ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	ASSA ABLOY Entrance Systems AB
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASA-20250458-IBA1-EN
Issue date	23.01.2026
Valid to	22.01.2031

ASSA ABLOY SG Expression Speedgate

ASSA ABLOY Entrance Systems

Institut Bauen und Umwelt e.V.

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ASSA ABLOY

1. General Information

ASSA ABLOY Entrance Systems

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-ASA-20250458-IBA1-EN

This declaration is based on the product category rules:

Automatic doors, automatic gates, and revolving door systems, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

23.01.2026

Valid to

22.01.2031

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

ASSA ABLOY SG Expression Speedgate

Owner of the declaration

ASSA ABLOY Entrance Systems AB
Lodjursgatan 10
SE-261 44 Landskrona
Sweden

Declared product / declared unit

The declaration represents 1 unit of ASSA ABLOY SG Expression Speedgate.

Scope:

This declaration and its LCA study are relevant to the ASSA ABLOY SG Expression speedgate. The final assembly and production stage occur in Ostrov u Stribra, Czech Republic at D5 Logistic Park 34901 Ostrov u Stribra, Czech Republic. Components are sourced from international Tier one suppliers. ASSA ABLOY SG Expression speedgate varies according to project requirements; one lane, glass-design, cabinet length of 1450 mm, passage width of 900 mm, door leaf height of 1000 mm is used in this declaration.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally

Dr.-Ing. Wolfram Trinius,
(Independent verifier)

2. Product

2.1 Product description/Product definition

Product name: ASSA ABLOY SG Expression Speedgate

Product characteristics: The ASSA ABLOY SG Expression speedgate is a security gate for controlled access to protected areas in buildings. The Speedgate is an automatic, sensor-based entrance solution which allows integration with different access solutions such as RFID-Reader, Face Recognition, QR-Code reader, and Mobile credentials to allow only dedicated pedestrian access. It is characterized by sophisticated design and outstanding technology with smoothness of operation.

The modular design allows a broad range of applications and seamless integration into the building structure. Flexible programming and integration options offer a wide variety of solutions for many differing requirements. With this extensive variety of possible setups (including passage length, width, height, and coloring) combined with advanced sensor technology, the system meets the security and aesthetic requirements of every building.

The operating modes can be selected by a control unit or with an integrated BMS-Module. Different input functions like 'Secure' or 'Secure Entry / Exit' could be connected to control the solution. In addition, there is the possibility to connect several outputs for displaying signals like Alarm or Emergency to the Building Management System.

The Speedgate has 4 primary parts:
1) Ground adapter and main frame
2) Power supply NET
3) Control unit STG
4) Main drive

The ASSA ABLOY SG Expression has been designed to meet operational and safety requirements and is certified by a third party to fulfill the European Directives and the standards issued by the European Standardization Committee (CEN). For North America the SG Expression meets the ANSI/CAN/UL directives.

For the placing on the market in the European Union/European Free Trade Association (EU/EFTA) (excl. Switzerland), Switzerland and Turkey the following European directives apply to the ASSA ABLOY SG Expression:

- *2014/30/EU* Electromagnetic Compatibility Directive (EMCD)
- *2006/42/EC* Machinery Directive (MD)
- *2011/65/EU* on the restriction of the use of certain hazardous substances in electrical and electronic equipment with the applicable amendments (RoHS).

These directives provide for CE marking of the product and issuing a Declaration of Conformity.

Harmonized European standards, which have been applied:

- *EN 60335-1* Household and similar electrical appliances -Safety - Part 1: General requirements
- *EN 60335-2-103* Household and similar electrical appliances -Safety - Part 2: Particular requirements for drives for gates, doors and windows
- *EN 61000-6-2* Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
- *EN 61000-6-3* Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments
- *EN ISO 13849-1* Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design
- *EN 17352* Power operated pedestrian entrance control equipment - Safety in use - Requirements and test methods.
- *EN IEC 63000* Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Other standards or technical specifications, which have been applied:

- *EltVTR: 1997-12* Richtlinie über elektrische Verriegelungssysteme von Türen in Rettungswegen (EltVTR)
- *EN 13637* Building hardware - Electrically controlled exit systems for use on escape routes - Requirements and test methods
- *ANSI/CAN/UL 325* Door, Drapery, Gate, Louver, and. Window Operators and Systems - standard for safety.
- *FCC Part 15B* Unintentional Radiators
- *ICES-003* Information Technology Equipment (including Digital Apparatus)

Disposal of the product is subject to the Waste from Electrical and Electronic Equipment (WEEE) Directive within Europe, Directive *2012/19/EU* together with the RoHS Directive *2011/65/EU* and its amending Directive *2015/863*.

