

Environmental Product Declaration

 **EPD**
INTERNATIONAL EPD SYSTEM



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

Side Sliding (ISFD) Garage Doors

from

UAB Ryterna Group



Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products, based on worst-case results
EPD registration number:	EPD-IES-0026197:001
Version date:	2025-10-08
Validity date:	2030-10-08

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): <i>PCR 2019:14 Construction products (EN 15804+A2) (version 2.0.1) (2.0.1), UN CPC code 4212 Doors, windows and their frames and thresholds for doors, of iron, steel or aluminium</i>
PCR review was conducted by: <i>The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: C Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat www.environdec.com/contact.</i>
c-PCR: <i>PCR 2019:14-c-PCR-007 Being updated - Windows and doors (EN 17213) (c-PCR to PCR 2019:14) (1.0.0)</i>

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
<input checked="" type="checkbox"/> Individual EPD verification without a pre-verified LCA/EPD tool
Third-party verifier: Mari Kirss, Meetripuu OÜ
Approved by: International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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: UAB Ryterna Group

Address: Ryternos str. 2, Biruliskes, Kaunas LT-54469, Lithuania

Contact: Paulius Bražiulis, paulius.br@ryterna.lt

Address and contact information of the LCA practitioner commissioned by the EPD owner: Urtė Valdavičė, UAB Vesta Consulting

Description of the organisation: RYTERNA is known as a manufacturer specializing in overhead sectional doors, hinged and side sliding doors for residential garages and industry, also house entrance doors and other products. Our distribution network provides sales, service, and logistics Europe-wide. RYTERNA fulfils the needs of customers by offering a large range of high quality, flexible, and customizable products for a great cost. The goal is to be a European leading supplier for all kinds of made-to-order doors – is viable with the support of a skilled and enthusiastic RYTERNA team in combination with modern production facilities and a culture of quality.

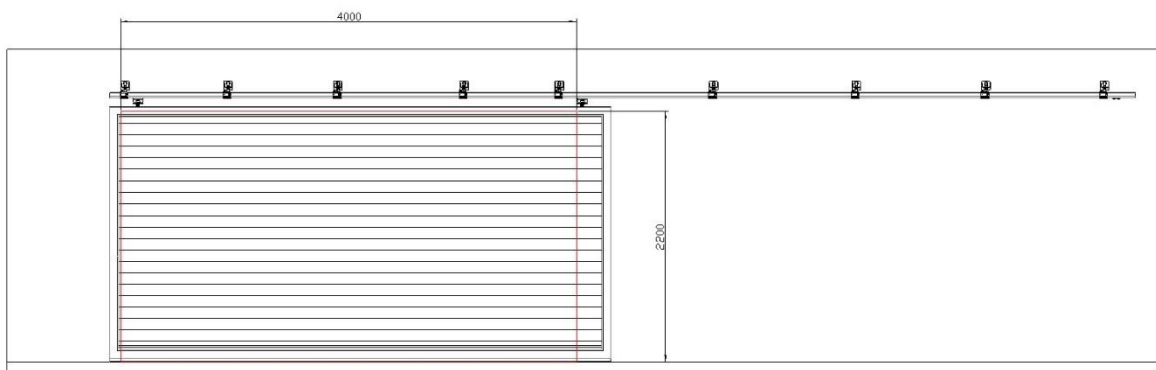
Since the start of RYTERNA in 1993, we were respecting our main values – continuous development, creative approach and goodwill.

Product-related or management system-related certifications: The company has established a Quality Management System in accordance with the requirements of LST EN ISO 9001:2015, and an Environmental Management System in compliance with LST EN ISO 14001:2015, and an Occupational Health and Safety Management System in accordance with LST ISO 45001:2018.

PRODUCT INFORMATION

Product name: Side Sliding (ISFD) Garage Door

Visual representation (e.g., an image):



Note. The visual representation is of the product with dimensions 4000x2200. For calculations, the standard size of 2000x2180 was used, as required in EN 17213:2020.

UN CPC code: 4212 Doors, windows and their frames and thresholds for doors, of iron, steel or aluminium

Product description: RYTERNA offers a comprehensive range of garage door systems, including sectional, side-hinged, and side-sliding models, all tailored to project-specific dimensions and architectural requirements. Constructed using high-quality materials such as double steel skin sandwich panels, aluminium frames, stainless steel elements, these doors ensure durability, thermal insulation,

and long-term performance. All doors are CE-marked and manufactured in compliance with applicable EN standards, ensuring optimal functionality, safety, and visual integration with residential or commercial facades.

This EPD covers Side Sliding (ISFD) garage door models.

