Environmental Product Declaration (EPD)

Declaration Code: M-EPD-RRS-GB-201

Note: This EPD is based on the model EPD Doors by BVT. The EPD becomes valid by transfer to the manufacturer by the **ift**.

Meißner GmbH
Toranlagen

Doors

Roller shutter doors and roller grilles, sectional doors and side doors

Basis:

DIN EN ISO 14025
EN 15804 + A2

Model EPD
Environmental
Product **D**eclaration

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Testing + Calibration – EN ISO/IEC 17025
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Product Certification – EN ISO/IEC 17065
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Notified Body 0757
PÜZ-Stelle BAY 18

Environmental Product Declaration (EPD)

Declaration Code: M-EPD-RRS-GB-201

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Declaration code	M-EPD-RRS-GB-201		
Product designation	Roller shutter doors and roller grilles, sectional doors and side doors		
Scope	Roller shutters and roller grilles, sectional doors and side doors for indoor and outdoor use to close off building openings in industrial, commercial, and private buildings.		
Basis	This EPD was prepared on the basis of EN ISO 14025:2011 and DIN EN 15804:2012+A2:2019. In addition, the “Allgemeiner Leitfaden zur Erstellung von Typ III Umweltproduktdeklarationen” (Guidance on preparing Type III Environmental Product Declarations) applies. The Declaration is based on the PCR documents EN 17213 “PCR for windows and doors, “PCR Part A” PCR-A-2.0:2025 and "Doors” PCR-TT-3.2:2023.		
Validity	Publication date: 03.03.2026	Last revision: 24.03.2026	Valid until 03.03.2031
	This verified model Environmental Product Declaration applies solely to the specified products and is valid for a period of five years from the date of publication in accordance with DIN EN 15804.		
LCA basis	The life cycle assessment was prepared in accordance with DIN EN ISO 14040 and DIN EN ISO 14044. Data was collected from member companies of the BVT (Verband Tore im Fachverband IVEST e.V.) and generic data from the “LCA for Experts 10” database was used as a data basis. The life cycle assessment was calculated for the life cycle considered, “from cradle to gate with options,” taking into account all upstream processes, such as raw material extraction.		
Notes	The “Conditions and Guidance on the Use of ift Test Documents” apply. The declaration holder assumes full liability for the underlying data, certificates and verifications. ift Rosenheim GmbH is not liable for manufacturer information, life cycle assessment data, and evidence.		
Assessment committee	Dr. Torsten Mielecke Chairman of Expert Committee ift-EPD and PCR		
External Verification	B. Eng. (FH) Philipp Dumproff		

1 General product information

Product definition

The EPD relates to the product group Doors and applies to:

1 m² of
Roller shutter doors and roller grilles, sectional doors and side doors made by Meißner GmbH Toranlagen

The declared unit is obtained as follows:

Product-group	Product designation	Declared unit	Weight per area
PG 1	Roller shutter doors and roller grilles, aluminium curtain	1 m²	17.0 kg/m²
PG 2	Roller shutter doors and roller grilles, polymere curtain	1 m²	21.0 kg/m²
PG 3	Sectional door	1 m²	16.3 kg/m²
PG 4	Side door	1 m²	15.2 kg/m²

Table 1: Product groups

The average unit is declared as follows:
Directly used material flows are determined using the standard size for doors (1.23 m x 2.18 m; according to EN 17213) or a representative size for gates (4.0 m x 4.0 m, typical gate format for BVT member companies) and assigned to the declared unit. All other inputs and outputs during production are assigned in their entirety to the declared unit, as they cannot be directly related to the average size.

The reference period for gates and side doors is the calendar year 2024.

The validity of the EPD is limited to the following types of design and construction features:

Product-group	Scopes of validity
PG 1	Vertically opening doors (roller doors/roller grilles) without fire or smoke protection properties. Curtain made of slats or grille sections made of aluminum or steel. Guide rails made of steel or aluminum, winding shaft, electric door drive with control/operating elements. Corrosion-protected surfaces (galvanized/anodized).
PG 2	Vertically opening doors (roller doors/roller grilles) without fire or smoke protection properties. Curtain made of polymere slats or grille sections. Guide rails made of steel or aluminum, winding shaft, electric door drive with control/operating elements. Corrosion-protected surfaces (galvanized/anodized).
PG 3	Vertically opening doors (sectional doors) without fire or smoke protection properties. Door leaf made of PU panels or aluminum profiles with thermal break. Perimeter seal around the segments and to the building structure. One row of segments with transparent infill. Without wicket door. Guide rails made of steel or aluminum, electric door operator with control/operating elements. Corrosion-protected surfaces (galvanized/anodized).
PG 4	Profile frame door with frame without fire or smoke protection properties. Thermally separated aluminum or steel profiles, opaque filling with panels (sheet steel, polyurethane), handle and multi-point lock. All surfaces powder-coated.

Table 2: Scopes of validity

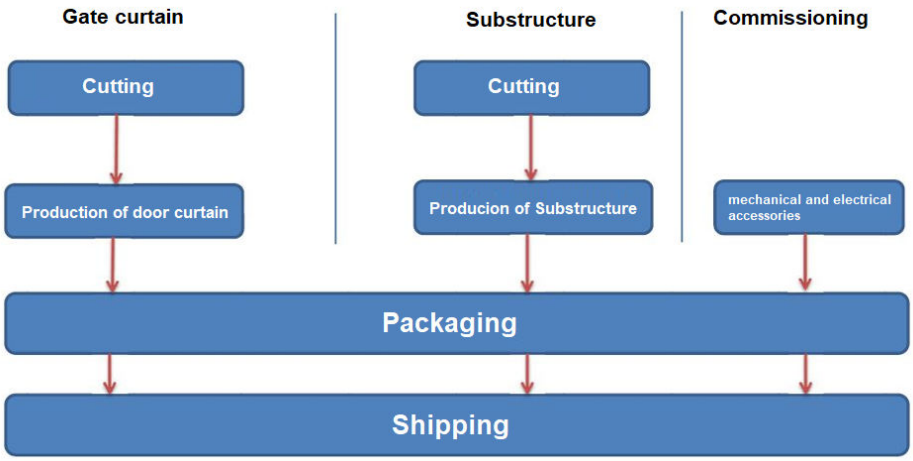
Product description

Roller shutter doors and roller grilles, sectional doors and side doors made by Meißner GmbH Toranlagen

Features and configuration according to Table 2.

For a detailed product description refer to the manufacturer specifications or the product specifications of the respective offer/quotation.

Product manufacture



Scope

Roller doors and roller grilles:
Roller doors and roller grilles for indoor and outdoor use to close off building openings in private, industrial and commercial areas.

Sectional doors:
Sectional doors for indoor and outdoor use to close building openings in private, industrial and commercial areas.

Side doors:
Side doors for lateral access to private and industrial buildings.

Additional information

For additional evidence of fitness for use or certificates of conformity, if applicable, please refer to the CE marking and the documents accompanying the product.

2 Materials used

Primary materials

The primary materials used are specified in Section 6.2 Inventory analysis (Inputs).

Declarable substances

The product contains no substances from the REACH candidate list (declaration dated 24. March 2026).

All relevant safety data sheets are available from Meißner GmbH Toranlagen

3 Construction process stage

Processing recommendations, installation

Observe the instructions for mounting/installation, operation, maintenance and disassembly, provided by the manufacturer. See www.meissner-gmbh.de

4 Use stage

Emissions to the environment

No emissions to indoor air, water or soil are known. There may be VOC emissions.

Reference service life (RSL)

The RSL information was provided by the manufacturer. The RSL shall be specified under defined reference in-use conditions and shall refer to the declared technical and functional performance of the product within the building. It shall be established in accordance with any specific rules given in European product standards, or, if not available, in accordance with a c-PCR. It shall also take into account ISO 15686-1, -2, -7 and -8. Where European product standards or a c-PCR provide guidance on deriving the RSL, such guidance shall have priority.
If it is not possible to determine the service life as the RSL in accordance with ISO 15686, the BBSR table “Nutzungsdauer von Bauteilen zur Lebenszyklusanalyse nach BNB” (service life of building components for life cycle assessment in accordance with the sustainable construction evaluation system) can be used. For further information and explanations refer to www.nachhaltigesbauen.de.

For this EPD the following applies:
For a “Cradle to gate with options” EPD with the modules C1-C4 and module D (A1-A3 + C + D and one or more additional modules from A4 to B7), the reference service life (RSL) can only be stated if the reference in-use conditions are specified.

- The service life of roller doors and sectional doors is optionally specified as 30 years based on BBSR table values from the category ‘Interior doors; doors: roller doors, fire doors’ (Ref. No. 344.117.25).
- The service life of side entrance doors is optionally specified as >50 years according to the BBSR table (Ref. No. 334.115.25; exterior doors, standard metal doors).

The service life is dependent on the characteristics of the product and the in-use conditions. The in-use conditions described in the EPD are applicable, in particular the characteristics listed below:

- Outdoor environment: extreme climatic influences may have a negative impact on the service life
- Indoor environment: Persistently high humidity and contact with corrosive media can have a negative effect on service life.

The service life applies solely to the characteristics specified in this EPD or the corresponding references.
The RSL does not reflect the actual life span, which is usually determined by the service life and the refurbishment of a building. It does not give any information on the useful life, warranty referring to performance characteristics or guarantees.

5 End-of-life stage

Possible end-of-life stages

Roller shutter doors and roller grilles, sectional doors and side doors are shipped to central collection points. There the products are generally shredded and sorted into their original constituents. The end-of-life stage depends on the site where the products are used and is therefore subject to the local regulations. Observe the locally applicable regulatory requirements.

In this EPD, the modules for reuse are modelled in accordance with the requirements of EN 17213.
Metals and plastics are recycled or thermally recovered to a certain extent. Residual fractions are sent to landfill.

Disposal routes

The LCA includes the average disposal routes.

All life cycle scenarios are detailed in the Annex.

6 Life Cycle Assessment (LCA)

Environmental product declarations are based on life cycle assessments (LCAs) which use material and energy flows for the calculation and subsequent representation of environmental impacts.

Such life cycle assessments were developed for Roller shutter doors and roller grilles, sectional doors and side doors, serving as the basis. The LCAs are in conformity with the requirements set out in DIN EN 15804 and the international standards DIN EN ISO 14040, DIN EN ISO 14044 and EN ISO 14025 as well as based on ISO 21930.

The LCA is representative of the products presented in the Declaration and the specified reference period.

6.1 Definition of goal and scope

Goal

The goal of the LCA is to demonstrate the environmental impacts of the products. In accordance with DIN EN 15804, the environmental impacts covered by this Environmental Product Declaration are presented for the entire product life cycle in the form of basic information. Apart from these, no other environmental impacts are specified.

Data quality, data availability and geographical and time-related system boundaries

The specific data comes exclusively from the 2024 financial year. It was collected from BVT member companies and comes partly from business records and partly from directly read measurements. Primary data for energy, water and packaging consumption, as well as for auxiliary materials and waste/offcuts, was collected from the companies' own data management systems and/or through specific measurements. Secondary data from literature sources was used in some cases for energy and scrap quantities as well as waste recycling (routes). Data for energy, water and packaging costs as well as for auxiliary materials and waste/scraps was subjected to a plausibility check (in some cases through on-site visits) and checked for validity.