For the application and use the respective national provisions apply.

2.2 Application

The ASSA ABLOY SG Expression is utilized to provide controlled access for many different building types.

Typical applications of speedgates include:
• Commercial buildings
• Private sector and office facilities
• Hospitality facilities
• Residential buildings

2.3 Technical Data

The table presents the technical properties of the ASSA ABLOY SG Expression based on the configuration of the declared unit:

Lane length (Cabinet length): 1450 mm
Passageway width: 900 mm
Wing heights: 1000 mm
Surface treatment: Powder coated, customized

Constructional data

Name	Value	Unit
Power "Standby"	126	W
Power "On"	190	W
Ambient temperature	-10 to +55	°C
Mains power supply	110-240, 50/60	VAC, Hz
Control voltage	24	VDC

Performance data of the product according to the harmonised standards, based on provisions for harmonization.

- *EN 60335-1* Household and similar electrical appliances -Safety - Part 1: General requirements

- *EN 60335-2-103* Household and similar electrical appliances -Safety - Part 2: Particular requirements for drives for gates, doors and windows
- *EN 61000-6-2* Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
- *EN 61000-6-3* Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments
- *EN ISO 13849-1* Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design
- *EN 17352* Power operated pedestrian entrance control equipment - Safety in use - Requirements and test methods.
- *EN IEC 63000* Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

2.4 Delivery status

The SG Expression, cabinet length 1450 mm, passage width 900 mm and door leaf height 1000 mm, is delivered ready for installation.

2.5 Base materials/Ancillary materials

The average composition of the ASSA ABLOY SG Expression is as follows:

Name	Value	Unit
Aluminium	26.91	%
Plastics	2.19	%
Stainless steel	0.67	%
Steel	27.45	%
Zinc	7.49	%
Glass	31.25	%
Electronic	3.31	%
Electro-mechanics	0.73	%

2.6 Manufacture

The primary manufacturing processes are made by tier one suppliers and the final manufacturing processes for speedgates occur in the factory in Ostrov, Czech Republic. The profiles are machined and surface treated; either anodized (externally) or powder coated (internally). Other parts such as electronics etc. arrives from tier one suppliers or the factory in China and a final assembly is done in Ostrov. All the parts are encased in pine crates and forwarded on a standard wooden pallet for on-site installation. The certified quality management system, *EN ISO 9001:2015*, ensures high standards.

Offcuts and scraps during the manufacturing process are directed to a recycling unit. Wastewater is cleared locally, and waste is sent for disposal.

Waste codes according to the European Waste Catalogue and Hazardous Waste List - Valid from 1 July 2015:
EWC 12 01 03 Non-ferrous metal filings and turnings
EWC 08 02 01 Waste coating powders

2.7 Environment and health during manufacturing

ASSA ABLOY Entrance Systems AB is committed to producing and distributing door opening solutions with minimal environmental impact, where health & safety are the primary focus for all employees and associates.
• Environmental operations, Greenhouse gases, energy, water, waste, VOC, surface treatment and Health & Safety are being routinely monitored. Inspections, audits, and reviews are conducted periodically to ensure that applicable standards are met, and environment management program effectiveness is evaluated.
• Code of Conduct covers human rights, labor practices and decent work. ASSA ABLOY Entrance Systems AB´s management is aware of their environmental roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance.
• Preparation conditions in the factory of Ostrov do not require special health and safety measures. Standard health and safety measures (work gloves, hearing protection, safety shoes, dust mask when sanding and milling, dust extraction, etc.) are observed where appropriate.
• Water and soil contamination does not occur, and all production related waste is processed internally in the appropriate manner.