Product application areas: The garage doors are primarily intended for industrial applications.

- The Side Sliding (SSD) garage doors model operates laterally along wall-mounted rails, offering an optimal solution for garages with limited headroom and building depth.

Technical data: All garage door components are engineered and validated under rigorous industrial conditions. Product design has been progressively optimized through a continuous process of “intelligent quality control,” ensuring consistent performance and long-term reliability throughout all stages of production. The core structural component utilized in the manufacturing of the garage doors is the double steel skin sandwich panel. This panel comprises a thermally insulating core material adhesively bonded between two steel facings, forming a composite system that delivers high load-bearing capacity and thermal efficiency. The panels are available in multiple configurations to accommodate varying structural and design specifications.

More detail feature specifications for Garage Door model are presented below.

Side Sliding garage doors	
Feature	Specification
Design Elements	Stainless steel inlays and windows for high-end, contemporary appearance.
Track Systems	Zinc-coated or powder-coated customized track systems.
Pass Door Option	Optional integrated pedestrian access door with standard threshold and opening width up to 1,2 m.
Panel Composition	Panels consist of 0,4-0,7 mm steel sheets, coated in any RAL, inside PU foam.
Operation	Available in manual or electric versions. Compatible with most automation systems for safe and efficient operation.
Glazing Options	Double acrylic glazing (clear, matte, frosted, or tinted).
Design Variability	Over 100 panel designs, surface textures, and colours available.

Technical specifications and product standards: All products bear the CE marking, demonstrating compliance with applicable European Union directives. The garage doors meet the requirements of EN 13241:2003 + A2:2016, which specifies performance and safety characteristics for industrial, commercial, and garage doors.

Production is carried out in accordance with the following harmonized European standards:

- EN 12426 – Air permeability
- EN 12425 – Water tightness
- EN 12424 / EN 12444 – Resistance to wind load / Mechanical aspects of wind resistance
- EN 12667 – Thermal transmittance (U-value) determination

Name and location of production site(s): Ryternos str. 2, Biruliskes, Kaunas LT-54469, Lithuania

References to relevant website for more information: <https://ryterna.lt/garazo-vartai/>

CONTENT DECLARATION

The content declaration shows the weight of product per declared unit and the weight of product average packaging per declared unit.

The declared unit is 1 m² of Side Sliding (ISFD) Garage Door.

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C / declared unit
Metal coated steel sheets and coils	13,65	-	-	-
PVC (Polyvinylchloride)	<0,01	-	-	-
Aluminium profile	4,03	-	-	-
EPDM (ethylene propylene diene monomer rubber)	1,34	-	-	-
Nylon	0,07	-	-	-
Polyols	0,18	-	-	-
Isocyanate	1,16	-	-	-
Pentane	0,05	-	-	-
TOTAL	21,16	-	-	-

Note. The share of total recycled material in the product is 20,73%, however the share of post- and pre-consumer recycled material content is unknown.

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C / declared unit
¹ Hardwood fibreboard	2,27	10,74	0,97
Expandable polystyrene (EPS)	0,07	0,33	-
TOTAL	2,34	11,07	0,97

¹Global Warming Potential biogenic: -1,56 kg CO₂e / kg

Note. 1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO₂.

Products does not contain any REACH SVHC substances in amounts greater than 0,1% (1000 ppm).

LCA INFORMATION

Declared unit: 1 m² of Side Sliding (ISFD) Garage Door with standard size dimensions of 2000x2180, as required in EN 17213:2020. Density is based on the worst-case product and is equal to 21,16 kg/m²

Reference service life: Not declared according to the EN 17213:2020

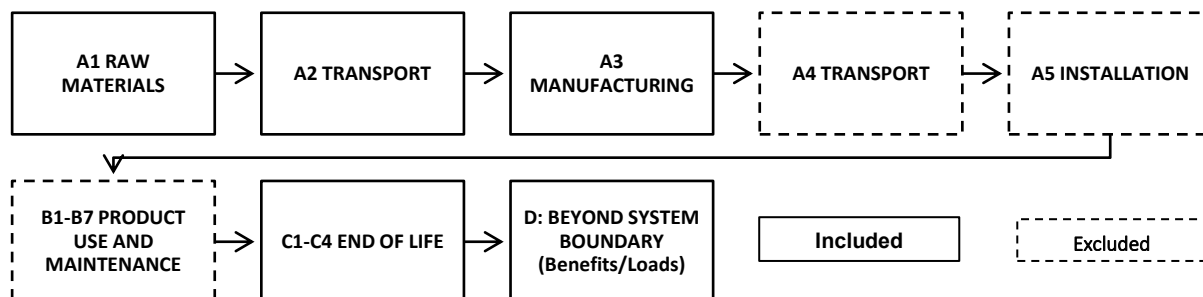
Time representativeness: Primary data was collected internally. The production data refers to the average of the year 2024 (January 2024 – December 2024).

