sets are used for modeling:

- For heat generation, a dataset on heat generation from natural gas in Europe (excluding Switzerland) is used.
- To model the substitution of electricity generation, a dataset for the German electricity mix is used.
- The metal waste generated at the production sites, which is processed in Module A3 through sorting and pressing, results in secondary metal. The model assumes that this metal substitutes for primary steel. For this purpose, a dataset for unalloyed steel from a converter was used.

The amount of metal replaced is based on the amount specified under Module A3 (0.06 kg/m² door element) and the amount from Module C3 (0.22 kg/m² door element). The amount of glass replaced is based on 0.002 kg/m² door element in Module A3 and 0.12 kg/m² door element in Module C3. Consequently, the quantities shown in the following table are substituted.

Material	Amount
Substitution for Heat Recovery	76.1 MJ / m² door set
Substitution in Electricity Generation	37.8 MJ / m² door set
Steel Substitution	0.28 kg / m² door set
Glass Substitution	0.12 kg / m² door set

Modules declared, geographical scope, share of primary data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Distribution/ installation stage		Use stage							End-of-life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU					-	-	-	-	-	-	-	EU				EU
Share of primary data	31 %*			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0% / +429%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	-49% / +20%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Modules/processes/life-cycle stages declared noted with “X”. Modules/processes/life-cycle stages not declared marked as “ND”.

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3	Share on GWP-GHG results for A1-A3
Manufacturing of product	Collected data	Ecoinvent v3.12	2024	Primary data, Secondary data	0%	59%
Transport to manufacturing site	Collected data	Ecoinvent v3.12	2024	Primary data	6%	6%
Generation of electricity used in manufacturing of product	Database	Ecoinvent v3.12	2024	Primary data	25%	25%
Production of raw material ‘MDF’	Collected data, Database	Ecoinvent v3.12	2024	Primary data, Secondary data	0%	10%
Total share of primary data, of GWP-GHG results for A1-A3					31%*	100%

*The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Data quality assessment:

The EPD covers product manufactured in 2024. Primary data was collected directly from the manufacturer and suppliers, while background data was sourced from Ecoinvent v3.12.

The quality of the data has been assessed according to EN 15804:2012+A2:2019, Annex E, and EN 15941. Using the semi-quantitative evaluation criteria for data quality (DQR) proposed by the European Commission in its Environmental Footprint Guide, the following results were obtained:

- Temporal representativeness (TiR): Good.
- Geographical representativeness (GeR): Good.
- Technological representativeness (TeR): Good.

Overall, the data quality is rated “good”. No datasets assessed were rated “very poor”. The assessed datasets together represent more than 90% of the results of each declared environmental impact indicator, ensuring that the EPD is based on sufficiently robust and reliable data.

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.
The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

The main LCA results were calculated using an inventory representing the average production of all products covered by the EPD (see table under 'product description'). All quantities in the content declaration are average quantities based on the percentage distribution of door types in the table above. The declared results represent the average product group and the reported product variations are calculated relative to these average results. In some cases, best-case and worst-case scenarios were calculated. For the best-case scenario, a honeycomb door is used, and for the worst-case scenario, a radiation-shielding door containing 35% lead.