The generic data selected are as accurate as possible in terms of geographical reference. If no country-specific datasets are available or regional reference cannot be established, European or global datasets are used.

Generic data comes from the Professional Database and Building Materials Database of the 'LCA for Experts 10' software. Both databases were last updated in February 2026. Older data also comes from this database and is no more than three years old. No other generic data was used for the calculation.

Generic data is selected as accurately as possible in terms of geographical reference. European data sets are used as a priority. If no European data sets are available, German data sets are used.

Data gaps were either replaced by comparable data or conservative assumptions, or truncated in accordance with the 1% rule.

The software system for holistic life cycle assessment 'LCA for Experts' version 10.9.4.13 with database version 2025.2 was used to model the life cycle. The LCA was evaluated using the EF3.1 impact assessment method.

The data quality complies with the requirements of EN15941:2024-10.

Scope / system boundaries

The system boundaries refer to the supply of raw materials and purchased parts, manufacture/production, use and end-of-life stage of Roller shutter doors and roller grilles, sectional doors and side doors. Additional data from upstream suppliers (EPDs) was taken into account. The data sources used are listed in the background report.

Cut-off criteria

All data from the operational data collection was taken into account, i.e., all input and output materials used, the thermal energy used, and the electricity consumption.

However, the scope is limited to production-related data. Building and plant components that are not relevant to product manufacturing were excluded.

The transport route for raw materials, auxiliary materials, and packaging in Module A2 was taken into account and mapped using the following standard scenario:

Means of transport, capacity utilization, transported distance
Transport to the factory with 34-40 t trucks (Euro 0-6 mix, GLO), diesel, 27 t payload, 61% (according to Sphera data set) capacity utilization, 800 km or manufacturer's specifications for the respective distance

In addition to transport routes for preliminary products, transport routes for waste were also taken into account. The transport of waste generated in A3 was modeled using the following standard scenario:

Means of transport, capacity utilization, transported distance
Transport to collection point with 34-40 t truck (Euro 0-6 mix, GLO), diesel, 27 t payload, 50% capacity utilization, 100 km or manufacturer's specifications for the respective distance (1)

The criteria for not considering inputs and outputs according to DIN EN 15804 are met. Based on the data analysis, it can be assumed that the neglected processes per life cycle stage do not exceed 1% of the mass or primary energy. In total, 5% of the energy and mass input is complied with for the neglected processes. Material and energy flows of less than 1% were also taken into account for the calculation of the life cycle assessment.

6.2 Inventory analysis

Goal

All material and energy flows are described below. The processes covered are presented as input and output parameters and refer to the declared unit.

Life cycle stages

The Annex shows the entire life cycle of Roller shutter doors and roller grilles, sectional doors and side doors. The “Product stage” (A1 - A3), “Construction process stage” (A4 - A5), “Use stage” (B2, B3, B5 - B7), “End-of-life stage” (C1 - C4) and the “Benefits and loads beyond the system boundaries” (D) are considered.

Benefits

The below benefits have been defined in accordance with DIN EN 15804:

- Benefits from recycling
- Benefits (thermal and electrical) from incineration

Allocation of co-products

No allocations of co-products are applied. Allocations (i.e., the assignment of environmental impacts of a process to multiple products) may have been made in the background data sets used in the “LCA for Experts” database, which are stored in the associated individual documentation.

Allocations for reuse, recycling and recovery

If the products are reused or recycled and recovered during manufacture (rejected parts), the elements are separated into individual materials as necessary and then partially shredded/broken up.
The system boundaries were drawn after disposal, where the end of their waste properties was reached.

Allocations beyond life cycle boundaries

The current market situation was taken into account when using recycled materials in production. At the same time, recycling potential was considered, reflecting the economic value of the product after processing (recyclate).
The system boundary for recycled material was drawn at the point of collection.

Secondary material

The use of secondary materials in Module A3 was examined. Secondary materials are not used.

Inputs

The LCA includes the following production-relevant inputs per 1 m² of Roller shutter doors and roller grilles, sectional doors and side doors:

Energy

The following data sets were used for the input of electrical and thermal energy (market-based approach):

Dataset	GWP-t	Unit
RER: Residual Mix (ift)	6,19E-01	kgCO_2-Äqv./kWh
DE: Electricity from photovoltaic Sphera	3,00E-02	kgCO_2-Äqv./kWh
DE: Thermal energy from biomass (solid) Sphera	4,53E-03	kgCO_2-Äqv./MJ
DE: Thermal energy from natural gas Sphera	7,14E-02	kgCO_2-Äqv./MJ

Table 3: Greenhouse gas emissions from the use of electricity/gas in the manufacturing phase

Water

The individual process steps involved in production result in the following water consumption:

- PG 1: 1.2 litres per m²
- PG 2: 0 l per m²
- PG 3: 12.1 l per m²
- PG 4: 0.02 l per m²

The fresh water consumption reported in Chapter 6.3 arises (among other things) from the process chain of the preliminary products, cooling measures during metalworking and battery maintenance of warehouse vehicles.

Raw material/pre-products

The chart below shows the share of raw materials/pre-products in %.

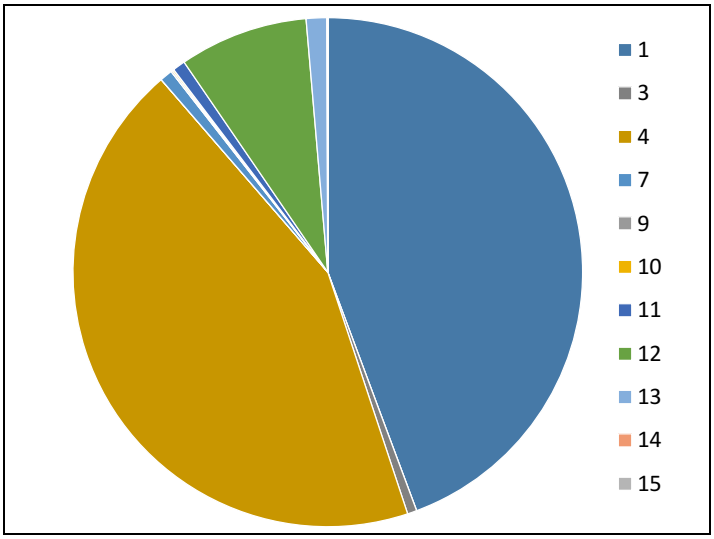


Figure 1: Percentage of individual materials per declared unit PG 1

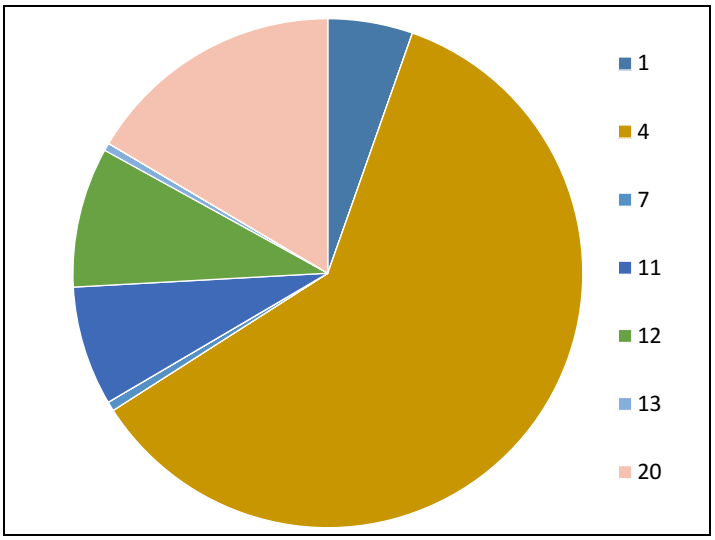


Figure 2: Percentage of individual materials per declared unit, PG 2

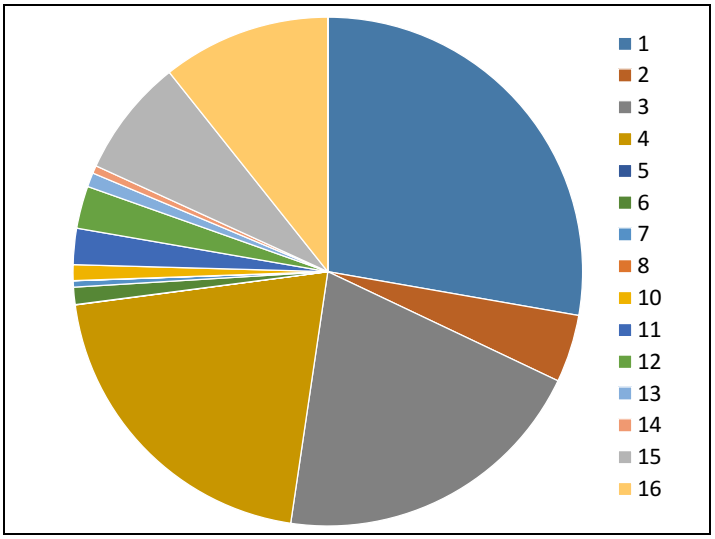


Figure 3: Percentage of individual materials per declared unit, PG 3

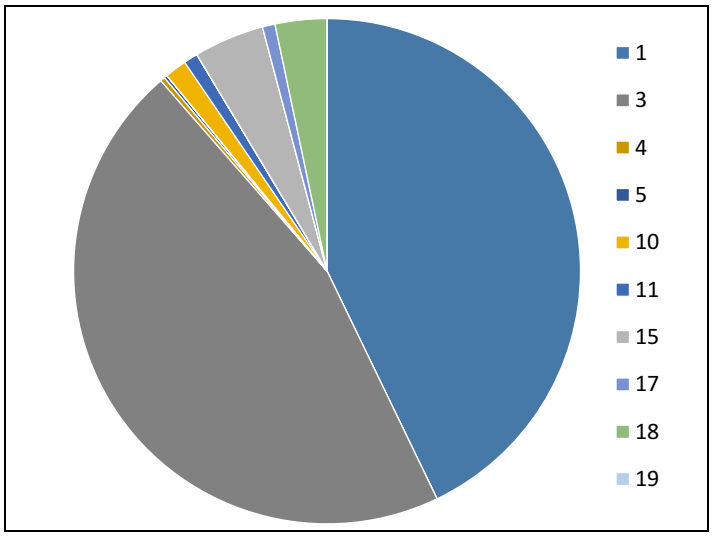


Figure 4: Percentage of individual materials per declared unit, PG 4

Nr.	Material	Mass in %			
		PG 1	PG 2	PG 3	PG 4
1	Aluminium profile	44.4	5.4	27.8	42.9
2	Aluminium sheet	0	0	4.3	0
3	Steel sheet	< 1	0	20.3	45.8
4	Steel profile	43.8	60.6	20.6	< 1
5	Stainless steel	0	0	< 1	< 1
6	PVC	0	0	1.1	0
7	Polyamide	< 1	< 1	< 1	0
8	Polyethylene	0	0	< 1	0
9	Primers	< 1	0	0	0
10	Powder coatings	< 1	0	1.0	1.4
11	Seals	< 1	7.6	2.3	< 1
12	Drive	8.2	8.9	2.7	0
13	Control	1.3	< 1	< 1	0
14	(Motor) cables	< 1	0	< 1	0
15	Insulation	< 1	0	7.5	4.5
16	Glazing	0	0	10.7	< 1
17	Bands	0	0	0	< 1
18	Locking	0	0	0	3.3
19	Brass	0	0	0	< 1
20	Plastic slats	0	16.5	0	0