Geographical scope: The geographical scope for module A1-A2 is Global, for A3, A4, C1-C4 and module D is Europe.

Database(s) and LCA software used: The Ecoinvent database provides the life cycle inventory data for the raw and process materials obtained from the background system. The used database is Ecoinvent 3.10.1, One Click LCA, IDEMAT and Plastics Europe. The LCA software used is One Click LCA.

Description of system boundaries: cradle-to-gate with modules C1-C4 and module D.

Process flow diagram:



Note. This EPD does not cover the construction process stage (A4, A5) and the use stage (B1-B7).

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

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x
Geography	GLO	GLO	EU	-	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
Primary data used	14,41%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	>10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	ND			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Description of the system boundary (X = Included in LCA; ND = Not declared)

Data quality: The EPD covers products manufactured in one factory in Kaunas (Lithuania) which provided data for the period January – December 2024. The data collection has been done internally and thoroughly. The data is based on yearly production amounts and extrapolations of measurements on specific machines and plants. The EPD covers raw material supply and transport in Global scale, product production and end-of-life in Europe scale. The manufacturing process of garage doors involves panel production, followed by cutting, painting, and assembling with additional components like tracks, windows, and locks, before final inspection, packing, and transportation. The site is powered by residual mix and renewable solar energy, additionally natural gas for heating and propane and diesel for mobile machinery use. Background data was sourced from the ecoinvent 3.10.1, One Click LCA, IDEMAT and Plastics Europe databases. No poor or very poor data was found during the assessment of relevant data using PEF method (EN 15804:2012+A2:2019, Annex E, only E.2). The data quality assessment is done in accordance with EN 15941:2024 and is assessed in terms of precision, completeness, representativeness, consistency, and sources of data. Overall, the data quality can be described as good. The EN 15804 reference package used is based on EF 3.1.

Share of primary data used: 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. Declaration of data sources, reference years, data categories, and share of primary data is presented below.

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1–A3
Production of steel (A1)	EPDs / databases	Confidential / Worldsteel 2023 LCA study, One Click LCA v.7.6	2021-2023	Primary data / Secondary data	1,70%
Production of aluminium (A1)	EPD	Confidential	2022-2023	Primary data	4,23%
Production of plastics and polymers (A1)	Databases	IDEMAT (2023)	2023	Secondary data	0,00%
Production of PU (A1)	Databases	Ecoinvent v3.10.1, IDEMAT (2023), Plastics Europe (2021)	2001-2024	Secondary data	0,00%
Transport of raw materials to manufacturing site (A2)	Database	Ecoinvent v3.10.1	2009-2024	Primary data	4,90%
Production of packaging (A3)	LCA study / database	Confidential / IDEMAT (2023)	2021-2023	Primary data / Secondary data	0,25%
Production ancillary materials (A3)	Database	Ecoinvent v3.10.1	2012-2024	Secondary data	0,00%
Energy used in manufacturing of product (A3)	Database	Ecoinvent v3.10.1	1996-2024	Primary data	3,33%
Waste and wastewater treatment (A3)	Database	Ecoinvent v3.10.1	1993-2024	Secondary data	0,00%
Total share of primary data, of GWP-GHG results for A1-A3					14,41%

Note. Ecoinvent datapoints are based on older background flows, but updated in 2024 (v.3)

The reported share of primary data is associated with uncertainty, as one or several EPDs that are used as data source lack information on the share of primary data used.

Cut-off criteria: The study does not exclude any modules or processes that are mandatory according to the Standards and PCR. No hazardous materials or substances are excluded. All major raw materials and energy inputs, as well as emissions and outputs from the unit processes for which data is available, are fully included in the calculation. In line with the PCR, the total excluded input and output flows do not exceed 5% of energy use or mass across the life cycle.

Allocation, estimates and assumptions: Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. In this study, as per EN 15804:2012+A2:2019, 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
3. Allocation should be based on economic values

The allocations in used in this study follow the system model 'Allocation, cut-off, 15804:2012+A2:2019'.

The methodological choices for allocation for reuse, recycling and recovery have been set according to the polluter pays principle (PPP).

The origin of the recycled content (pre- vs post-consumer) is unknown; therefore, a conservative approach was taken by assuming the entire recycled portion is post-consumer scrap, in accordance with PCR 2.0.1 section 4.5.3. Under this assumption, the scrap is treated as waste, and waste allocation is applied, meaning no environmental burdens are assigned to the recycled input.