2.8 Product processing/Installation

The ASSA ABLOY SG Expression is supplied ready for installation. The components are assembled using simple tools including drills and hand tools. The installation is performed by trained and qualified installation technicians.

2.9 Packaging

Packaging exists for the purpose of protection during transportation. The ASSA ABLOY SG Expression is packed with plastic distances to avoid friction damages, placed in a pine crate and forwarded to on-site installation. All these packaging components are standard industry types and recyclable. The wood material is FSC certified.

Wood 98.97%
Steel 0.62%
Plastics 0.41%
Total 100%

All materials incurred during installation are directed to a recycling unit.

Waste codes according to the European Waste Catalogue and Hazardous Waste List -Valid from 1 July 2015:
EWC 15 01 02 Plastic packaging
EWC 15 01 03 Wooden packaging
EWC 17 04 05 Iron and steel

2.10 Condition of use

Regular inspections shall be made according to national regulations and product documentation by an ASSA ABLOY Entrance Systems trained and qualified technician. The number of service occasions should be in accordance with national requirements and product documentation. Service is recommended according to "Installation, Commissioning and Service Instructions".

Regular inspections and cleaning should be performed by the owner of the product, according to "User Manual". Insufficient or inattentive cleaning or care of the system can lead to malfunctions, material damage or personal injuries.

• Examine the sensors regularly for dirt and clean them if necessary.
• Regularly remove dirt accumulations from the product and its close surroundings, for example the floor, in the floor rail, or under the floor mat.
• Keep the system free from moisture like water, snow and ice.
• Do not use aggressive or caustic cleaning agents.
• Put the floor mat without folds and flush with the floor.
• Do not lean or attach equipment required for cleaning

purposes, such as ladders or similar, to the system.

2.11 Environment and health during use

There is no harmful emissive potential. No damage to health or impairment is expected under normal use corresponding to the intended use of the product.

2.12 Reference service life

The product has a reference service life of approximately 1,000,000 cycles or 10 years of average daily use with the recommended maintenance and service program. For this EPD a lifetime of 10 years was considered.

2.13 Extraordinary effects

Fire

No standardized test has been conducted. The product consists mostly of metals and glass which does not add to the spread of fire.

Water

Contains no substances that impact water. In case of a flood electric operation of the device can be influenced negatively.

Mechanical destruction

No danger to the environment can be anticipated during mechanical destruction.

2.14 Re-use phase

The product is possible to be re-used during the reference service life and be moved from one location to another.
The majority, by weight, of components are steel, aluminum and glass which can be recycled.

All recyclable materials are directed to a recycling unit where they are recycled (electronics, steel, glass and aluminum). The plastic components can be used for energy recovery within a waste incineration process.

2.15 Disposal

The product can be mechanically dissembled to separate the different materials. The majority of components are steel, aluminum and glass which will be recycled. The plastic components are used for energy recovery in an incineration plant.

Waste codes according to the European Waste Catalogue and Hazardous Waste List -Valid from 1 July 2015:
EWC 17 02 03 Plastic
EWC 17 02 02 Glass
EWC 17 04 02 Aluminum
EWC 17 04 04 Zink
EWC 17 04 05 Iron and steel
EWC 17 04 11 Cables with the exception of those outlined in 17 04 10
20 01 36 discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35

The disposal of the product is subject to the Waste Electrical and Electronic Equipment (WEEE) Directive within Europe, Directive *2012/19/EU*

2.16 Further information

ASSA ABLOY Entrance Systems AB
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Sweden
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3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of ASSA ABLOY SG Expression Speedgate as specified in Part B requirements on the EPD IBU: PCR Automatic doors, automatic gates, and revolving door systems (door systems).

Functional unit for module B6: Use of 1 piece of ASSA ABLOY SG Expression Speedgate for 10 years.