Table 4: Darstellung der Einzelmaterialien in %

Ancillary materials and consumables

The following auxiliary and operating materials are required:

- PG1: 65 g per m²
- PG2: 69 g per m²
- PG3: 9 g per m²
- PG4: 29 g per m²

Product packaging

The amounts used for product packaging are as follows:

Nr.	Material	Mass in kg per m²			
		PG 1	PG 2	PG 3	PG 4
1	Foil and protective covers	0.21	0.22	8.23E-02	0.11
2	Wood	2.70	2.90	1.00	0.22
3	Cardboard	0.29	0.31	0	0.69
4	Polyester strapping	0	0	2.49E-03	0
5	Adhesive tape	0	0	3.32E-04	5.18E-03
6	Styrofoam	4.57E-02	4.93E-02	0	0
7	Reusable packaging	0	0	1.67E-01	0

Table 4: Presentation of the packaging in kg per declared unit

Biogenic carbon content
In accordance with EN 16449, the amounts of biogenic carbon are as follows:

Nr.	component	Content in kg C per m²
PG 1	In the product	0
	In the associated packaging	1.09
PG 2	In the product	0
	In the associated packaging	1.16
PG 3	In the product	0
	In the associated packaging	0.36
PG 4	In the product	0
	In the associated packaging	0.32

Note: 1 kg C corresponds to $^{44}/_{12}$ kg CO_2 eq. of biogenic carbon.
Table 5: Biogenic carbon content in product and packaging at the factory gate

GWP-b values resulting from the sequestration and release of biogenic carbon were calculated specifically for each life cycle module and are listed in Table 6. The overall results table presented in this document, issued by "LCA for Experts", has not been changed.

Binding and release of CO_2 emissions in kg CO_2-eqv. / m²						
Component		A1-A3	A5	C3	C4	D
PG 1	product	0	0	0	0	0
	packaging	- 3.98	+ 3.98	0	0	0
PG 2	product	0	0	0	0	0
	packaging	- 4.27	+ 4.27	0	0	0
PG 3	product	0	0	0	0	0
	packaging	- 1.33	+ 1.33	0	0	0
PG 4	product	0	0	0	0	0
	packaging	- 1.77	+ 1.77	0	0	0

Note: 1 kg C corresponds to $^{44}/_{12}$ kg CO_2-eqv. of biogenic carbon

Table 6: Binding and release of biogenic CO_2 emissions in kg CO_2-eqv. from product and packaging per life cycle module

Outputs

The LCA includes the following production-relevant outputs per 1 m² of Roller shutter doors and roller grilles, sectional doors and side doors:

Waste
Secondary raw materials were included in the benefits.
See Section 6.3 Impact assessment.

Waste water
The manufacture does not produce any waste water.

6.3 Impact assessment

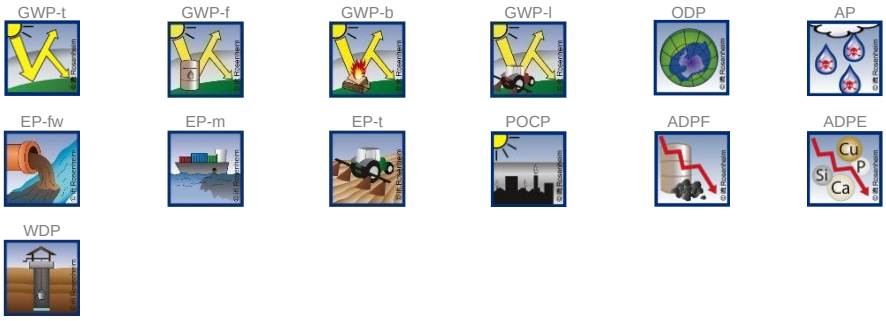
Goal

The impact assessment covers both inputs and outputs. The impact categories applied are named below:

Core indicators

The models for impact assessment were applied as described in DIN EN 15804+A2.
The impact categories presented in the EPD as core indicators are as follows:

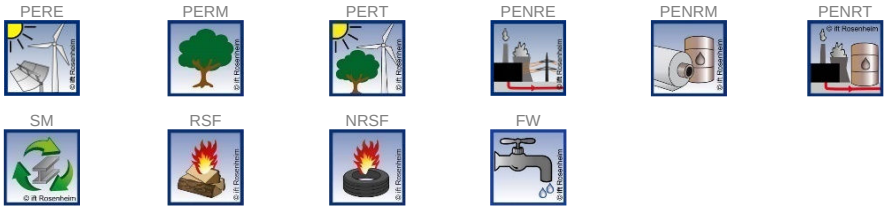
- Climate change – total (GWP-t)
- Climate change – fossil (GWP-f)
- Climate change – biogenic (GWP-b)
- Climate change - land use and land use change (GWP-l)
- Ozone depletion (ODP)
- Acidification (AP)
- Eutrophication aquatic freshwater (EP-fw)
- Eutrophication aquatic marine (EP-m)
- Eutrophication terrestrial (EP-t)
- Photochemical ozone creation (POCP)
- Depletion of abiotic resources - fossil fuels (ADPF)
- Depletion of abiotic resources - minerals and metals (ADPE)
- Water use (WDP)



Use of resources

The models for impact assessment were applied as described in DIN EN 15804-A2.
The following parameters for the use of resources are shown in the EPD:

- Renewable primary energy as energy source (PERE)
- Renewable primary energy for material use (PERM)
- Total use of renewable primary energy (PERT)
- Non-renewable primary energy as energy resource (PENRE)
- Non-renewable primary energy for material use (PENRM)
- Total use of non-renewable primary energy (PENRT)
- Use of secondary materials (SM)
- Use of renewable secondary fuels (RSF)
- Use of non-renewable secondary fuels (NRSF)
- Net use of freshwater resources (FW)

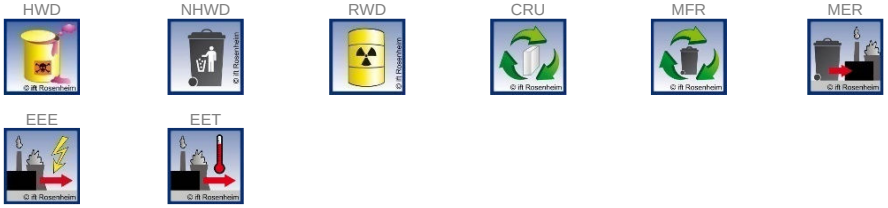


Waste

The waste generate during the production of 1 m² of Roller shutter doors and roller grilles, sectional doors and side doors is evaluated and shown separately for the fractions trade wastes, special wastes and radioactive wastes. Since waste handling is modelled within the system boundaries, the amounts shown refer to the deposited wastes. A portion of the waste indicated is generated during the manufacture of the pre-products.

The models for impact assessment were applied as described in DIN EN 15804-A2.
The waste categories and indicators for output material flows presented in the EPD are as follows:

- Hazardous waste disposed (HWD)
- Non-hazardous waste disposed (NHWD)
- Radioactive waste disposed (RWD)
- Components for reuse (CRU)
- Materials for recycling (MFR)
- Materials for energy recovery (MER)
- Exported electrical energy (EEE)
- Exported thermal energy (EET)



Additional environmental impact indicators

The models for impact assessment were applied as described in DIN EN 15804-A2.
The additional impact categories presented in the EPD are as follows:

- Particulate matter emissions (PM)
- Ionising radiation, human health (IRP)
- Ecotoxicity – freshwater (ETP-fw)
- Human toxicity - cancer effect (HTP-c)
- Human toxicity - non-cancer effect (HTP-nc)
- Land use related impacts / soil quality (SQP)

Uncertainty penalties

In this EPD, some indicator values are subject to the following safety margins in accordance with the ÖKOBAUDAT manual:

- PG 1: 30%
- PG 2: 30%
- PG 3: 30%
- PG 4: 30%

These safety margins are intended to conservatively estimate the environmental impacts under worst-case assumptions. The indicators affected and the reasons for the margin levels are documented in the background report.

Results per 1 m² of Roller shutter doors and roller grilles, aluminium curtain, PG 1

Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Core indicators															
GWP-t	kg CO_2 eq.	219.27	0.81	6.07	ND	2.76E-02	0.00	ND	0.00	4.84	0.00	0.00	0.10	1.95	1.69E-02	-53.64
GWP-f	kg CO_2 eq.	221.88	0.78	1.35	ND	2.76E-02	0.00	ND	0.00	4.78	0.00	0.00	9.61E-02	1.94	1.69E-02	-53.35
GWP-b	kg CO_2 eq.	-3.78	2.45E-02	4.72	ND	7.06E-05	0.00	ND	0.00	3.78E-02	0.00	0.00	3.03E-03	7.33E-03	-4.21E-05	-0.19
GWP-l	kg CO_2 eq.	1.16	7.94E-03	1.57E-03	ND	7.07E-06	0.00	ND	0.00	1.58E-02	0.00	0.00	9.79E-04	3.07E-03	6.93E-05	-0.10
ODP	kg CFC-11 eq.	1.07E-06	1.50E-13	1.03E-11	ND	8.74E-14	0.00	ND	0.00	1.09E-10	0.00	0.00	1.85E-14	2.12E-11	4.71E-14	-6.64E-10
AP	mol H^+ eq.	1.10	1.16E-03	2.12E-03	ND	3.98E-05	0.00	ND	0.00	1.05E-02	0.00	0.00	1.42E-04	2.31E-03	1.19E-04	-0.19
EP-fw	kg P eq.	2.78E-02	2.09E-06	1.02E-06	ND	3.93E-08	0.00	ND	0.00	1.02E-05	0.00	0.00	2.57E-07	2.00E-06	2.51E-08	-3.42E-05
EP-m	kg N eq.	0.22	4.75E-04	5.81E-04	ND	8.37E-06	0.00	ND	0.00	2.52E-03	0.00	0.00	5.77E-05	5.77E-04	3.12E-05	-4.29E-02
EP-t	mol N eq.	2.17	4.95E-03	7.61E-03	ND	9.39E-05	0.00	ND	0.00	2.81E-02	0.00	0.00	6.03E-04	6.86E-03	3.41E-04	-0.47
POCP	kg NMVOC eq.	0.59	1.03E-03	1.53E-03	ND	3.82E-05	0.00	ND	0.00	6.24E-03	0.00	0.00	1.26E-04	1.44E-03	9.35E-05	-0.13
ADPF*²	MJ	2985.97	10.00	10.34	ND	0.62	0.00	ND	0.00	97.76	0.00	0.00	1.23	19.11	0.22	-622.29
ADPE*²	kg Sb eq.	8.23E-03	5.16E-08	9.58E-08	ND	1.90E-09	0.00	ND	0.00	9.96E-07	0.00	0.00	6.36E-09	1.92E-07	1.05E-09	-1.79E-04
WDP*²	m^3 world eq. deprived	33.04	3.87E-03	0.88	ND	1.47E-03	0.00	ND	0.00	1.20	0.00	0.00	4.77E-04	0.34	1.82E-03	-4.17
Use of resources															
PERE	MJ	1353.65	0.76	72.73	ND	4.11E-02	0.00	ND	0.00	66.82	0.00	0.00	9.32E-02	12.92	4.28E-02	-323.15
PERM	MJ	51.14	0.00	-51.14	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERT	MJ	1404.80	0.76	21.58	ND	4.11E-02	0.00	ND	0.00	66.82	0.00	0.00	9.32E-02	12.92	4.28E-02	-323.15
PENRE	MJ	2984.84	10.00	24.72	ND	0.62	0.00	ND	0.00	97.76	0.00	0.00	1.23	31.21	0.22	-622.29
PENRM	MJ	20.87	0.00	-11.07	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	-9.31	0.00	0.00
PENRT	MJ	3005.71	10.00	13.66	ND	0.62	0.00	ND	0.00	97.76	0.00	0.00	1.23	21.90	0.22	-622.29
SM	kg	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	MJ	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NRSF	MJ	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FW	m^3	1.64	3.89E-04	2.26E-02	ND	6.01E-05	0.00	ND	0.00	5.20E-02	0.00	0.00	4.78E-05	1.24E-02	5.34E-05	-0.20
Waste categories															
HWD	kg	0.38	4.23E-10	1.20E-08	ND	1.00E-10	0.00	ND	0.00	1.28E-07	0.00	0.00	5.20E-11	2.47E-08	4.85E-11	-4.43E-07
NHWD	kg	41.35	1.42E-03	0.21	ND	3.77E-04	0.00	ND	0.00	7.57E-02	0.00	0.00	1.74E-04	3.64E-02	1.11	-13.09
RWD	kg	0.11	1.96E-05	1.42E-03	ND	5.69E-06	0.00	ND	0.00	1.54E-02	0.00	0.00	2.42E-06	2.98E-03	2.35E-06	-2.81E-02
Output material flows															
CRU	kg	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MFR	kg	4.02	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	15.80	0.00	0.00
MER	kg	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEE	MJ	1.42	0.00	7.90	ND	1.05E-02	0.00	ND	0.00	0.00	0.00	0.00	0.00	1.32	0.00	0.00
EET	MJ	2.58	0.00	14.20	ND	1.88E-02	0.00	ND	0.00	0.00	0.00	0.00	0.00	3.02	0.00	0.00

Key:
GWP-t – climate change - total **GWP-f** – climate change - fossil **GWP-b** – climate change - biogenic **GWP-l** – climate change - land use and land use change **ODP** – ozone depletion **AP** - acidification **EP-fw** - eutrophication - aquatic freshwater **EP-m** - eutrophication - aquatic marine **EP-t** - eutrophication - terrestrial **POCP** - photochemical ozone formation **ADPF*²** - depletion of abiotic resources – fossil fuels **ADPE*²** - depletion of abiotic resources – minerals and metals **WDP*²** – water use **PERE** - use of renewable primary energy **PERM** - use of renewable primary energy resources used as raw materials **PERT** - total use of renewable primary energy **PENRE** - use of non-renewable primary energy **PENRM** - use of non-renewable primary energy resources used as raw materials **PENRT** - total use of non-renewable primary energy **SM** - use of secondary materials **RSF** - use of renewable secondary fuels **NRSF** - use of non-renewable secondary fuels **FW** - net use of freshwater **HWD** - hazardous waste disposed **NHWD** - non-hazardous waste disposed **RWD** - radioactive waste disposed **CRU** - components for reuse **MFR** - materials for recycling **MER** - materials for energy recovery **EEE** - exported electrical energy **EET** - exported thermal energy
ND – Not declared

Results per 1 m² of Roller shutter doors and roller grilles, aluminium curtain, PG 1																
	Unit	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Additional environmental impact indicators																
PM	Disease incidence	1.14E-05	1.04E-08	1.60E-08	ND	3.51E-10	0.00	ND	0.00	8.68E-08	0.00	0.00	1.28E-09	1.83E-08	1.48E-09	-2.94E-06
IRP*[1]	kBq U235 eq.	11.49	2.78E-03	0.23	ND	6.89E-04	0.00	ND	0.00	2.55	0.00	0.00	3.43E-04	0.49	2.60E-04	-2.88
ETP-fw*[2]	CTUe	9259.51	12.90	2.29	ND	0.41	0.00	ND	0.00	16.48	0.00	0.00	1.59	3.28	0.17	-175.12
HTP-c*[2]	CTUh	4.62E-07	1.74E-10	2.08E-10	ND	7.31E-12	0.00	ND	0.00	1.55E-09	0.00	0.00	2.15E-11	3.09E-10	2.95E-12	-4.52E-08
HTP-nc*[2]	CTUh	1.97E-06	9.75E-09	6.84E-09	ND	1.30E-10	0.00	ND	0.00	3.28E-08	0.00	0.00	1.20E-09	6.76E-09	1.10E-10	-2.53E-07
SQP*[2]	Dimensionless.	1623.50	4.38	3.93	ND	2.70E-02	0.00	ND	0.00	39.26	0.00	0.00	0.54	7.61	5.47E-02	-79.37

Key:
PM – particulate matter emissions **IRP*[1]** – ionising radiation – human health **ETP-fw*[2]** - ecotoxicity – aquatic freshwater **HTP-c*[2]** - human toxicity potential – cancer effect **HTP-nc*[2]** - human toxicity potential – non-cancer effect **SQP*[2]** – land use related impacts / soil quality
ND – Not declared

Disclaimers

*1 This impact category deals mainly with the eventual impact of low-dose ionising 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 ionising radiation from the soil, from radon and from some building materials is also not measured by this indicator

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

Results per 1 m² of Roller shutter doors and roller grilles, polymere curtain, PG 2

	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Core indicators																
GWP-t	kg CO_2 eq.	96.83	0.98	6.47	ND	0.24	0.00	ND	0.00	4.84	0.00	0.00	0.12	16.00	2.10E-02	-29.90
GWP-f	kg CO_2 eq.	100.93	0.94	1.40	ND	0.24	0.00	ND	0.00	4.78	0.00	0.00	0.12	15.99	2.09E-02	-29.81
GWP-b	kg CO_2 eq.	-4.47	2.97E-02	5.06	ND	5.90E-04	0.00	ND	0.00	3.78E-02	0.00	0.00	3.75E-03	9.69E-03	-5.21E-05	-5.96E-02
GWP-l	kg CO_2 eq.	0.37	9.62E-03	1.59E-03	ND	6.50E-05	0.00	ND	0.00	1.58E-02	0.00	0.00	1.21E-03	4.15E-03	8.57E-05	-3.07E-02
ODP	kg CFC-11 eq.	6.38E-07	1.82E-13	1.03E-11	ND	9.67E-13	0.00	ND	0.00	1.09E-10	0.00	0.00	2.29E-14	2.85E-11	5.82E-14	-1.67E-10
AP	mol H^+ eq.	0.45	1.40E-03	2.20E-03	ND	2.42E-04	0.00	ND	0.00	1.05E-02	0.00	0.00	1.76E-04	6.89E-03	1.48E-04	-7.39E-02
EP-fw	kg P eq.	1.55E-02	2.54E-06	1.03E-06	ND	2.18E-07	0.00	ND	0.00	1.02E-05	0.00	0.00	3.19E-07	2.83E-06	3.11E-08	-1.55E-05
EP-m	kg N eq.	7.94E-02	5.75E-04	6.06E-04	ND	6.24E-05	0.00	ND	0.00	2.52E-03	0.00	0.00	7.15E-05	1.95E-03	3.86E-05	-1.74E-02
EP-t	mol N eq.	0.85	6.01E-03	7.97E-03	ND	6.97E-04	0.00	ND	0.00	2.81E-02	0.00	0.00	7.46E-04	2.77E-02	4.21E-04	-0.19
POCP	kg NMVOC eq.	0.25	1.25E-03	1.60E-03	ND	2.38E-04	0.00	ND	0.00	6.24E-03	0.00	0.00	1.56E-04	5.02E-03	1.16E-04	-5.45E-02
ADPF*²	MJ	1562.21	12.10	10.47	ND	3.77	0.00	ND	0.00	97.76	0.00	0.00	1.52	27.17	0.27	-312.48
ADPE*²	kg Sb eq.	5.07E-03	6.25E-08	9.65E-08	ND	1.47E-08	0.00	ND	0.00	9.96E-07	0.00	0.00	7.88E-09	2.61E-07	1.29E-09	-1.17E-04
WDP*²	m^3 world eq. deprived	6.51	4.69E-03	0.93	ND	1.63E-02	0.00	ND	0.00	1.20	0.00	0.00	5.90E-04	1.79	2.26E-03	-1.32
Use of resources																
PERE	MJ	379.92	0.92	77.53	ND	0.44	0.00	ND	0.00	66.82	0.00	0.00	0.12	17.03	5.29E-02	-58.13
PERM	MJ	54.81	0.00	-54.81	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERT	MJ	434.73	0.92	22.72	ND	0.44	0.00	ND	0.00	66.82	0.00	0.00	0.12	17.03	5.29E-02	-58.13
PENRE	MJ	1327.68	12.10	25.60	ND	3.77	0.00	ND	0.00	97.76	0.00	0.00	1.52	235.59	0.27	-312.48
PENRM	MJ	180.40	0.00	-11.64	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	-160.32	0.00	0.00
PENRT	MJ	1508.09	12.10	13.96	ND	3.77	0.00	ND	0.00	97.76	0.00	0.00	1.52	75.27	0.27	-312.48
SM	kg	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	MJ	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NRSF	MJ	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FW	m^3	0.39	4.71E-04	2.39E-02	ND	6.73E-04	0.00	ND	0.00	5.20E-02	0.00	0.00	5.93E-05	4.80E-02	6.62E-05	-6.31E-02
Waste categories																
HWD	kg	0.50	5.11E-10	1.20E-08	ND	1.02E-09	0.00	ND	0.00	1.28E-07	0.00	0.00	6.45E-11	3.28E-08	6.01E-11	-7.58E-08
NHWD	kg	6.53	1.72E-03	0.22	ND	4.26E-03	0.00	ND	0.00	7.57E-02	0.00	0.00	2.17E-04	0.33	1.37	-2.22
RWD	kg	3.76E-02	2.38E-05	1.43E-03	ND	5.49E-05	0.00	ND	0.00	1.54E-02	0.00	0.00	2.99E-06	3.78E-03	2.91E-06	-8.70E-03
Output material flows																
CRU	kg	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MFR	kg	2.87	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	15.00	0.00	0.00
MER	kg	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEE	MJ	2.92	0.00	8.45	ND	0.13	0.00	ND	0.00	0.00	0.00	0.00	0.00	19.10	0.00	0.00
EET	MJ	5.27	0.00	15.20	ND	0.23	0.00	ND	0.00	0.00	0.00	0.00	0.00	43.90	0.00	0.00