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	2.91E+00	1.17E+00	8.18E+00	1.84E-01	1.90E-01	1.88E+01	1.06E+00	-1.36E+01
GWP-fossil	kg CO_2 eq.	2.73E+01	1.17E+00	1.58E-01	1.70E-01	1.90E-01	2.13E+00	3.06E-01	-1.36E+01
GWP-biogenic	kg CO_2 eq.	-2.47E+01	6.34E-04	8.02E+00	1.39E-02	1.03E-04	1.67E+01	7.49E-01	-2.85E-03
GWP-luluc	kg CO_2 eq.	3.07E-01	3.98E-04	1.52E-06	2.97E-04	6.44E-05	1.01E-04	6.12E-05	-1.34E-03
ODP	kg CFC 11 eq.	6.03E-06	2.67E-08	6.33E-11	2.15E-09	4.33E-09	4.08E-09	3.62E-09	-3.24E-07
AP	mol H^+ eq.	1.46E-01	5.31E-03	4.63E-05	4.91E-04	8.60E-04	3.48E-03	4.71E-04	-2.93E-02
EP-freshwater	kg P eq.	1.12E-02	8.43E-05	9.72E-07	2.53E-04	1.37E-05	1.41E-04	9.17E-05	-4.91E-03
EP-marine	kg N eq.	4.35E-02	2.13E-03	2.60E-05	1.34E-04	3.45E-04	1.85E-03	5.38E-04	-7.91E-03
EP-terrestrial	mol N eq.	4.53E-01	2.32E-02	2.28E-04	9.76E-04	3.76E-03	1.75E-02	1.50E-03	-7.97E-02
POCP	kg NMVOC eq.	1.53E-01	8.22E-03	5.69E-05	2.75E-04	1.33E-03	4.39E-03	5.92E-04	-2.51E-02
ADP-minerals&metals*	kg Sb eq.	1.89E-04	3.87E-06	9.35E-09	1.94E-06	6.27E-07	9.56E-07	4.80E-07	-4.42E-05
ADP-fossil*	MJ	4.37E+02	1.68E+01	3.83E-02	2.18E+00	2.73E+00	3.02E+00	1.85E+00	-1.79E+02

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	C4	D
WDP*	m^3	1.42E+01	8.85E-02	8.12E-03	3.57E-02	1.44E-02	2.29E-01	2.47E-02	-8.90E-01
Acronyms	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								

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Additional mandatory and voluntary impact category indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO_2 eq.	2.78E+01	1.17E+00	1.58E-01	1.84E-01	1.90E-01	2.13E+00	3.63E-01	-1.36E+01

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Resource use indicators

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	6.30E+01	2.83E-01	9.44E+01	8.04E-01	4.58E-02	1.64E+02	1.39E+01	-1.38E+00
PERM*	MJ	3.65E+02	0.00E+00	-9.67E+01	0.00E+00	0.00E+00	-2.55E+02	-1.33E+01	0.00E+00
PERT	MJ	4.28E+02	2.83E-01	-2.30E+00	8.04E-01	4.58E-02	-9.10E+01	5.80E-01	-1.38E+00
PENRE	MJ	2.73E+02	1.68E+01	1.29E+01	2.18E+00	2.73E+00	4.94E+01	7.34E+00	-1.74E+02
PENRM*	MJ	6.19E+01	0.00E+00	-1.34E+01	0.00E+00	0.00E+00	-4.41E+01	-4.40E+00	0.00E+00
PENRT	MJ	3.35E+02	1.68E+01	-5.00E-01	2.18E+00	2.73E+00	5.30E+00	2.94E+00	-1.74E+02
SM	kg	2.83E+00	7.49E-03	4.85E-05	5.47E-04	1.21E-03	1.51E-01	7.01E-02	-5.13E+00
RSF	MJ	3.08E+01	9.57E-05	9.64E-07	8.51E-06	1.55E-05	1.41E-04	3.46E-05	-8.10E-04
NRSF	MJ	9.77E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.29E-06	4.83E-07	-6.46E-06
FW	m^3	3.42E-01	2.18E-03	1.90E-04	9.47E-04	3.54E-04	5.80E-03	5.29E-04	-2.03E-02
Acronyms	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 = Use of net fresh water								

** For the PERM and PENRM the new "GUIDANCE TO CALCULATING THE PRIMARY ENERGY USE INDICATORS" in Annex 3 of the PCR is followed and calculated according to option A*

Waste indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.04E+01	1.00E-01	3.17E-03	5.43E-02	1.63E-02	1.77E-01	1.77E-01	-1.97E+00
Non-hazardous waste disposed	kg	7.64E+01	1.60E+00	1.41E-01	1.25E+00	2.59E-01	2.00E+01	5.69E+00	-2.42E+01
Radioactive waste disposed	kg	3.76E-02	4.83E-06	1.44E-08	5.53E-06	7.82E-07	5.59E-01	7.60E-01	-9.87E-01