Declared unit and mass reference

Name	Value	Unit
Dimensions (LxWxH)	1450x900x1000	mm
Declared Unit	1	pce
Mass (without packaging)	146.72	kg
Mass packaging (paper wood, copper and plastics)	48.5	kg
Mass reference	146.72	kg/pce

3.2 System boundary

Type of the EPD: cradle to grave with module D (A+B+C+D).
The following life cycle stages were considered:
Production stage:

- A1 – Raw material extraction and processing
- A2 – Transport to the manufacturer and
- A3 – Manufacturing

Construction stage:

- A4 - Transport from the gate to the site
- A5 – Packaging waste processing

Use stage related to the operation of the building includes:

- B6 – Operational energy use

End-of-life stage:

- C1- Deconstruction/ demolition
- C2 – Transport to waste processing,
- C3 – Waste processing for recycling and
- C4 – Disposal (landfill, waste for incineration).

This includes provision of all materials, products and energy, packaging processing and its transport, as well as waste processing up to the end-of-waste state or disposal of final residues.

Benefits and loads beyond the system boundaries:

- D – Declaration of all benefits and loads.

3.3 Estimates and assumptions

Transportation: Data on the mode of transport and distances, as reported by suppliers were used for those materials and parts contributing more than 2 % of the total product mass.

Use stage: For the use phase, it is assumed that the one piece of speedgate is used in the European Union, thus a European electricity grid mix is considered within this stage. According to the most representative scenario, the operating hours of the product are accounted for 0.3 hours in on mode and 23.7 hours in standby per day (365 days per year in use, 10 years lifetime); the power consumption throughout the whole life cycle is 11.11 MWh.

EoL: In the End-of-Life stage, for all the materials from the product which can be recycled (aluminum, steel, zinc, stainless steel, electronic parts and electro-mechanics),a recycling scenario with 100 % collection rate was assumed. The plastic components are sent for energy recovery within a waste incineration process. EoL is assumed to happen within EU-28. Furthermore, a transport distance by truck of 100 km has been assumed in the model.

3.4 Cut-off criteria

In the assessment, all available data from the production process are considered, i.e. all raw materials used, auxiliary materials (e.g. lubricants), and electric power consumption - including material and energy flows contributing less than 1 % of mass or energy (if available). In case a specific flow contributing less than 1 % in mass or energy is not available, worst case assumption proxies are selected to represent the respective environmental impacts. Impacts relating to the production of machines and facilities required during production are out of the scope of this assessment.

3.5 Background data

For life cycle modelling of the considered product, Sphera's Life Cycle for Expert (LCA FE) software is used. Sphera Managed Lifecycle Content (MLC) modelling database is used as the background database of the study.

3.6 Data quality

The requirements for data quality and background data correspond to the specifications of the IBU PCR Part A. Sphera performed a variety of tests and checks during the entire project to ensure a high quality of the completed project. This obviously includes an extensive review of project-specific LCA models as well as the background data used. The technological background of the collected data reflects the physical reality of the declared products. The datasets are complete and conform to the system boundaries and the criteria for the exclusion of inputs and outputs. All relevant background datasets are taken from the Sphera MLC database.

3.7 Period under review

The period under review is 2024 (12-month average).

3.8 Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Europe

3.9 Allocation

Regarding incineration, the software model for the waste incineration plant (WIP) is adapted according to the material composition and heating value of the combusted material. In this EPD, the following specific life cycle inventories for the WIP are considered for:

- Waste incineration of paper
- Waste incineration of plastic
- Waste incineration of wood

Regarding the recycling material of metals, the metal parts in the EoL are declared as end-of-waste status. Thus, these materials are considered in module D. Specific information on allocation within the background data is given in the MLC dataset documentation.

3.10 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account. Sphera's Managed LCA Content CUP 2024.2 serves as background database for the calculation.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

The following technical information is a basis for the declared modules or can be used for developing specific scenarios in the context of a building assessment if modules are not declared (MND).