Key:
GWP-t – climate change - total **GWP-f** – climate change - fossil **GWP-b** – climate change - biogenic **GWP-l** – climate change - land use and land use change **ODP** – ozone depletion **AP** - acidification **EP-fw** - eutrophication - aquatic freshwater **EP-m** - eutrophication - aquatic marine **EP-t** - eutrophication - terrestrial **POCP** - photochemical ozone formation **ADPF*²** - depletion of abiotic resources – fossil fuels **ADPE*²** - depletion of abiotic resources – minerals and metals **WDP*²** – water use **PERE** - use of renewable primary energy **PERM** - use of renewable primary energy resources used as raw materials **PERT** - total use of renewable primary energy **PENRE** - use of non-renewable primary energy **PENRM** - use of non-renewable primary energy resources used as raw materials **PENRT** - total use of non-renewable primary energy **SM** - use of secondary materials **RSF** - use of renewable secondary fuels **NRSF** - use of non-renewable secondary fuels **FW** - net use of freshwater **HWD** - hazardous waste disposed **NHWD** - non-hazardous waste disposed **RWD** - radioactive waste disposed **CRU** - components for reuse **MFR** - materials for recycling **MER** - materials for energy recovery **EEE** - exported electrical energy **EET** - exported thermal energy
ND – Not declared

Results per 1 m² of Roller shutter doors and roller grilles, polymere curtain, PG 2

	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Additional environmental impact indicators																
PM	Disease incidence	4.13E-06	1.26E-08	1.65E-08	ND	2.09E-09	0.00	ND	0.00	8.68E-08	0.00	0.00	1.59E-09	4.50E-08	1.85E-09	-1.06E-06
IRP*[1]	kBq U235 eq.	4.02	3.37E-03	0.23	ND	6.08E-03	0.00	ND	0.00	2.55	0.00	0.00	4.25E-04	0.62	3.22E-04	-1.29
ETP-fw*[2]	CTUe	2003.95	15.60	2.35	ND	2.42	0.00	ND	0.00	16.48	0.00	0.00	1.96	5.38	0.21	-54.50
HTP-c*[2]	CTUh	4.86E-07	2.11E-10	2.13E-10	ND	4.65E-11	0.00	ND	0.00	1.55E-09	0.00	0.00	2.65E-11	5.20E-10	3.65E-12	-3.38E-08
HTP-nc*[2]	CTUh	1.92E-06	1.18E-08	7.11E-09	ND	8.42E-10	0.00	ND	0.00	3.28E-08	0.00	0.00	1.48E-09	1.46E-08	1.37E-10	-3.55E-08
SQP*[2]	Dimensionless.	1430.69	5.30	3.95	ND	0.29	0.00	ND	0.00	39.26	0.00	0.00	0.67	10.41	6.77E-02	-19.78

Key:
PM – particulate matter emissions **IRP*[1]** – ionising radiation – human health **ETP-fw*[2]** - ecotoxicity – aquatic freshwater **HTP-c*[2]** - human toxicity potential – cancer effect **HTP-nc*[2]** - human toxicity potential – non-cancer effect **SQP*[2]** – land use related impacts / soil quality
ND – Not declared

Disclaimers

*1 This impact category deals mainly with the eventual impact of low-dose ionising 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 ionising radiation from the soil, from radon and from some building materials is also not measured by this indicator

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

Results per 1 m² of Roller sectional door, PG 3

Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Core indicators															
GWP-t	kg CO_2 eq.	164.18	0.86	2.39	ND	7.54E-02	0.00	ND	0.00	4.84	0.00	0.00	9.62E-02	11.63	1.63E-02	-40.58
GWP-f	kg CO_2 eq.	164.47	0.82	0.80	ND	7.51E-02	0.00	ND	0.00	4.78	0.00	0.00	9.23E-02	11.62	1.63E-02	-40.36
GWP-b	kg CO_2 eq.	-1.01	2.59E-02	1.59	ND	1.94E-04	0.00	ND	0.00	3.78E-02	0.00	0.00	2.91E-03	7.49E-03	-4.04E-05	-0.14
GWP-l	kg CO_2 eq.	0.71	8.39E-03	1.43E-03	ND	1.91E-05	0.00	ND	0.00	1.58E-02	0.00	0.00	9.41E-04	3.20E-03	6.66E-05	-7.52E-02
ODP	kg CFC-11 eq.	5.70E-07	1.59E-13	9.67E-12	ND	2.65E-13	0.00	ND	0.00	1.09E-10	0.00	0.00	1.77E-14	2.20E-11	4.51E-14	-4.95E-10
AP	mol H^+ eq.	0.72	1.25E-03	1.30E-03	ND	8.55E-05	0.00	ND	0.00	1.05E-02	0.00	0.00	1.37E-04	5.11E-03	1.15E-04	-0.14
EP-fw	kg P eq.	1.52E-02	2.21E-06	9.27E-07	ND	8.50E-08	0.00	ND	0.00	1.02E-05	0.00	0.00	2.47E-07	2.18E-06	2.42E-08	-2.60E-05
EP-m	kg N eq.	0.15	5.14E-04	3.32E-04	ND	2.07E-05	0.00	ND	0.00	2.52E-03	0.00	0.00	5.55E-05	1.44E-03	3.00E-05	-3.12E-02
EP-t	mol N eq.	1.53	5.38E-03	4.10E-03	ND	2.30E-04	0.00	ND	0.00	2.81E-02	0.00	0.00	5.79E-04	2.04E-02	3.28E-04	-0.34
POCP	kg NMVOC eq.	0.42	1.12E-03	8.54E-04	ND	8.71E-05	0.00	ND	0.00	6.24E-03	0.00	0.00	1.21E-04	3.71E-03	8.97E-05	-9.19E-02
ADPF*²	MJ	2392.26	10.54	9.06	ND	1.38	0.00	ND	0.00	97.76	0.00	0.00	1.18	20.93	0.21	-476.93
ADPE*²	kg Sb eq.	4.63E-03	5.45E-08	8.89E-08	ND	4.76E-09	0.00	ND	0.00	9.96E-07	0.00	0.00	6.11E-09	2.02E-07	1.00E-09	-2.53E-04
WDP*²	m^3 world eq. deprived	22.43	4.08E-03	0.37	ND	1.60E-02	0.00	ND	0.00	1.20	0.00	0.00	4.59E-04	1.31	1.76E-03	-3.18
Use of resources															
PERE	MJ	912.74	0.80	28.26	ND	0.12	0.00	ND	0.00	66.82	0.00	0.00	8.96E-02	13.13	4.11E-02	-233.84
PERM	MJ	17.20	0.00	-17.20	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERT	MJ	929.93	0.80	11.06	ND	0.12	0.00	ND	0.00	66.82	0.00	0.00	8.96E-02	13.13	4.11E-02	-233.84
PENRE	MJ	2252.36	10.54	13.84	ND	1.38	0.00	ND	0.00	97.76	0.00	0.00	1.18	161.65	0.21	-476.93
PENRM	MJ	117.62	0.00	-3.68	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	-108.24	0.00	0.00
PENRT	MJ	2369.97	10.54	10.16	ND	1.38	0.00	ND	0.00	97.76	0.00	0.00	1.18	53.40	0.21	-476.93
SM	kg	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	MJ	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NRSF	MJ	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FW	m^3	1.14	4.10E-04	1.07E-02	ND	4.68E-04	0.00	ND	0.00	5.20E-02	0.00	0.00	4.60E-05	3.54E-02	5.14E-05	-0.15
Waste categories															
HWD	kg	0.12	4.46E-10	1.13E-08	ND	2.89E-10	0.00	ND	0.00	1.28E-07	0.00	0.00	5.01E-11	2.54E-08	4.65E-11	-3.23E-07
NHWD	kg	27.54	1.50E-03	7.97E-02	ND	1.26E-03	0.00	ND	0.00	7.57E-02	0.00	0.00	1.68E-04	0.24	1.06	-9.03
RWD	kg	6.98E-02	2.07E-05	1.35E-03	ND	1.56E-05	0.00	ND	0.00	1.54E-02	0.00	0.00	2.33E-06	2.93E-03	2.26E-06	-2.16E-02
Output material flows															
CRU	kg	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MFR	kg	0.65	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00
MER	kg	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEE	MJ	0.54	0.00	2.74	ND	3.36E-02	0.00	ND	0.00	0.00	0.00	0.00	0.00	13.80	0.00	0.00
EET	MJ	1.01	0.00	4.94	ND	6.02E-02	0.00	ND	0.00	0.00	0.00	0.00	0.00	31.70	0.00	0.00

Key:
GWP-t – climate change - total **GWP-f** – climate change - fossil **GWP-b** – climate change - biogenic **GWP-l** – climate change - land use and land use change **ODP** – ozone depletion **AP** - acidification **EP-fw** - eutrophication - aquatic freshwater **EP-m** - eutrophication - aquatic marine **EP-t** - eutrophication - terrestrial **POCP** - photochemical ozone formation **ADPF*²** - depletion of abiotic resources – fossil fuels **ADPE*²** - depletion of abiotic resources – minerals and metals **WDP*²** – water use **PERE** - use of renewable primary energy **PERM** - use of renewable primary energy resources used as raw materials **PERT** - total use of renewable primary energy **PENRE** - use of non-renewable primary energy **PENRM** - use of non-renewable primary energy resources used as raw materials **PENRT** - total use of non-renewable primary energy **SM** - use of secondary materials **RSF** - use of renewable secondary fuels **NRSF** - use of non-renewable secondary fuels **FW** - net use of freshwater **HWD** - hazardous waste disposed **NHWD** - non-hazardous waste disposed **RWD** - radioactive waste disposed **CRU** - components for reuse **MFR** - materials for recycling **MER** - materials for energy recovery **EEE** - exported electrical energy **EET** - exported thermal energy
ND – Not declared

Results per 1 m² of Roller sectional door, PG 3

	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Additional environmental impact indicators																
PM	Disease incidence	7.61E-06	1.11E-08	1.03E-08	ND	7.44E-10	0.00	ND	0.00	8.68E-08	0.00	0.00	1.23E-09	3.37E-08	1.43E-09	-2.12E-06
IRP*[1]	kBq U235 eq.	7.51	2.94E-03	0.22	ND	1.78E-03	0.00	ND	0.00	2.55	0.00	0.00	3.30E-04	0.48	2.51E-04	-2.36
ETP-fw*[2]	CTUe	3718.00	13.65	1.73	ND	0.88	0.00	ND	0.00	16.48	0.00	0.00	1.52	4.10	0.17	-127.09
HTP-c*[2]	CTUh	2.05E-07	1.83E-10	1.60E-10	ND	1.63E-11	0.00	ND	0.00	1.55E-09	0.00	0.00	2.07E-11	3.97E-10	2.83E-12	-3.36E-08
HTP-nc*[2]	CTUh	1.16E-06	1.03E-08	4.32E-09	ND	2.94E-10	0.00	ND	0.00	3.28E-08	0.00	0.00	1.15E-09	1.09E-08	1.06E-10	-1.82E-07
SQP*[2]	Dimensionless.	748.76	4.62	3.55	ND	8.11E-02	0.00	ND	0.00	39.26	0.00	0.00	0.52	8.02	5.25E-02	-62.10