Scenarios included in the LCA are based on realistic scenarios which are currently in use and are representative for one of the most likely scenario alternatives.

The environmental impacts of capital goods (e.g., production equipment, recycling machinery) and infrastructure (e.g., recycling facilities, transportation systems) have not been included in this assessment.

Calculation rules for averaging data: This EPD covers Side Sliding (ISFD) Garage Door models. It represents a multiple product EPD based on the "worst-case" scenario approach. The selected worst-case product is the Side Sliding (ISFD) Garage Door with dimensions 4000 × 2200 mm, as it contains the highest quantity of aluminium, compared to the other products within the declared product scope. The grouped products are with identical or similar functions, manufactured by a single company at one manufacturing site, with the same major steps in the A3/core processes. For each indicator and module A-C, the highest result of the included products is declared, and for module D, the lowest benefit of avoided processes and the highest load of included processes is declared.

Product life cycle

Product stage (A1-A3)

A1: This module considers the extraction and processing of raw materials.

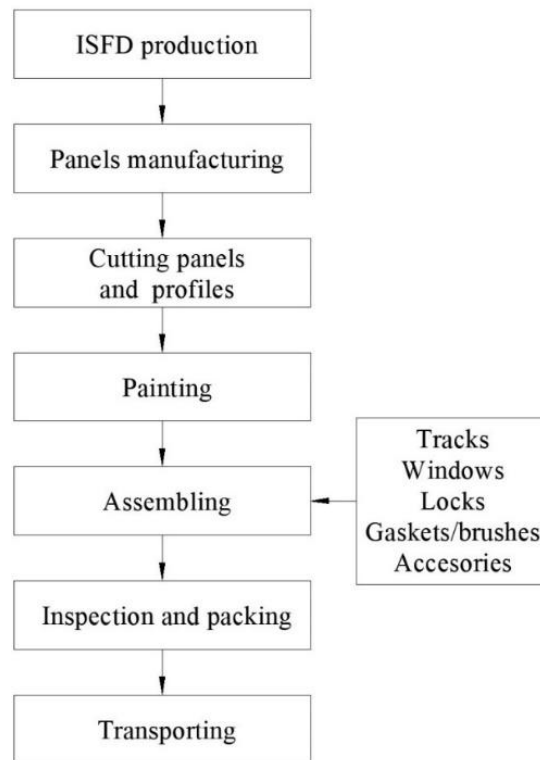
A2: The raw materials are transported to the manufacturing plant. In this case the model includes road transportation of each raw material.

A3: This module includes the manufacture of products and packaging. It has considered all the energy consumption and waste generated in the production plant.

Manufacturing process

The production process of the garage doors consists of the main stream: manufacturing panels, cutting panels and profiles, followed by painting and assembling. At this stage, components such as tracks, windows, locks, gaskets, and accessories are integrated. Then doors undergo final inspection and packing before being transported to customers.

See the manufacturing diagram below.



Construction process stage (A4-A5)

A4: This EPD does not cover the transportation module.

A5: This EPD does not cover the Installation module. The uptake of biogenic carbon (as biogenic CO₂) from packaging materials is balanced out in A3 module.

Use stage (B1-B7)

This EPD does not cover the Use stage.

End of life stage (C1-C4, D)

C1: Deconstruction, dismantling, demolition

At the end-of-life all material components after their service life are disassembled to a specific waste flow (e.g. metal, plastics and other) Demolition is assumed to be done by mobile machinery (1,1 kWh/tonne based on PCR 2019:14 Table 4).

C2: Transport of the discarded product to the processing site

It is estimated that there is no mass loss during the use of the product, therefore the end-of-life product is assumed to have the same weight as the declared product. All the end-of-life products are assumed to be sent to the closest facilities such as recycling and landfill. Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is assumed as lorry which is the most common option.

C3: Waste processing for reuse, recovery, and/or recycling

At the end-of-life all material components assigned to the material-specific disposal routes – incineration, waste recycling or disposal in landfills. Recycling rate of 95% for non-glass materials (R2, 90%) and 100% incineration with energy recovery (R1 > 60%) for plastics is included as default value in EN 17213

for metal windows and doors (yield factor = 0,9, assuming 10% material losses during recycling process).

C4: Discharge (disposal)

Based on EN 17213 for metal windows and doorsets, 5% of non-glass materials are safely disposed of in landfills at end of life. The materials are chemically inert, non-toxic, and non-leaching, meaning it poses no environmental risks when landfilled. Additionally, it does not release hazardous substances or decompose over time.