Output flow indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	3.63E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-07	1.24E-08	-1.32E-06
Material for recycling	kg	5.58E-02	4.84E-04	1.79E-06	7.29E-04	7.84E-05	3.48E-01	1.13E-04	-1.32E-02
Materials for energy recovery	kg	5.53E-02	8.03E-07	5.44E-09	4.71E-08	1.30E-07	2.25E-01	2.89E-06	-5.85E-04
Exported energy, electricity	MJ	3.37E+00	0.00E+00	9.10E-01	0.00E+00	0.00E+00	3.35E+01	0,00E+00	-3.39E+00
Exported energy, thermal	MJ	7.13E+00	0.00E+00	1.83E+00	0.00E+00	0.00E+00	6.72E+01	0.00E+00	-2.18E-02

Additional LCA results (other environmental performance results) of the product(s)

This EPD covers several door sets and does not claim compliance with ISO 21930. Therefore, variations greater than 10% are permitted under PCR 2019:14. These variations are expected, as the door sets are available in many different designs. The products have similar characteristics in terms of raw material, manufacturing processes, and intended applications. For these reasons, grouping these door sets under one EPD was considered appropriate.
The main LCA results were calculated using an inventory representing the average production of all products covered by the EPD (see table under ’product description’). All quantities in the content declaration are average quantities based on the percentage distribution of door types in the table above. The declared results represent the average product group and the reported product variations are calculated relative to these average results. In some cases, best-case

and worst-case scenarios were calculated. For the best-case scenario, a honeycomb door is used, and for the worst-case scenario, a radiation-shielding door containing 35% lead.

LCA result of one declared unit product	Unit	A1-A3				A1 – D		
		Best Case Min (%)	Average door set	Worst Case Max (%)		Best Case Min (%)	Average door set	Worst Case Max (%)
Mandatory impact category indicators according to EN 15804								
GWP-total	kg CO_2 eq.	-329%	2.91E+00	3870%		-45%	1.89E+01	352%
GWP-fossil	kg CO_2 eq.	0%	2.73E+01	432%		-118%	1.79E+01	278%
GWP-biogenic	kg CO_2 eq.	-133%	-2.47E+01	24%		-133%	7.14E-01	24%
GWP-luluc	kg CO_2 eq.	-5%	3.07E-01	42%		-5%	3.07E-01	38%
ODP	kg CFC 11 eq.	0%	6.03E-06	31%		-5%	5.75E-06	24%
AP	mol H^+ eq.	0%	1.46E-01	874%		-6%	1.28E-01	850%
EP-freshwater	kg P eq.	0%	1.12E-02	983%		-168%	6.92E-03	1213%
EP- marine	kg N eq.	0%	4.35E-02	335%		-6%	4.06E-02	231%
EP-terrestrial	mol N eq.	0%	4.53E-01	337%		0%	4.20E-01	230%
POCP	kg NMVOC eq.	0%	1.53E-01	327%		0%	1.42E-01	216%
ADP-minerals&metals*	kg Sb eq.	-5%	1.89E-04	21354%		-45%	1.53E-04	26431%
ADP-fossil*	MJ	0%	4.37E+02	338%		-77%	2.85E+02	261%
WDP*	m^3	-5%	1.42E+01	434%		-3%	1.37E+01	413%
Additional mandatory and voluntary impact category indicators								
GWP-GHG	kg CO_2 eq.	0%	2.78E+01	429%		-115%	1.84E+01	278%
Resource use indicators								
PERE	MJ	-264%	6.30E+01	1358%		-225%	3.35E+02	0%
PERM	MJ	-109%	3.65E+02	56%		0%	0.00E+00	0%
PERT	MJ	-94%	4.28E+02	224%		-93%	3.35E+02	313%
PENRE	MJ	-136%	2.73E+02	571%		-252%	1.90E+02	713%
PENRM	MJ	-288%	6.19E+01	91%		0%	0.00E+00	0%
PENRT	MJ	-125%	3.35E+02	471%		-226%	1.90E+02	776%
SM	kg	0%	2.83E+00	1047%		-29594%	-2.07E+00	352%
RSF	MJ	-74%	3.08E+01	78%		-74%	3.08E+01	78%
NRSF	MJ	0%	9.77E-07	98%		0%	0.00E+00	0%
FW	m3	-5%	3.42E-01	467%		-4%	3.31E-01	479%
Waste indicators								
Hazardous waste disposed	kg	-5%	1.04E+01	3529%		-45%	8.99E+00	4090%
Non-hazardous waste disposed	kg	0%	7.64E+01	1013%		-43%	8.12E+01	947%
Radioactive waste disposed	kg	0%	3.76E-02	19%		0%	3.70E-01	2825%
Output flow indicators								
Components for re-use	kg	0%	3.63E-08	93%		0%	0.00E+00	0%
Material for recycling	kg	-4%	5.58E-02	5130%		-42%	3.92E-01	3809%
Materials for energy recovery	kg	0%	5.53E-02	100%		0%	2.80E-01	12757%
Exported energy, electricity	MJ	-4%	3.37E+00	37%		-123%	3.44E+01	49%
Exported energy, thermal	MJ	-68%	7.13E+00	37%		-97%	7.61E+01	56%