Key:
PM – particulate matter emissions **IRP*[1]** – ionising radiation – human health **ETP-fw*[2]** - ecotoxicity – aquatic freshwater **HTP-c*[2]** - human toxicity potential – cancer effect **HTP-nc*[2]** - human toxicity potential – non-cancer effect **SQP*[2]** – land use related impacts / soil quality
ND – Not declared

Disclaimers

*1 This impact category deals mainly with the eventual impact of low-dose ionising 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 ionising radiation from the soil, from radon and from some building materials is also not measured by this indicator

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

Results per 1 m² of Side door, PG 4

Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Core indicators															
GWP-t	kg CO_2 eq.	172.45	0.65	1.70	ND	0.11	0.00	ND	0.00	0.00	0.00	0.00	8.92E-02	3.75	1.51E-02	-46.24
GWP-f	kg CO_2 eq.	172.19	0.62	0.39	ND	0.11	0.00	ND	0.00	0.00	0.00	0.00	8.57E-02	3.74	1.51E-02	-45.98
GWP-b	kg CO_2 eq.	-0.71	1.96E-02	1.31	ND	-1.96E-03	0.00	ND	0.00	0.00	0.00	0.00	2.70E-03	6.63E-03	-3.75E-05	-0.17
GWP-l	kg CO_2 eq.	0.97	6.36E-03	7.90E-05	ND	2.03E-04	0.00	ND	0.00	0.00	0.00	0.00	8.74E-04	2.78E-03	6.18E-05	-8.84E-02
ODP	kg CFC-11 eq.	0.16	1.20E-13	3.07E-13	ND	4.65E-09	0.00	ND	0.00	0.00	0.00	0.00	1.65E-14	1.92E-11	4.20E-14	-5.57E-10
AP	mol H^+ eq.	0.91	9.27E-04	4.84E-04	ND	1.78E-03	0.00	ND	0.00	0.00	0.00	0.00	1.26E-04	2.67E-03	1.06E-04	-0.16
EP-fw	kg P eq.	0.16	1.66E-06	5.32E-08	ND	8.42E-06	0.00	ND	0.00	0.00	0.00	0.00	2.30E-07	1.83E-06	2.24E-08	-3.09E-05
EP-m	kg N eq.	0.33	3.80E-04	1.68E-04	ND	1.37E-04	0.00	ND	0.00	0.00	0.00	0.00	5.15E-05	6.98E-04	2.78E-05	-3.77E-02
EP-t	mol N eq.	1.86	3.97E-03	2.18E-03	ND	1.65E-03	0.00	ND	0.00	0.00	0.00	0.00	5.37E-04	8.94E-03	3.04E-04	-0.41
POCP	kg NMVOC eq.	0.61	8.26E-04	4.49E-04	ND	5.04E-04	0.00	ND	0.00	0.00	0.00	0.00	1.12E-04	1.77E-03	8.33E-05	-0.11
ADPF*²	MJ	2308.93	7.98	0.67	ND	1.66	0.00	ND	0.00	0.00	0.00	0.00	1.10	17.55	0.20	-540.33
ADPE*²	kg Sb eq.	0.16	4.12E-08	3.52E-09	ND	3.43E-05	0.00	ND	0.00	0.00	0.00	0.00	5.67E-09	1.76E-07	9.32E-10	-4.69E-04
WDP*²	m^3 world eq. deprived	25.61	3.09E-03	0.24	ND	1.32E-02	0.00	ND	0.00	0.00	0.00	0.00	4.25E-04	0.50	1.63E-03	-3.90
Use of resources															
PERE	MJ	1089.04	0.60	18.76	ND	0.23	0.00	ND	0.00	0.00	0.00	0.00	8.31E-02	11.67	3.81E-02	-284.24
PERM	MJ	14.30	0.00	-14.30	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERT	MJ	1103.34	0.60	4.46	ND	0.23	0.00	ND	0.00	0.00	0.00	0.00	8.31E-02	11.67	3.81E-02	-284.24
PENRE	MJ	2267.95	7.98	6.99	ND	1.67	0.00	ND	0.00	0.00	0.00	0.00	1.10	50.49	0.20	-540.33
PENRM	MJ	31.53	0.00	-4.86	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	-25.34	0.00	0.00
PENRT	MJ	2299.47	7.98	2.13	ND	1.67	0.00	ND	0.00	0.00	0.00	0.00	1.10	25.15	0.20	-540.33
SM	kg	0.18	0.00	0.00	ND	1.09E-03	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	MJ	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NRSF	MJ	0.00	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FW	m^3	1.27	3.11E-04	5.75E-03	ND	3.54E-04	0.00	ND	0.00	0.00	0.00	0.00	4.26E-05	1.59E-02	4.77E-05	-0.19
Waste categories															
HWD	kg	0.16	3.38E-10	3.45E-10	ND	6.16E-06	0.00	ND	0.00	0.00	0.00	0.00	4.64E-11	2.24E-08	4.32E-11	-1.16E-05
NHWD	kg	34.15	1.13E-03	8.15E-02	ND	2.68E-02	0.00	ND	0.00	0.00	0.00	0.00	1.56E-04	7.53E-02	0.99	-11.85
RWD	kg	0.24	1.57E-05	3.17E-05	ND	1.12E-05	0.00	ND	0.00	0.00	0.00	0.00	2.16E-06	2.67E-03	2.09E-06	-2.54E-02
Output material flows															
CRU	kg	0.12	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MFR	kg	0.32	0.00	0.00	ND	4.76E-03	0.00	ND	0.00	0.00	0.00	0.00	0.00	13.40	0.00	0.00
MER	kg	0.12	0.00	0.00	ND	0.00	0.00	ND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEE	MJ	0.86	0.00	2.49	ND	1.12E-02	0.00	ND	0.00	0.00	0.00	0.00	0.00	3.76	0.00	0.00
EET	MJ	1.46	0.00	4.49	ND	2.02E-02	0.00	ND	0.00	0.00	0.00	0.00	0.00	8.63	0.00	0.00

Key:
GWP-t – climate change - total **GWP-f** – climate change - fossil **GWP-b** – climate change - biogenic **GWP-l** – climate change - land use and land use change **ODP** – ozone depletion **AP** - acidification **EP-fw** - eutrophication - aquatic freshwater **EP-m** - eutrophication - aquatic marine **EP-t** - eutrophication - terrestrial **POCP** - photochemical ozone formation **ADPF*²** - depletion of abiotic resources – fossil fuels **ADPE*²** - depletion of abiotic resources – minerals and metals **WDP*²** – water use **PERE** - use of renewable primary energy **PERM** - use of renewable primary energy resources used as raw materials **PERT** - total use of renewable primary energy **PENRE** - use of non-renewable primary energy **PENRM** - use of non-renewable primary energy resources used as raw materials **PENRT** - total use of non-renewable primary energy **SM** - use of secondary materials **RSF** - use of renewable secondary fuels **NRSF** - use of non-renewable secondary fuels **FW** - net use of freshwater **HWD** - hazardous waste disposed **NHWD** - non-hazardous waste disposed **RWD** - radioactive waste disposed **CRU** - components for reuse **MFR** - materials for recycling **MER** - materials for energy recovery **EEE** - exported electrical energy **EET** - exported thermal energy
ND – Not declared

Results per 1 m² of Side door, PG 4															
	Unit	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Additional environmental impact indicators																
PM	Disease incidence	0.16	8.32E-09	3.07E-09	ND	7.72E-09	0.00	ND	0.00	0.00	0.00	0.00	1.14E-09	1.96E-08	1.33E-09	-2.58E-06
IRP*[1]	kBq U235 eq.	8.80	2.22E-03	4.86E-03	ND	3.33E-03	0.00	ND	0.00	0.00	0.00	0.00	3.06E-04	0.44	2.33E-04	-2.59
ETP-fw*[2]	CTUe	1727.96	10.31	0.31	ND	12.79	0.00	ND	0.00	0.00	0.00	0.00	1.42	3.11	0.15	-151.91
HTP-c*[2]	CTUh	0.16	1.39E-10	1.95E-11	ND	4.71E-10	0.00	ND	0.00	0.00	0.00	0.00	1.91E-11	2.96E-10	2.63E-12	-3.87E-08
HTP-nc*[2]	CTUh	0.16	7.79E-09	8.01E-10	ND	2.25E-08	0.00	ND	0.00	0.00	0.00	0.00	1.07E-09	6.94E-09	9.83E-11	-2.44E-07
SQP*[2]	Dimensionless.	864.80	3.50	0.19	ND	0.96	0.00	ND	0.00	0.00	0.00	0.00	0.48	6.93	4.88E-02	-72.56

Key:
PM – particulate matter emissions **IRP*[1]** – ionising radiation – human health **ETP-fw*[2]** - ecotoxicity – aquatic freshwater **HTP-c*[2]** - human toxicity potential – cancer effect **HTP-nc*[2]** - human toxicity potential – non-cancer effect **SQP*[2]** – land use related impacts / soil quality
ND – Not declared

Disclaimers

*1 This impact category deals mainly with the eventual impact of low-dose ionising 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 ionising radiation from the soil, from radon and from some building materials is also not measured by this indicator

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

6.4 Interpretation, LCA presentation and critical review

Evaluation

The environmental impact of

- roller doors with aluminium curtains
- roller doors with plastic curtains
- sectional doors
- and side doors

varies greatly. The differences lie in the various intermediate products and raw materials used.

In terms of manufacturing, a significant proportion of the environmental impact of all product groups examined is caused by the aluminium profiles and sheets used, as well as the upstream anodising processes. Another common feature of product groups 1 to 3 (roller and sectional doors) is the strong influence of the electric motor on the predicted environmental impacts. Furthermore, galvanised steel profiles contribute significantly to the environmental impacts in these product groups.

The environmental impacts during the 50-year use phase are primarily a result of the energy consumption for operating the doors. The replacement of fasteners plays only a minor role here.

In scenario C4, only marginal expenses are to be expected for physical pre-treatment and landfill operation. In the case of landfill, it is difficult to assign the individual raw materials. When recycling the products (all product groups), around 5 % of the environmental impacts of the core indicators (excluding WDP, as this is not supported by the software) occurring during the life cycle can be credited to scenario D for all metals.

Compared to the EPD five years ago, the life cycle assessment results differ considerably in some cases. The reasons for this are that other, more suitable ‘LCA for Experts’ data sets were used, the background data in ‘LCA for Experts’ has changed, normative specifications have changed, and the participating member companies have carried out a new data collection on more energy-efficient production.

The charts below show the distribution of the main environmental impacts.

The values obtained from the LCA calculation are suitable for the certification of buildings.