Benefits and loads beyond the system boundary (D):

In the context of end-of-life scenario D, it is assumed that metal (steel and aluminium) is recovered, subsequently fully recycled into post-consumer waste and has been modelled to avoid use of primary materials. The mass of the primary materials in the product is used to prevent double counting. Additionally, the benefit from incineration with energy recovery (R1, >60 %), reducing the demand for non-renewable energy sources such as natural gas, is evaluated.

ENVIRONMENTAL PERFORMANCE

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

The results are presented for 1m² of Side Sliding (ISFD) Garage Door. Product weight per declared unit is 21,16 kg/m²

Mandatory impact category indicators according to EN 15804:2012+A2:2019, EF 3.1

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	1,17E+02	8,29E-03	1,14E-01	5,21E+00	6,10E-03	-3,83E+01
GWP-fossil	kg CO ₂ eq.	1,17E+02	8,29E-03	1,14E-01	5,21E+00	6,60E-03	-3,77E+01
GWP-biogenic	kg CO ₂ eq.	0,00E+00	0,00E+00	0,00E+00	-9,74E-03	-5,13E-04	0,00E+00
GWP-luluc	kg CO ₂ eq.	6,24E-02	8,49E-07	5,09E-05	5,02E-04	3,78E-06	-5,73E-01
ODP	kg CFC 11 eq.	1,55E-06	1,27E-10	1,68E-09	6,62E-09	1,91E-10	-4,55E-07
AP	mol H ⁺ eq.	6,22E-01	7,48E-05	3,88E-04	5,28E-03	4,68E-05	-1,79E-01
EP-freshwater	kg P eq.	1,26E-02	2,39E-07	8,87E-06	2,50E-04	5,43E-07	-1,70E-02
EP-marine	kg N eq.	1,15E-01	3,47E-05	1,28E-04	1,59E-03	1,79E-05	-3,18E-02
EP-terrestrial	mol N eq.	1,25E+00	3,80E-04	1,39E-03	1,58E-02	1,95E-04	-3,06E-01
POCP	kg NMVOC eq.	3,98E-01	1,13E-04	5,72E-04	4,43E-03	6,98E-05	-1,25E-01
ADP-minerals&metals*	kg Sb eq.	9,04E-04	2,97E-09	3,18E-07	2,47E-05	1,05E-08	1,59E-04
ADP-fossil*	MJ	1,45E+03	1,08E-01	1,65E+00	5,85E+00	1,62E-01	-4,98E+02
WDP*	m ³	2,80E+01	2,71E-04	8,16E-03	4,13E-01	4,68E-04	-4,92E+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						

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).

A portion of data used in this EPD is based on data derived from a 3.0 version of the Emission Factor (EF) database. The use of the older EF version was assessed and determined to yield results that are either identical or conservative in comparison to those that would be obtained using the current EF version 3.1.

Additional mandatory and voluntary impact category indicators, EF 3.1

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1,17E+02	8,29E-03	1,14E-01	5,22E+00	6,61E-03	-3,83E+01
Particulate matter	Incidence	4,41E-06	2,13E-09	1,14E-08	6,30E-08	1,07E-09	-2,68E-06
Ionizing radiation	kBq U235e	1,29E+00	4,80E-05	1,44E-03	4,72E-02	1,02E-04	-5,81E+00
Ecotoxicity (freshwater)	CTUe	1,56E+03	5,97E-03	2,34E-01	1,26E+01	1,36E-02	-5,91E+01
Human toxicity, cancer	CTUh	9,43E-08	8,52E-13	1,88E-11	7,62E-10	1,22E-12	-4,95E-08
Human tox. non-cancer	CTUh	1,67E-06	1,35E-11	1,07E-09	3,59E-08	2,80E-11	-1,44E-07
SQP (Land use related impacts/soil quality)	-	2,69E+02	7,60E-03	1,66E+00	1,19E+01	3,19E-01	-4,70E+01

Note: For additional environmental impact indicators calculations secondary data for extruded aluminium profiles and metal coated steel sheets were used instead of EPDs (S-P-13858, S-P-01921, ver. 2023), because these EPDs did not declare additional indicators.