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	24	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	27.5	l/100km
Transport distance	657	km
Capacity utilisation (including empty runs)	61	%
Transport distance by ship	2620	km

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site (steel packaging)	0.30	kg
Output substances following waste treatment on site (wood packaging)	48	kg
Output substances following waste treatment on site (plastic packaging)	0.20	kg

Reference service life

Name	Value	Unit
Life Span according to the manufacturer	10	years

Operational energy use (B6)

Name	Value	Unit
Electricity consumption per RSL (365 days per year during 10 years)	11107.68	kWh
Hours per day in on mode	0.3	h
Hours per day in stand-by mode	23.7	h
Power consumption – on mode	190	W
Power consumption – stand-by mode	126	W

*Total energy consumed during the whole product life was calculated using following formula:

(W_on_mode*h_on_mode+W_idle_mode*h_idle_mode +W_stand_by_mode*h_stand_by_mode)*Life_span*days_year*0.001

Where:
• W_on mode - Energy consumption in on mode in W
• h_on mode - Operation time in on mode in hours
• W_idle_mode - Energy consumption in idle mode in W
• h_idle_mode - Operation time in idle mode in hours
• W_standby mode – Energy consumption in standby mode in W
• h_standby mode – Operation time in standby mode in hours
• Lifespan - Reference service life of product
• Days_year operation - Operation days per year
• 0.001 - Conversion factor from Wh to kWh

End of life (C1-C4)

Name	Value	Unit
Collected separately waste type (aluminium, steel, zinc, brass, plastics, stainless steel, copper, electronic, electromechanics etc.)	100.87	kg
Transport to EoL (C2)	100	km
Incineration of plastic parts	3.22	kg
Recycling (aluminium, steel, electronic, electro-mechanics, stainless steel and zinc)	97.66	kg
Landfill	45.85	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	Value	Unit
Collected separately waste type (including packaging)	149.37	kg
Recycling aluminium	26.43	%
Recycling zinc	7.36	%
Recycling stainless steel	0.66	%
Recycling steel	26.96	%
Recycling electronic	3.26	%
Recycling electro mechanics	0.71	%
Incineration of plastic parts	2.15	%
Incineration of packaging (wood and plastic) (from A5)	32.27	%
Recycling of steel packaging	0.20	%

5. LCA: Results

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MNR	MNR	MNR	X	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 piece SG Expression

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	4.3E+02	1.91E+01	8.89E+01	3.35E+03	0	1.11E+00	2.48E+01	3.45E-01	-5.1E+02
GWP-fossil	kg CO_2 eq	5.12E+02	1.89E+01	1.57E-01	3.32E+03	0	1.09E+00	2.48E+01	3.43E-01	-5.09E+02
GWP-biogenic	kg CO_2 eq	-8.25E+01	2.93E-02	8.87E+01	2.98E+01	0	2.6E-03	1.65E-03	-1.45E-06	-9.8E-01
GWP-luluc	kg CO_2 eq	3.51E-01	1.61E-01	5.23E-05	5.04E-01	0	1.83E-02	1.47E-03	2.06E-03	-1.19E-01
ODP	kg CFC11 eq	2.46E-09	1.97E-12	8.26E-13	7.52E-08	0	1.6E-13	9.28E-12	9.25E-13	-5.61E-10
AP	mol H^+ eq	3.02E+00	3.38E-01	9.4E-02	6.41E+00	0	1.49E-03	4.56E-03	2.44E-03	-2.41E+00
EP-freshwater	kg P eq	7.36E-04	4.27E-05	2.61E-07	1.38E-02	0	4.65E-06	2.3E-06	7.8E-07	-2.51E-04
EP-marine	kg N eq	5.96E-01	8.11E-02	2.02E-02	1.6E+00	0	5.41E-04	1.51E-03	6.27E-04	-4.55E-01
EP-terrestrial	mol N eq	6.62E+00	8.93E-01	2.24E-01	1.68E+01	0	6.43E-03	2.16E-02	6.91E-03	-4.97E+00
POCP	kg NMVOC eq	1.68E+00	2.31E-01	6.78E-02	4.23E+00	0	1.48E-03	4.17E-03	1.92E-03	-1.35E+00
ADPE	kg Sb eq	3.6E-02	9.92E-07	8.33E-09	6.21E-04	0	9.48E-08	8.6E-08	2.22E-08	-2.52E-02
ADPF	MJ	6.5E+03	2.12E+02	1.85E+00	6.97E+04	0	1.43E+01	1.67E+01	4.52E+00	-5.82E+03
WDP	m^3 world eq deprived	7.65E+01	1.61E-01	3.1E+00	9.18E+02	0	1.68E-02	2.61E+00	3.93E-02	-1.63E+02