Additional LCA results (end of waste scenarios)

Waste Scenarios 100% incineration & 100% landfill for the average door set represented by the table on page 3

The main LCA results were calculated using an inventory representing the average production of all products covered by the EPD (see table under 'product description'). All quantities in the content declaration are average quantities based on the percentage distribution of door types in the table above. The declared results represent the average product group and the reported

product variations are calculated relative to these average results. In some cases, best-case and worst-case scenarios were calculated. For the best-case scenario, a honeycomb door is used, and for the worst-case scenario, a radiation-shielding door containing 35% lead.

100% Incineration:

Indicator	Unit	C3	C4	D
Mandatory impact category indicators according to EN 15804				
GWP-total	kg CO_2 eq.	2.95E+01	0.00E+00	-1.43E+01
GWP-fossil	kg CO_2 eq.	2.42E+00	0.00E+00	-1.42E+01
GWP-biogenic	kg CO_2 eq.	2.71E+01	0.00E+00	7.63E-03
GWP-luluc	kg CO_2 eq.	1.47E-04	0.00E+00	-1.40E-03
ODP	kg CFC 11 eq.	7.20E-09	0.00E+00	-3.40E-07
AP	mol H^+ eq.	3.78E-03	0.00E+00	-3.06E-02
EP-freshwater	kg P eq.	2.25E-04	0.00E+00	-5.15E-03
EP-marine	kg N eq.	1.94E-03	0.00E+00	-8.28E-03
EP-terrestrial	mol N eq.	1.84E-02	0.00E+00	-8.34E-02
POCP	kg NMVOC eq.	4.74E-03	0.00E+00	-2.63E-02
ADP-minerals&metals*	kg Sb eq.	1.04E-06	0.00E+00	-4.65E-05
ADP-fossil*	MJ	4.47E+00	0.00E+00	-1.87E+02
WDP*	m^3	2.73E-01	0.00E+00	-9.32E-01
Additional mandatory and voluntary impact category indicators				
GWP-GHG	kg CO_2 eq.	2.42E+00	0.00E+00	-1.43E+01
Resource use indicators				
PERE	MJ	4.40E+02	0.00E+00	-1.44E+00
PERM	MJ	-2.68E+02	0.00E+00	0.00E+00
PERT	MJ	1.72E+02	0.00E+00	-1.44E+00
PENRE	MJ	7.00E+01	0.00E+00	-1.82E+02

Indicator	Unit	C3	C4	D
PENRM	MJ	-4.85E+01	0.00E+00	0.00E+00
PENRT	MJ	2.15E+01	0.00E+00	-1.82E+02
SM	kg	1.35E-01	0.00E+00	-5.13E+00
RSF	MJ	4.69E-04	0.00E+00	-8.14E-04
NRSF	MJ	5.04E-06	0.00E+00	-6.46E-06
FW	m^3	6.29E-03	0.00E+00	-2.13E-02
Waste indicators				
Hazardous waste disposed	kg	3.56E-01	0.00E+00	-2.07E+00
Non-hazardous waste disposed	kg	2.07E+01	0.00E+00	-2.54E+01
Radioactive waste disposed	kg	1.37E+00	0.00E+00	-9.87E-01
Output flow indicators				
Components for re-use	kg	5.09E-08	0.00E+00	-1.32E-06
Material for recycling	kg	1.07E-01	0.00E+00	-1.39E-02
Materials for energy recovery	kg	1.18E-05	0.00E+00	-5.85E-04
Exported energy, electricity	MJ	3.52E+01	0.00E+00	-3.56E+00
Exported energy, thermal	MJ	7.07E+01	0.00E+00	-2.24E-02