Charts

The following charts show the B modules related to the specified RSL during the 50-year building service life.

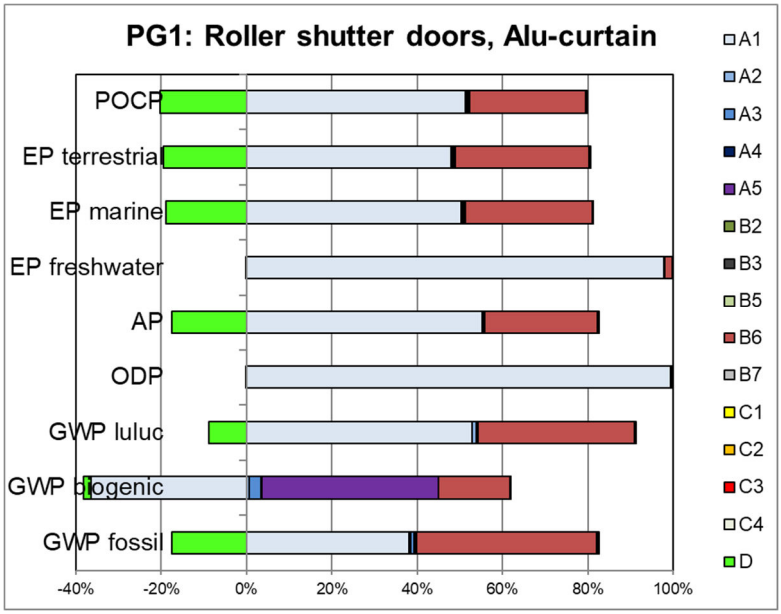


Figure 5: Percentage of the modules in selected environmental impact categories, PG1

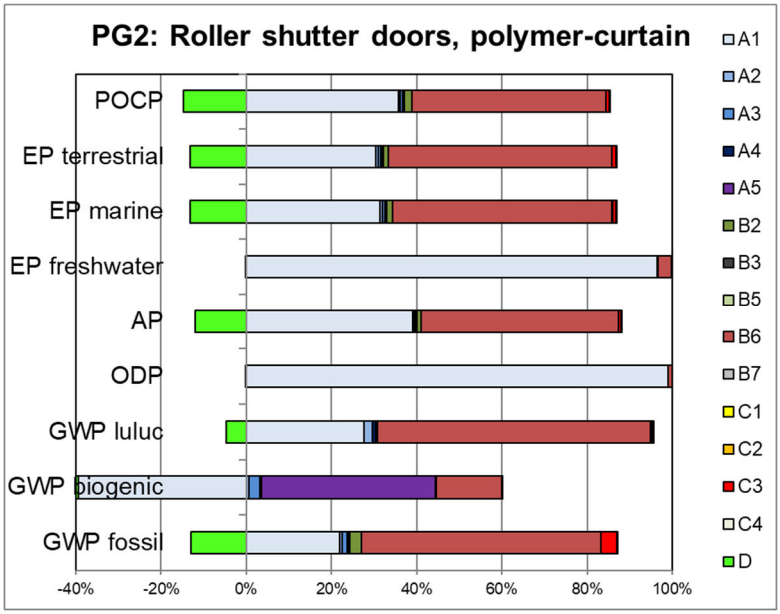


Figure 6: Percentage of the modules in selected environmental impact categories, PG2

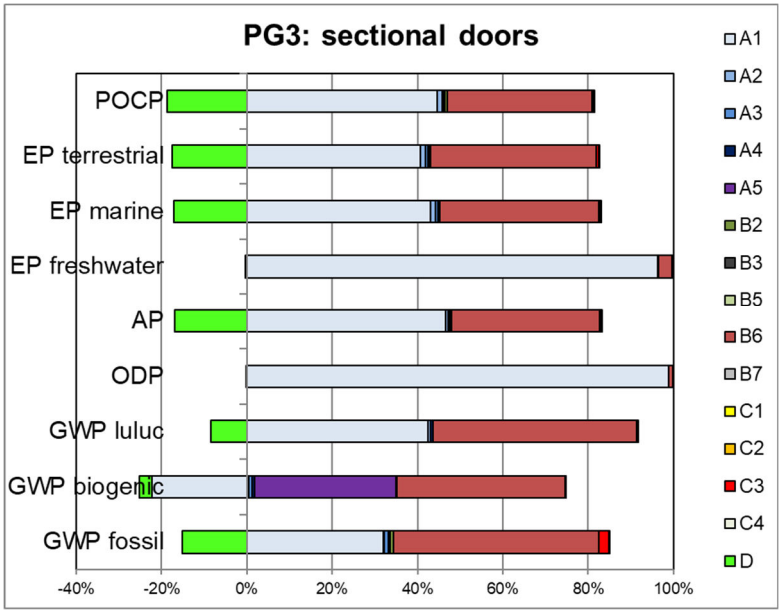


Figure 7: Percentage of the modules in selected environmental impact categories, PG3

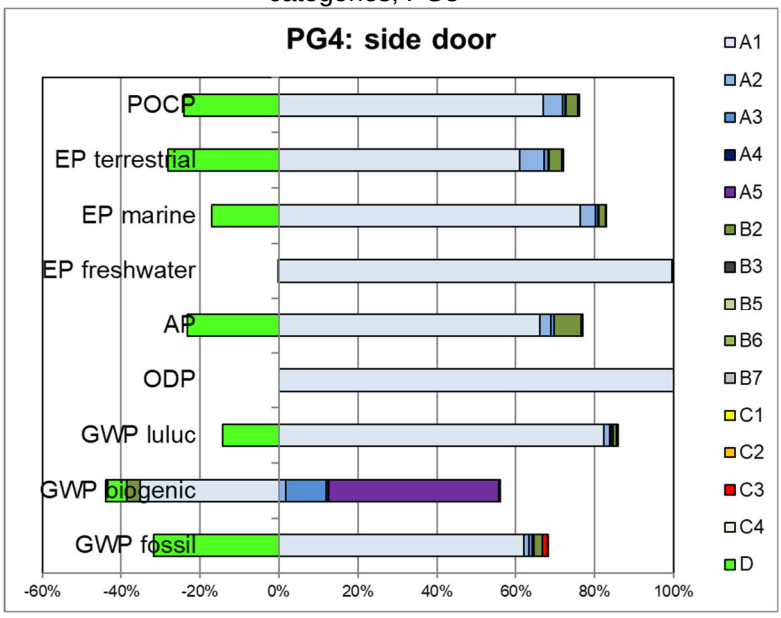


Figure 8: Percentage of the modules in selected environmental impact categories, PG4

Report

The LCA report underlying this EPD was developed according to the requirements of DIN EN ISO 14040 and DIN EN ISO 14044 as well as DIN EN 15804 and DIN EN ISO 14025. It is not addressed to third parties for reasons of confidentiality. It is deposited with the ift Rosenheim. The results and conclusions reported to the target group are complete, correct, without bias and transparent. The results of the study are not designed to be used for comparative statements intended for publication.

Critical review

The critical review of the LCA and the report took place in the course of verification of the EPD and was carried out by Philipp Dumproff, an external verifier.

7 General information regarding the EPD

Comparability

This EPD was prepared in accordance with DIN EN 15804 and is therefore only comparable to those EPDs that also comply with the requirements set out in DIN EN 15804.
Any comparison must refer to the building context and the same boundary conditions of the various life cycle stages.
For comparing EPDs of construction products, the rules set out in DIN EN 15804 (Clause 5.3) apply.

The reference products included in the balance sheet were identified using the worst-case approach and considered representative of the product group. The results for individual products within the product group differ from the results for the reference products. The determination of the product groups and the resulting variants are documented in the background report.

Communication

The communications format of this EPD meets the requirements of EN 15942:2012 and is therefore the basis for B2B communication. Only the nomenclature has been changed according to DIN EN 15804.

Verification

Verification of the Environmental Product Declaration is documented in accordance with the ift "Richtlinie zur Erstellung von Typ III Umweltproduktdeklarationen" (Guidance on preparing Type III Environmental Product Declarations) in accordance with the requirements set out in DIN EN ISO 14025.

The Declaration is based on the PCR documents EN 17213 “PCR for windows and doors, “PCR Part A” PCR-A-2.0:2025 and "Doors” PCR-TT-3.2:2023

The European standard EN 15804 serves as the core PCR [a)]
Independent external verification of the Declaration and statement according to EN ISO 14025:2010
Independent third party verifier: [b)] B. Eng. (FH) Philipp Dumproff
[a)] Product category rules [b)] Optional for business-to-business communication Mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)

Revisions of this document

No.	Date	Note:	Practitioner	Verifier
1	03.03.2026	External verification	Brechleiter	Dumproff

8 Literaturverzeichnis

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9 Annex

Description of life cycle scenarios for Roller shutter doors and roller grilles, sectional doors and side doors

Product stage			Con-struction process stage		Use stage*							End-of-life stage				Benefits and loads from beyond the system boundaries
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw material supply	Transport	Manufacture	Transport	Construction/installation process	Use	Maintenance	Repair	Replacement	Modification/refurbishment	Operational energy use	Operational water use	Deconstruction/demolition	Transport	Waste processing	Disposal	Reuse Recovery Recycling potential
✓	✓	✓	✓	✓	—	✓	✓	—	✓	✓	✓	✓	✓	✓	✓	✓

* For the declared B modules, the calculation of the results is based on the specified RSL related to one year.

Table 7: Overview of applied life cycle stages

Calculation of the scenarios was based on a defined RSL (see Section 4 Use Stage).

The scenarios were based on information provided by the manufacturer. The scenarios were furthermore based on the research project “EPDs for transparent building components. (1)

Note: The standard scenarios selected are presented in bold type. They were also used for calculating the indicators in the summary table.

- ✓ Included in the LCA
- — Not included in the LCA

A4 Transport

No.	Scenario	Description
A4	**Direct delivery to construction site/branch** (Europe-wide)	**40-tonne lorry (Euro 0-6 mix), diesel, 27-tonne payload, 80% utilisation[1], approx. 300 km to construction site and return with 10% load**

[1] capacity used: used loading capacity of truck

A4 Transport to the construction site	Transport weight [kg/m²]	Density [kg/m³]	Volume capacity utilisation factor[2]
PG1	**20.2**	**168**	**< 1**
PG2	**24.5**	**204**	**< 1**
PG3	**17.5**	**145**	**< 1**
PG4	**16.2**	**135**	**< 1**

[2] Volume capacity utilisation factor:
= 1 product completely fills packaging (without air inclusion)
< 1 packaging contains unused volume (e.g.: air, filling material
> 1 product is packed in compressed form

As the products are distributed throughout Europe, the transport scenario was based on average data sets for Europe.

A5 Construction/installation process

No.	Scenario	Description
A5	**Small lifting trolley / lifting platform** or **Manual**	**Product group 1-3:** **A small lifting platform or lifting trolley is required to install the products.** **Energy requirement: 1 kWh/m² (electric, RER)** (1) **Product group 4:** **According to the manufacturer, the products can be installed without additional lifting equipment or aids.**

In the case of deviating expenses, the installation of the products is recorded as part of the construction site management at building level.