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 piece SG Expression

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ	1.79E+03	1.13E+01	9.11E+02	5.03E+04	0	1.23E+00	5.27E+00	7.89E-01	-2.64E+03
PERM	MJ	9.11E+02	0	-9.11E+02	0	0	0	0	0	0
PERT	MJ	2.7E+03	1.13E+01	4.15E-01	5.03E+04	0	1.23E+00	5.27E+00	7.89E-01	-2.64E+03
PENRE	MJ	6.28E+03	2.12E+02	1.13E+01	6.97E+04	0	1.43E+01	2.32E+02	4.52E+00	-5.82E+03
PENRM	MJ	2.24E+02	0	-9.48E+00	0	0	0	-2.15E+02	0	0
PENRT	MJ	6.5E+03	2.12E+02	1.85E+00	6.97E+04	0	1.43E+01	1.67E+01	4.52E+00	-5.82E+03
SM	kg	3.38E+01	0	0	0	0	0	0	0	6.83E+01
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m^3	2.49E+00	1.26E-02	7.25E-02	3.85E+01	0	1.38E-03	6.28E-02	1.2E-03	-5.98E+00

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 piece SG Expression

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	1.47E-04	3.04E-04	7.51E-09	1.01E-04	0	5.49E-10	1.13E-08	1.13E-09	-2.57E-04
NHWD	kg	-2.63E+01	6.45E+01	2.88E-02	5.74E+01	0	2.34E-03	2.58E+00	2.29E+01	-1.74E+02
RWD	kg	1.11E+01	2.47E-01	3.29E-04	1.11E+01	0	2.61E-05	7.95E-04	4.74E-05	-2.73E-01
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	3E-01	0	0	0	1.02E+02	0	0
MER	kg	0	0	0	0	0	0	1.15E+01	0	0
EEE	MJ	7.77E-01	0	2.42E+02	0	0	0	4.43E+01	0	0
EET	MJ	1.75E+00	0	3.21E+02	0	0	0	8.1E+01	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:
1 piece SG Expression

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PM	Disease incidence	3.03E-05	5.81E-06	4.26E-07	5.36E-05	0	1.49E-08	5.39E-08	3.06E-08	-4.09E-05
IR	kBq U235 eq	2.97E+01	4.7E-02	4.64E-03	1.83E+03	0	3.79E-03	1.17E-01	5.49E-03	-3.12E+01
ETP-fw	CTUe	3.4E+03	1.57E+02	2.2E+00	2.02E+04	0	1.06E+01	8.51E+00	2.61E+00	-1.44E+03
HTP-c	CTUh	2.17E-07	3.04E-09	7.45E-09	1.13E-06	0	2.15E-10	5.09E-10	6.16E-11	-6.25E-07
HTP-nc	CTUh	5.48E-06	1.22E-07	2.61E-07	1.74E-05	0	9.64E-09	3.98E-08	2.38E-09	-5.2E-06
SQP	SQP	1.16E+04	6.22E+01	3.23E-01	2.93E+04	0	7.05E+00	4.45E+00	1.25E+00	-4.47E+02

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

6. LCA: Interpretation

This chapter contains an interpretation of the Life Cycle Impact Assessment categories. Stated percentages in the whole interpretation are related to the overall life cycle, excluding credits (module D).

The production stage (modules A1-A3) contributes between 3% and 98% to the overall results for all core environmental impact assessment categories.

Within the production stage, the main contribution to all the impact categories is the production of steel and aluminum mainly due to the energy consumption of these processes. These two materials account for approx. 55% to the overall mass of the product, therefore, the impacts are in line with the mass composition of the product. The environmental impacts for the transport (A2) have a negligible impact within this stage.

To reflect the use stage (module B6) in 10 years of service life, the energy consumption was included, and it has a relevant contribution for all core impact assessment categories considered - between 1% and 85%, with the exception of ODP (96%), EP (94%) WDP (91%). This is a result of 0.3 hours of operation in on mode and 23.7 hours in stand-by mode per day and per 365 days in a year.