Resource use indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	1,30E+02	6,87E-04	2,26E-02	9,61E-01	1,56E-03	-1,56E+02
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,30E+02	6,87E-04	2,26E-02	9,61E-01	1,56E-03	-1,56E+02
PENRE	MJ	1,40E+03	1,08E-01	1,65E+00	-6,80E+01	1,62E-01	-4,98E+02
PENRM	MJ	6,00E+01	0,00E+00	0,00E+00	-5,70E+01	-3,00E+00	0,00E+00
PENRT	MJ	1,46E+03	1,08E-01	1,65E+00	-1,25E+02	-2,84E+00	-4,98E+02
SM	kg	3,71E+00	4,50E-05	7,03E-04	7,30E-03	4,07E-05	1,19E+01
RSF	MJ	6,46E-03	1,18E-07	8,93E-06	3,66E-04	8,44E-07	-2,04E-03
NRSF	MJ	1,24E-21	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	2,90E+01	7,17E-06	2,44E-04	8,11E-03	1,69E-04	-1,02E+00
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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water						

Note: Option A was chosen for the calculations of the primary energy indicators. according to on Annex 3 of PCR 2019:14

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 CO₂ is set to zero.

Waste indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,57E+01	1,21E-04	2,80E-03	1,18E-01	1,79E-04	-1,09E+01
Non-hazardous waste disposed	kg	6,79E+01	1,65E-03	5,18E-02	3,58E+00	1,06E-01	-8,84E+01
Radioactive waste disposed	kg	2,21E-03	1,18E-08	3,52E-07	1,21E-05	2,48E-08	-1,55E-03

Output flow indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	4,01E+00	0,00E+00	0,00E+00	1,81E+01	0,00E+00	0,00E+00
Materials for energy recovery	kg	1,22E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	7,18E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	1,40E+01	0,00E+00	0,00E+00

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

Additional results for end-of-life 100% scenarios for modules C1-C4, D

End-of-life scenario documentation (corresponding scenarios)

Scenario parameter	Value (scenario 100% recycling)	Value (scenario 100% incineration)	Value (scenario 100% disposal)
Collection process – kg collected separately	21,16	21,16	21,16
Collection process – kg collected with mixed waste	-		
Recovery process – kg for re-use	-		
Recovery process – kg for recycling	21,16		
Recovery process – kg for energy recovery	-	21,16	
Disposal (total) – kg for final deposition	-		21,16
Scenario assumptions e.g. transportation	50 km	50 km	50 km

Note. Yield factor = 0,9 (assuming 10% of material is lost in the recovery process)

Mandatory impact category indicators according to EN 15804 (corresponding scenario 100% recycling)

Results per declared unit						
Indicator	Unit	C1	C2	C3	C4	D
GWP- total	kg CO ₂ eq.	8,29E-03	1,14E-01	6,73E-01	0,00E+00	-3,98E+01
GWP-fossil	kg CO ₂ eq.	8,29E-03	1,14E-01	6,82E-01	0,00E+00	-3,92E+01
GWP-biogenic	kg CO ₂ eq.	0,00E+00	0,00E+00	-1,03E-02	0,00E+00	0,00E+00
GWP- luluc	kg CO ₂ eq.	8,49E-07	5,09E-05	5,73E-04	0,00E+00	-6,03E-01
ODP	kg CFC 11 eq.	1,27E-10	1,68E-09	4,18E-09	0,00E+00	-4,53E-07
AP	mol H ⁺ eq.	7,48E-05	3,88E-04	3,00E-03	0,00E+00	-1,89E-01
EP-freshwater	kg P eq.	2,39E-07	8,87E-06	2,05E-04	0,00E+00	-1,80E-02
EP- marine	kg N eq.	3,47E-05	1,28E-04	1,06E-03	0,00E+00	-3,34E-02
EP-terrestrial	mol N eq.	3,80E-04	1,39E-03	7,86E-03	0,00E+00	-3,22E-01
POCP	kg NMVOC eq.	1,13E-04	5,72E-04	2,30E-03	0,00E+00	-1,31E-01
ADP-minerals & metals*	kg Sb eq.	2,97E-09	3,18E-07	1,36E-05	0,00E+00	1,64E-04
ADP-fossil*	MJ	1,08E-01	1,65E+00	4,61E+00	0,00E+00	-5,13E+02
WDP*	m ³	2,71E-04	8,16E-03	1,38E-01	0,00E+00	-5,18E+01

Mandatory impact category indicators according to EN 15804 (corresponding scenario 100% incineration)