Auxiliary/operating materials, water use, other resource use, material losses, direct emissions and waste materials during installation can be disregarded.

It is assumed that the packaging material is sent for waste treatment in module A5. In line with the conservative approach, waste is exclusively thermally recycled: films/protective covers, wood and cardboard in waste incineration plants. Credits from A5 are reported in module D. Credits from waste incineration plants: Electricity replaces electricity mix (RER), thermal energy replaces thermal energy from natural gas (RER). As the products are sold throughout Europe, the disposal scenario is based on average data sets for Europe.

Transport to the recycling plants is not taken into account.

As this is a single scenario, the results are shown in the overall table.

B2 Cleaning, servicing and maintenance

Since only one scenario is used, the results are shown in the relevant summary table.

B2.1 Cleaning

No.	Scenario	Description
B2.1	**Rarely manual** (based on EN 17074)	**Product group 3** **Manual cleaning of transparent segments with suitable cleaning agents, annually** **0.2 l cleaning solution** **(0.2 l water with 0.01 l cleaner) per $m^2_{of\ glass}$, annually.** **Product group 4** **Manual cleaning of both sides of the door surface with suitable cleaning agents, annually** **0.2 l cleaning solution** **(0.2 l water with 0.01 l cleaner) per m², annually.**

Ancillary materials, consumables, use of energy and water, material losses and waste as well as transport distances during cleaning are negligible.

The results of the following table include the RSL related to one year.

B2.2 Servicing and maintenance

No.	Scenario	Description
B2.2	**Normal use**	**All product groups:** **Annual functional test, visual inspection, lubrication/greasing, and repair if necessary** **0.25 kg/m² lubricant per 50 a** (1) **Product group 3:** **Multiple replacements*:** • **Seals 0.384 kg/m² (2 times)** **Product group 4:** **Single replacement*:** • **Locking mechanism 0.505 kg/m²** **Multiple replacements*:** • **Seals 0.135 kg/m² (2 times)**

* Assumptions regarding the assessment of possible environmental impacts; statements do not constitute a guarantee or warranty of properties

Current information can be found in the manufacturer's "*Installation, Operation, and Maintenance Instructions*".

The service life of the doors is specified as 30 years. The service life of the side doors is specified as >50 years. For scenario B2.2, the respective components of the building elements whose service life is less than the specified RSL are accounted for. The results were calculated on an annual basis, taking the RSL into account.

It is assumed that the replaced components are recycled in the repair module. Metals are sent to smelting (material recycling) and plastics to waste incineration plants. Credits from B2.2 are reported in module D. Credits from waste incineration plants: electricity replaces electricity mix (RER); thermal energy replaces thermal energy from natural gas (RER). Transport to the recycling plants is not taken into account.

Auxiliary/operating materials, energy/water use, waste materials, material losses, and transport routes during maintenance and servicing can be disregarded.

As this is a single scenario, the results are shown in the overall table.

B3 Repair (not relevant)

No.	Scenario	Description
B3	**Normal use and heavy use**	**Product groups 1-3** ***In accordance with EN 17213:*** *Repair of accidental damage (e.g. broken glass panes or damaged building hardware) shall only be considered if the place of installation is known and justification is provided for expecting accidental damage (e.g. schools).* **Product group 4** ***In accordance with EN 15804:*** *The module "Repair" covers a combination of all planned technical and associated administrative actions […].*

Ancillary materials, consumables, use of energy and water, waste, material losses and transport distances during repair are negligible.

Since only one scenario is used, the results are shown in the relevant summary table.

B5 Modification/refurbishment (not relevant)

According to the manufacturer, the elements are not included in the improvement / modernisation activities for buildings.

For updated information refer to the respective instructions for assembly/installation, operation and maintenance.

Since only one scenario is used, the results are shown in the relevant summary table.

B6 Operational energy use

No.	Scenario	Description
B6.1	**Hand-operated**	**Product group 4** **No energy consumed when used**
B6.2	Power-operated Normal use (private sector)	Annual consumption per 1 m², Product groups 1-3: 10.6 kWh/m²a electricity (including standby mode) (4 cycles per day)
B6.3	**Power-operated** **Normal use** **(commercial/craft sector)**	**Annual consumption per 1 m², Product groups 1-3:** **11.7 kWh/m²a electricity (including standby mode)** **(10 cycles per day)**
B6.4	Power-operated Increased use (industrial/public sector)	Annual consumption per 1 m², Product groups 1-3: 22.5 kWh/m²a Electricity (including standby mode) (70 cycles per day)

There are no transport costs associated with energy use in the building. Auxiliary/operating materials, water use, waste materials, and other scenarios can be disregarded.

In the following table, the results have been calculated on an annual basis, taking RSL into account.

The results of scenarios B6.1 and B6.3 are shown in the overall table.

B6 Operational energy use	Unit	B6.1	B6.2	B6.3	B6.4
Core indicators					
GWP-t	kg CO_2 eq.	**0**	4.39	**4.84**	9.35
GWP-f	kg CO_2 eq.	**0**	4.33	**4.78**	9.23
GWP-b	kg CO_2 eq.	**0**	3.43E-02	**3.78E-02**	7.30E-02
GWP-l	kg CO_2 eq.	**0**	1.43E-02	**1.58E-02**	3.05E-02
ODP	kg CFC-11 eq.	**0**	9.88E-11	**1.09E-10**	2.11E-10
AP	mol H^+ eq.	**0**	9.52E-03	**1.05E-02**	2.03E-02
EP-fw	kg P eq.	**0**	9.25E-06	**1.02E-05**	1.97E-05
EP-m	kg N eq.	**0**	2.29E-03	**2.52E-03**	4.87E-03
EP-t	mol N eq.	**0**	2.55E-02	**2.81E-02**	5.43E-02
POCP	kg NMVOC eq.	**0**	5.66E-03	**6.24E-03**	1.21E-02
ADPF	MJ	**0**	88.65	**97.76**	188.87
ADPE	kg Sb eq.	**0**	9.03E-07	**9.96E-07**	1.92E-06
WDP	m^3 world eq. deprived	**0**	1.09	**1.20**	2.32
Use of resources					
PERE	MJ	**0**	60.59	**66.82**	129.10
PERM	MJ	**0**	0	**0.00**	0
PERT	MJ	**0**	60.59	**66.82**	129.10
PENRE	MJ	**0**	88.65	**97.76**	188.87
PENRM	MJ	**0**	0	**0.00**	0
PENRT	MJ	**0**	88.65	**97.76**	188.87
SM	kg	**0**	0	**0.00**	0
RSF	MJ	**0**	0	**0.00**	0
NRSF	MJ	**0**	0	**0.00**	0
FW	m^3	**0**	4.72E-02	**5.20E-02**	1.00E-01
Waste categories					
HWD	kg	0	1.16E-07	**1.28E-07**	2.47E-07
NHWD	kg	0	6.86E-02	**7.57E-02**	1.46E-01
RWD	kg	0	1.40E-02	**1.54E-02**	2.98E-02
Output material flows					
CRU	kg	**0**	0.00	**0.00**	0.00
MFR	kg	**0**	0.00	**0.00**	0.00
MER	kg	**0**	0.00	**0.00**	0.00
EEE	MJ	**0**	0.00	**0.00**	0.00
EET	MJ	**0**	0.00	**0.00**	0.00
Additional environmental impact indicators					
PM	Disease incidence	**0**	7.9E-08	**8.68E-08**	1.68E-07
IRP	kBq U235 eq.	**0**	2.31	**2.55**	4.93
ETP-fw	CTUe	**0**	14.94	**16.48**	31.84
HTP-c	CTUh	**0**	1.4E-09	**1.55E-09**	2.99E-09
HTP-nc	CTUh	**0**	3.0E-08	**3.28E-08**	6.34E-08
SQP	Dimensionless	**0**	35.60	**39.26**	75.85

B7 Operational water use (not relevant)

There is no water consumption when used as intended. Water consumption for cleaning is specified in module B2.1.

Since only one scenario is used, the results are shown in the relevant summary table.

C1 Deconstruction, demolition

No.	Scenario	Description
C1	**Deconstruction** (according to EN 17213)	• **Non-glass components: 95 % dismantling** • **Residues sent to landfill**

No relevant inputs or outputs apply to the scenario selected. The energy consumed for deconstruction is negligible. Any arising consumption is marginal.

Since only one scenario is used, the results are shown in the relevant summary table.

In case of deviating consumption, the removal of the products forms part of the site management and is covered at the construction works level.

C2 Transport

No.	Scenario	Description
C2	**Transport**	**Transport to collection point using 40 t truck (Euro 0-6 mix), diesel, 27 t payload, 50 % capacity used, 100 km** (1)

Since only one scenario is used, the results are shown in the relevant summary table.

C3 Waste management

No.	Scenario	Description
C3	**Waste treatment** (according to EN 17213)	**Percentage of materials recycled:** • **Metals 100 % melted down** • **Plastics 100 % incinerated in waste incineration plants** • **Wood and wood-based materials 100 % incinerated**

Electricity consumption of incineration plant 0.5 MJ/kg. (1)

As the products are placed on the European market, the disposal scenario is based on average European datasets.

The table below describes the disposal processes and their percentage by mass/weight. The calculation is based on the above mentioned proportions in percent related to the declared unit of the product system.

C3 Disposal	Unit	PG 1	PG 2	PG 3	PG 4
Collection process, collected separately	kg	16.1	20.0	15.5	14.4
Collection process, collected as mixed construction waste	kg	0.9	1.1	0.8	0.8
Recovery system, for reuse	kg	0	0	0	0
Recovery system, for recycling	kg	15.8	15.0	11.9	13.4
Recovery system, for energy recovery	kg	0.3	5.0	3.6	1.0
Disposal	kg	0.9	1.1	0.8	0.8

Since only one scenario is used, the results are shown in the summary table.

C4 Disposal

No.	Scenario	Description
C4	Disposal	The non-recordable amounts and losses within the reuse/recycling chain (C1 and C3) are modelled as "disposed" (RER).

The consumption in scenario C4 results from physical pre-treatment, waste recycling and management of the disposal site. The benefits obtained here from the substitution of primary material production are allocated to module D, e.g. electricity and heat from waste incineration.

Since only one scenario is used, the results are shown in the summary table.

D Benefits and loads from beyond the system boundaries

No.	Scenario	Description[1]
D	Recycling potential	**All product groups:** • **Steel scrap replaces 70.2% of steel** • **Stainless steel scrap replaces 70.2% of stainless steel** • **Aluminum scrap replaces 70.2% of aluminum** • **Zamak scrap replaces 60% of zamak** **Product groups 1 - 3:** • **Copper scrap replaces 70.2% of copper** **Credits from waste incineration plant: Electricity replaces electricity mix (RER); thermal energy replaces thermal energy from natural gas (RER).**

[1] Value correction factor 70.2% according to metal specific data set, 60% according to standard data set for other materials.

The values in module "D" result from recycling of the packaging material in module A5 and from deconstruction at the end of service life.

Since only one scenario is used, the results are shown in the summary table.

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Notes
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