100% Landfill:

Indicator	Unit	C3	C4	D
Mandatory impact category indicators according to EN 15804				
GWP-total	kg CO_2 eq.	0.00E+00	1.93E+00	-2.09E+00
GWP-fossil	kg CO_2 eq.	0.00E+00	4.97E-01	-2.08E+00
GWP-biogenic	kg CO_2 eq.	0.00E+00	1.44E+00	2.37E-03
GWP-luluc	kg CO_2 eq.	0.00E+00	2.18E-04	-2.12E-04

Indicator	Unit	C3	C4	D
ODP	kg CFC 11 eq.	0.00E+00	1.16E-08	-3.07E-08
AP	mol H^+ eq.	0.00E+00	2.32E-03	-5.34E-03
EP-freshwater	kg P eq.	0.00E+00	1.77E-04	-1.09E-03
EP-marine	kg N eq.	0.00E+00	8.76E-03	-1.39E-03
EP-terrestrial	mol N eq.	0.00E+00	1.04E-02	-1.37E-02
POCP	kg NMVOC eq.	0.00E+00	4.17E-03	-3.81E-03
ADP-minerals&metals*	kg Sb eq.	0.00E+00	1.13E-06	-9.79E-06
ADP-fossil*	MJ	0.00E+00	7.93E+00	-2.46E+01
WDP*	m^3	0.00E+00	3.75E-02	-1.59E-01
Additional mandatory and voluntary impact category indicators				
GWP-GHG	kg CO_2 eq.	0.00E+00	4.98E-01	-2.09E+00
Resource use indicators				
PERE	MJ	0.00E+00	5.27E+02	0.00E+00
PERM	MJ	0.00E+00	-2.68E+02	0.00E+00
PERT	MJ	0.00E+00	2.59E+02	0.00E+00
PENRE	MJ	0.00E+00	6.75E+01	0.00E+00
PENRM	MJ	0.00E+00	-4.85E+01	0.00E+00
PENRT	MJ	0.00E+00	1.90E+01	0.00E+00
SM	kg	0.00E+00	1.05E-01	-3.32E-03
RSF	MJ	0.00E+00	1.00E-04	-1.68E-05
NRSF	MJ	0.00E+00	6.90E-07	0.00E+00
FW	m^3	0.00E+00	8.43E-04	-3.77E-03
Waste indicators				

Indicator	Unit	C3	C4	D
Hazardous waste disposed	kg	0.00E+00	1.67E-01	-4.40E-01
Non-hazardous waste disposed	kg	0.00E+00	1.11E+02	-5.49E+00
Radioactive waste disposed	kg	0.00E+00	1.09E+00	-2.58E-06
Output flow indicators				
Components for re-use	kg	0.00E+00	1.77E-08	0.00E+00
Material for recycling	kg	0.00E+00	3.38E-04	-3.02E-03
Materials for energy recovery	kg	0.00E+00	4.29E-06	-4.50E-07
Exported energy, electricity	MJ	0.00E+00	4.57E-03	-7.97E-01
Exported energy, thermal	MJ	0.00E+00	3.15E-02	-2.10E-03

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CLC	Co-location centre
CPC	Central product classification
GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
SVHC	Substances of Very High Concern
ND	Not Declared

REFERENCES

- General Programme Instructions of International EPD System. Version 5.0.1
- PCR 2019:14 Construction products (EN 15804+A2) (version 2.0.1)
- c-PCR Windows and doors (EN 17213) (c-PCR to PCR 2019:14) (Version 2.0.0)
- EN 15804:2012+A2:2019: Sustainability of construction works -Environmental Product Declarations - Core rules for the product category of construction products
- ISO 14025:2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- DIN EN 17213:2026-01: Windows and doors - Environmental Product Declarations - Product category rules complementary to EN 15804 for windows and pedestrian doorsets; German version EN 17213:2020+A1:2025

VERSION HISTORY

Original Version of the EPD, 2026-10-05

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