Results per declared unit						
Indicator	Unit	C1	C2	C3	C4	D
GWP- total	kg CO ₂ eq.	8,29E-03	1,14E-01	5,03E+01	0,00E+00	-8,84E+00
GWP-fossil	kg CO ₂ eq.	8,29E-03	1,14E-01	5,04E+01	0,00E+00	-8,84E+00
GWP-biogenic	kg CO ₂ eq.	0,00E+00	-3,39E-21	-1,03E-02	0,00E+00	0,00E+00
GWP- luluc	kg CO ₂ eq.	8,49E-07	5,09E-05	3,90E-04	0,00E+00	-7,45E-04
ODP	kg CFC 11 eq.	1,27E-10	1,68E-09	1,86E-08	0,00E+00	-2,63E-07
AP	mol H ⁺ eq.	7,48E-05	3,88E-04	1,15E-02	0,00E+00	-1,04E-02
EP-freshwater	kg P eq.	2,39E-07	8,87E-06	1,57E-04	0,00E+00	-1,94E-04
EP- marine	kg N eq.	3,47E-05	1,28E-04	6,53E-03	0,00E+00	-3,73E-03
EP-terrestrial	mol N eq.	3,80E-04	1,39E-03	5,56E-02	0,00E+00	-4,02E-02
POCP	kg NMVOC eq.	1,13E-04	5,72E-04	1,40E-02	0,00E+00	-2,36E-02
ADP-minerals & metals*	kg Sb eq.	2,97E-09	3,18E-07	3,61E-06	0,00E+00	-7,73E-06
ADP-fossil*	MJ	1,08E-01	1,65E+00	9,81E+00	0,00E+00	-1,40E+02
WDP*	m ³	2,71E-04	8,16E-03	3,32E+00	0,00E+00	-6,05E-01

Mandatory impact category indicators according to EN 15804 (corresponding scenario 100% disposal)

Results per declared unit						
Indicator	Unit	C1	C2	C3	C4	D
GWP- total	kg CO ₂ eq.	8,29E-03	1,14E-01	0,00E+00	1,22E-01	0,00E+00
GWP-fossil	kg CO ₂ eq.	8,29E-03	1,14E-01	0,00E+00	1,32E-01	0,00E+00
GWP-biogenic	kg CO ₂ eq.	0,00E+00	-3,39E-21	0,00E+00	-1,03E-02	0,00E+00
GWP- luluc	kg CO ₂ eq.	8,49E-07	5,09E-05	0,00E+00	7,55E-05	0,00E+00
ODP	kg CFC 11 eq.	1,27E-10	1,68E-09	0,00E+00	3,83E-09	0,00E+00
AP	mol H ⁺ eq.	7,48E-05	3,88E-04	0,00E+00	9,36E-04	0,00E+00
EP-freshwater	kg P eq.	2,39E-07	8,87E-06	0,00E+00	1,09E-05	0,00E+00
EP- marine	kg N eq.	3,47E-05	1,28E-04	0,00E+00	3,57E-04	0,00E+00
EP-terrestrial	mol N eq.	3,80E-04	1,39E-03	0,00E+00	3,90E-03	0,00E+00
POCP	kg NMVOC eq.	1,13E-04	5,72E-04	0,00E+00	1,40E-03	0,00E+00
ADP-minerals & metals*	kg Sb eq.	2,97E-09	3,18E-07	0,00E+00	2,10E-07	0,00E+00
ADP-fossil*	MJ	1,08E-01	1,65E+00	0,00E+00	3,24E+00	0,00E+00
WDP*	m ³	2,71E-04	8,16E-03	0,00E+00	9,35E-03	0,00E+00

ADDITIONAL INFORMATION

Manufacturing energy scenario documentation

Scenario parameter	Value	Source
Electricity, high voltage, residual mix	0,64 kg CO ₂ e / kWh	Data sources: ecoinvent 3.10.1 Country: Lithuania
Electricity production, photovoltaic, 3kWp slanted-roof installation, multi-Si, panel, mounted	0,10 kg CO ₂ e / kWh	Data sources: ecoinvent 3.10.1 Country: Lithuania
Heat production, natural gas, at industrial furnace >100kW	0,28 kg CO ₂ e / kWh	Data sources: ecoinvent 3.10.1 Country: Europe
Propane, burned in building machine	0,34 kg CO ₂ e / kWh	Data sources: ecoinvent 3.10.1 Country: World
Diesel, burned in building machine	0,36 kg CO ₂ e / kWh	Data sources: ecoinvent 3.10.1 Country: World

End-of-life scenario documentation (most probable scenario)

Scenario parameter	Value
Collection process – kg collected separately	21,16
Collection process – kg collected with mixed waste	-
Recovery process – kg for re-use	-
Recovery process – kg for recycling	18,07
Recovery process – kg for energy recovery	2,03
Disposal (total) – kg for final deposition	1,06
Scenario assumptions e.g. transportation	50 km

Note. Yield factor = 0,9 (assuming 10% of material is lost in the recovery process)