In the end-of-life stage, there are loads and benefits (module D, negative values) considered. The benefits are considered beyond the system boundaries and are declared for the recycling potential of the metals and for the credits from the incineration process (energy substitution).

7. Requisite evidence

Not applicable in this EPD.

8. References

Standards

CPR
Regulation (EU) No. 305/2011, Construction Product Regulation (CPR)- laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC

DIN EN ISO 14025
DIN EN ISO 14025:2010, Environmental labels and declarations - Type III environmental declarations - Principles and procedures

EN 15804
EN15804:2012+A2:2019+AC:2021, Sustainability of construction works —Environmental Product Declarations — Core rules for the product category ofconstruction products.

2014/30/EU
European directive on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast)

2006/42/EC
European directive on machinery, and amending Directive 95/16/EC (recast)

2012/19/EU
European directive on waste electrical and electronic equipment (WEEE)

2011/65/EC
European directive on the restriction of the use of certain hazardous substances in electrical and electronical equipment, and its amendment directives including 2015/863/EC (RoHS directive)

2015/863/EU
European directive amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances (RoHS directive)

EN 60335-1

EN 60335-1: 2012 AC:2014 +A1:2019 + A2:2019 +A11:2014 +A13:2017 +A14:2019 Household and similar electrical appliances - Safety - Part 1: General requirements

EN 60335-2-103
EN 60335-2-103:2015 Household and similar electrical appliances - Safety - Part 2-103: Particular requirements for drives for gates, doors and windows

EN 61000-6-2
EN 61000-6-2: 2005 + AC:2005 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments

EN 61000-6-3
EN 61000-6-3: 2007 + A1:2011/AC:2012 + A1:2011 Electromagnetic compatibility (EMC) - Part 6-3: Generic Standards - Emission standard for residential, commercial and light-industrial environments

EN 61000-3-2
EN 61000-3-2 Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤16 A per phase)

EN 61000-3-3
EN 61000-3-3 Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤16 A per phase and not subject to conditional connection

EN ISO 13849-1
EN ISO 13849-1:2015 Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design

EN 17352
EN 17352 Power operated pedestrian entrance control equipment - Safety in use - Requirements and test methods.

EN IEC 63000
EN IEC 63000 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

EltVTR: 1997-12
EltVTR: 1997-12 Richtlinie über elektrische Verriegelungssysteme von Türen in Rettungswegen (EltVTR)

EN 13637
EN 13637 Building hardware - Electrically controlled exit systems for use on escape routes - Requirements and test methods

ANSI/CAN/UL 325
ANSI/CAN/UL 325 Door, Drapery, Gate, Louver, and. Window Operators and Systems - standard for safety.

FCC Part 15B
FCC Part 15B Unintentional Radiators

ICES-003
ICES-003 Information Technology Equipment (including Digital Apparatus)

EWC
European Waste Catalogue established by Commission Decision 2000/532/EC

ISO 9001
ISO 9001:2015, Quality management systems - Requirements with guidance for us

Further References

Sphera Managed Lifecycle Content (MLC)
Sphera Solutions, Managed LCA content dataset documentation, Sphera Solutions, Chicago, US,2023. Retrieved from https://lcadatabase.sphera.com/

Sphera's Life Cycle for Expert (LCA FE) software
Sphera Solutions, 'Life Cycle Assessment for Expert software', Sphera Solutions, Chicago, US, 2023. Retrieved from https://sphera.com/

IBU 2021
General Instructions for the EPD programme of Institut Bauen und Umwelt e.V. Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021.www.ibu-epd.com

IBU PCR Part A
Institut Bauen und Umwelt e.V., Berlin (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report Version 1.4 04-2024 www.ibu-epd.de

IBU PCR Part B
IBU PCR Part B: PCR Guidance-Texts for Building-Related Products and Services. From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU). Part B: Part B: PCR for Automatic doors, automatic gates, and revolving door systems, Version v8 (08. 2024)www.ibu-epd.com

TRACI Methodology
Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI), EPA/600/R-12/554 2012

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