ENVIRONMENTAL PRODUCT DECLARATION

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

Owner of the Declaration	ASSA ABLOY Entrance Systems
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASA-20240089-IBA1-EN
Issue date	28.01.2025
Valid to	27.01.2030

ASSA ABLOY OH1142P Dual Drive overhead sectional door

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-20240089-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

28.01.2025

Valid to

27.01.2030

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

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

ASSA ABLOY OH1142P Dual Drive overhead sectional door

Owner of the declaration

ASSA ABLOY Entrance Systems
Lodjursgatan 10
26144 Landskrona
Sweden

Declared product / declared unit

This declaration represents 1 industrial overhead sectional door with electrical operation, 3600 mm width and 3600 mm height, consisting of panels filled with water blown CFC-free polyurethane foam, panel thickness 42 mm and panel height 545 mm.

Scope:

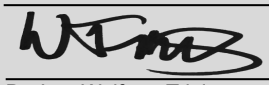
This declaration and its LCA study are relevant to the ASSA ABLOY OH1142P Dual Drive overhead sectional door.
The production location is Heerhugowaard, Netherlands and components are sourced from international tier one supplier. ASSA ABLOY OH1142P Dual Drive overhead sectional door size varies according to project requirements; a standard door 3600 mm width and 3600 mm height with insulated panels filled with CFC-free polyurethane, panel thickness 42 mm, panel height 545 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 OH1142P Dual Drive overhead sectional door

The ASSA ABLOY OH1142P Dual Drive is an overhead sectional door based on dual drive technology.

The ASSA ABLOY OH1142P Dual Drive has integrated dual drive motors eliminating the need for springs and balancing. The door runs faster, smoother, quieter and is more reliable thereby optimizing operations and improving working conditions.

Operational benefits include a lifting mechanism without wires and balancing, a drive solution for opening and closing, and a continuous power source including batteries. The door is made of insulated panels. These panels are designed without thermal bridge to provide minimal thermal transmittance, which reduces energy cost.

The surface of the door leaf panels is a characteristic diamond grid steel or aluminum sheet. The diamond grid steel is represented in this declaration The pre-coated steel panels for the door leaf fulfill outdoor corrosion resistance category RC3 according to EN 10169.

The ASSA ABLOY OH1142P Dual Drive overhead sectional door has been designed to meet all operational and safety requirements in the European Directives and the standards issued by the European Standardization Committee, CEN).

The door has 3 primary parts:
1) Door leaf
2) Track set
3) Operating system

For the placing on the market in the EEA, Switzerland and Turkey the Construction Products Regulation (EU) No 305/2011 applies. The product needs a Declaration of Performance and CE marking under consideration of the Construction Products Regulation and the harmonized standard EN 13241:2003+A2:2016 Industrial, commercial and garage doors and gates — Product standard — Part 1: Products without fire resistance or smoke control characteristics.

Harmonized European standards and associated updated editions that have been applied:

- EN 13241:2003+A2:2016 Industrial, commercial, garage doors and gates - Product standard, performance characteristics.
- EN 12453:2017+A1:2022 Industrial, commercial and garage doors and gates – Safety in use of power operated doors – Requirements and test methods EN 12604:2017+A1:2020
- EN 61000-6-3: 2021 Electromagnetic compatibility (EMC) — Part 6-3: Generic standards — Emission standard for residential, commercial and light-industrial environments
- EN 61000-6-2: 2019 Generic standards - Immunity for industrial environments
- EN 12978:2003+A1:2009
- EN 60335-1:2012+A11:2014+A13:2017+A14:2019+A15:2021+A1:2019+A2:2019
- EN 60335-2-103: 2015 Household and similar electrical appliances -Safety -Part 2: Particular requirements for drives for gates, doors and windows.
- EN ISO 13849-1 Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design

Other standards or technical specifications, which have been applied:

- Wind load: EN12424 Class 3 (Higher classes on request)
- Thermal transmittance: EN12428 1.0 W/(m².K) Steel door (Door surface 5000 x 5000 mm) 1.70 W/(m².K) Steel door with windows (4000 x 3840 mm)
- Water penetration: EN12425 Class 3 (Door surface 4000 x 3310 mm)
- Air permeability: EN12426 Class 3 (Door surface 4000 x 3310 mm)
- Acoustic insulation: EN ISO 10140-2 R=25 dB (Door surface 2590 x 4210 mm)

The electrical unit as identified is in compliance with the following directives:

- 2006/42/EC Machinery Directive (MD)
- 2014/30/EU Electromagnetic Compatibility Directive (EMCD)
- 2011/65/EU RoHS
- 2015/863/EU RoHS

For the application and use, the respective national provisions apply.

2.2 Application

ASSA ABLOY OH1142P Dual Drive overhead sectional doors have been designed with a modified control system and reinforced construction to increase speed and benefit your business. Speed improves your working environment, increases safety, reduces energy expenses and more.