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization
CPC	Central product classification
Environmental Impact Indicators (EN 15804)	
GHG	Greenhouse gas
GWP	Global Warming Potential (kg CO ₂ eq.)
GWP-fossil	Global Warming Potential from fossil sources (kg CO ₂ eq.)
GWP-biogenic	Global Warming Potential from biogenic sources (kg CO ₂ eq.)
GWP-luluc	Global Warming Potential from land use and land use change (kg CO ₂ eq.)
GWP-total	Total Global Warming Potential (kg CO ₂ eq.)
GWP-GHG	Global Warming Potential for greenhouse gases (kg CO ₂ eq.)
ODP	Ozone Depletion Potential (kg CFC-11 eq.)
AP	Acidification Potential (mol H ⁺ eq.)
EP	Eutrophication Potential
EP-freshwater	Freshwater eutrophication potential (kg P eq.)
EP-marine	Marine eutrophication potential (kg N eq.)
EP-terrestrial	Terrestrial eutrophication potential (mol N eq.)
POCP	Photochemical Ozone Creation Potential (kg NMVOC eq.)
ADP	Abiotic Depletion Potential
ADP-minerals&metals	Abiotic depletion potential for non-fossil resources (kg Sb eq.)
ADP-fossil	Abiotic depletion potential for fossil resources (MJ)
WDP	Water Deprivation Potential (m ³)
Resource Use Indicators	
PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials (MJ)
PERM	Use of renewable primary energy resources used as raw materials (MJ)
PERT	Total use of renewable primary energy resources (MJ)
PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (MJ)
PENRM	Use of non-renewable primary energy resources used as raw materials (MJ)
PENRT	Total use of non-renewable primary energy resources (MJ)
SM	Use of secondary material (kg)
RSF	Use of renewable secondary fuels (MJ)
NRSF	Use of non-renewable secondary fuels (MJ)
FW	Use of net fresh water (m ³)
Waste Indicators	
HW	Hazardous Waste (disposed) (kg)
NHW	Non-Hazardous Waste (disposed) (kg)
RW	Radioactive Waste (disposed) (kg)
Output Flow Indicators	
CFR	Components for Reuse (kg)
MR	Material for Recycling (kg)
MER	Materials for Energy Recovery (kg)
EEE	Exported Energy, Electricity (MJ)
EET	Exported Energy, Thermal (MJ)
Lifecycle Stages / Modules	
A1	Raw material supply
A2	Transport
A3	Manufacturing
A4	Transport to site

A5	Construction/Installation
B1	Use
B2	Maintenance
B3	Repair
B4	Replacement
B5	Refurbishment
B6	Operational energy use
B7	Operational water use
C1	Deconstruction/Demolition
C2	Transport to waste processing
C3	Waste processing
C4	Disposal
D	Reuse-Recovery-Recycling potential
Other Relevant Terms	
SVHC	Substances of Very High Concern
EC No.	European Community Number
MJ	Megajoule
kg	Kilogram
m ³	Cubic Meter
NMVOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO ₂ eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO ₂ eq.	Kilograms of Carbon Dioxide Equivalent
ND	Not Declared
REACH	Registration, Evaluation, Authorisation, and Restriction of Chemicals
ppm	Parts per million
PEF	Product Environmental Footprint
PPP	Polluter pays principle
EU	Europe
GLO	Global
PVC	Polyvinylchloride
EPDM	Ethylene propylene diene monomer rubber
EPS	Expandable polystyrene

REFERENCES

- a) ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.
- b) ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.
- c) ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations Principles and procedures.
- d) ISO 14021:2021: Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling).
- e) General Programme Instructions for the International EPD System version 5.0.1 (2025-02-07)
- f) EN 15804:2012+A2:2019 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.
- g) PCR 2019:14 Construction Products (EN 15804:2012+A2:2019) version 2.0.1 (2025-06-05)
- h) PCR 2019:14-c-PCR-007 Being updated - Windows and doors (EN 17213) (c-PCR to PCR 2019:14) (1.0.0) 2025-04-08
- i) EN 17213, (2020), Windows and doors - Environmental Product Declarations - Product category rules for windows and pedestrian doorsets
- j) EN 15941:2024. Sustainability of construction works – Data quality for environmental assessment of products and construction works – Selection and use of data.
- k) **OECD**. (2024). *Unlocking potential in the global scrap steel market*. Organisation for Economic Co-operation and Development.
https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/12/unlocking-potential-in-the-global-scrap-steel-market_b7014135/d7557242-en.pdf
- l) Garage doors LCA background report.
- m) Ecoinvent v3.10.1 (2024), IDEMAT (2023), Plastics Europe (2021) and One Click LCA (2024) databases.

VERSION HISTORY

Original Version of the EPD, 2025-10-08