2.3 Technical Data

The table presents the technical properties of the ASSA ABLOY OH1142P Dual Drive overhead sectional door:

Technical data and constructional data (specify system and properties)

Name	Value	Unit
Height (Overhead sectional door)	1.8 - 3.6	m
Width (Overhead sectional door)	1.2 - 3.6	m
Thickness of panel (Overhead sectional door)	0.042	m
Material of panel (Overhead sectional door)	Diamond grid steel or aluminum sheet	
FIlling of panel (Overhead sectional door)	CFC-free polyurethane, flame retardant EN 13501-1	
Weight of panel (Overhead sectional door)	13	kg/m^2
Weight (Overhead sectional door)	To get the total weight of the door add 15 kg for the drive unit located on the bottom panel	t
Colour inside	RAL 9002	
Colour outside	13 standard RAL colors	
Track types	VL, HL	
Safety devices	safety edge and optional stationary photocell	
Windows (optional)	Optional: DARP, TARP, DAOP, ALRB, ALBS, Framed section	
Locking unit	Tourque lock Optional: mechanical lock	
Electrical operation	Optional: Automated operation, Access control, Safety functions	
Opening/closing speed (Overhead sectional door)	Up to 0.3	m/s
Life time expectations (Overhead sectional door)	200000	cycles
Thermal transmittance EN 12428 (Overhead sectional door)	1	W/(m^{2}K)
Air permeability coefficient acc. to EN 12426 (Overhead sectional door)	6	m^3/m^2 h
Water penetration acc. to EN12425 Class 3 (Overhead sectional door)	>50	Pa
Airborne sound insulation acc. to EN ISO 10140-2 (Overhead sectional door)	25	dB
Resistance to wind loads acc. to EN 12424 Class 3 (Overhead sectional door)	700	N/m^2
Power input "Standby"	6.9	W
Power input "On mode"	665.7	W

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to EN 13241:2003+A2:2016, Industrial, commercial, garage doors and gates - Product standard, performance characteristics.

2.4 Delivery status

ASSA ABLOY OH1142P Dual Drive overhead sectional door unit with door size of width 3600 mm and height 3600 mm is delivered in parts ready for installation. All necessary installation material is included. For every track type, ASSA ABLOY offers specific installation kits to position the door in the building façade.

2.5 Base materials/Ancillary materials

The average composition for ASSA ABLOY OH1142P Dual Drive overhead sectional door is as following:

Name	Value	Unit
Aluminum	1.87	%
Brass	0.03	%
Copper	0.001	%
Plastics	5.87	%
Steel	77.08	%
Electronics	1.45	%
Electro mechanics	1.72	%
Others	11.98	%
Total	100	%

2.6 Manufacture

The final manufacturing and assembly processes occur at the factory in Heerhugowaard, The Netherlands. The electronics are produced in Ostrov u Stribra, Czech Republic. The tracks are produced in Debrecen, Hungary. The factors in the Netherlands has a quality management system certified in accordance withISO 9001 & ISO 14001.

Offcuts and scraps during the manufacturing process are directed to a recycling unit. Waste is sent for disposal. Waste codes according to European Waste Catalogue and Hazardous Waste List -Valid from 1st July 2015.

Offcuts and scraps during the manufacturing process are directed to a recycling unit. Waste is sent for disposal. Waste codes according to European Waste Catalogue and Hazardous Waste List -Valid from 1 January 2002.

- EWC 12 01 01 ferrous metal filings and turnings
- EWC 12 01 03 non-ferrous metal filings and turnings
- EWC 17 02 03 plastic
- EWC 17 04 01 copper, bronze, brass
- EWC 17 04 02 aluminium
- EWC 17 04 05 iron and steel
- EWC 17 04 11 cables with the exception of those outlined in 17 04 10

2.7 Environment and health during manufacturing

ASSA ABLOY Entrance Systems is committed to producing and distributing door opening solutions with minimal environmental impact, where health & safety is the primary focus for all employees and associates.

- Environmental operations, Greenhouse gases, energy, water, waste, Volatile Organic Compound (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. Management of ASSA ABLOY Entrance Systems is aware of their roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance.
- Any waste metals during machining are separated and recycled.

2.8 Product processing/Installation

The door components are supplied ready for installation. The ASSA ABLOY OH1142P Dual Drive door is shipped to site in pre-assembled components. The components are assembled using simple tools including drills and hand tools. The

installation is performed by qualified installation technicians.

2.9 Packaging

Packaging exists for the purpose of protection during transportation. ASSA ABLOY OH1142P Dual Drive overhead sectional door components are packaged in polystyrene plastic and corrugated cardboard. All of these packaging components are standard industry types. The cardboard is recyclable.

The packaging includes cardboard/paper (78.59%), plastics (16.10%) and wood (5.31%).

All materials incurred during installation are sent to a recycling unit (e.g. steel) and waste incineration plant (wood, paper and plastic) for its energy recovery.

Waste codes according to European Waste Catalogue and Hazardous Waste List -Valid from 1 July 2015.

- EWC 15 01 01 paper and cardboard packaging
- EWC 15 01 03 wooden packaging
- EWC 15 01 02 plastic packaging

2.10 Condition of use

Regular inspections by a trained and qualified person is recommended a minimum of one visit per year or more.
Monthly examination of the ASSA ABLOY OH1142P Dual Drive overhead sectional door:

- Use a soft brush and a mild detergent to clean the track set and the door seals.
- Make sure there are no loose screws, bolts or nuts on the door leaf or the track set. If necessary, tighten all loose screws, bolts and nuts.
- Examine all door leaf hinges, door seals, rollers and roller holders for damage. If damage is found, contact the local service center for advice.
- Examine the door chains for damage and corrosion. If damage or corrosion is found, contact the local service center for advice.
- Lubricate the metal door-leaf hinges with oil (SAE 20).

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 reference service life of more than 200.000 door cycles when service/replacement program has been performed. For this EPD the lifetime of 10 years was considered.

2.13 Extraordinary effects

Fire

Test has been conducted according to EN13501-1. The product is not fireproof. However, the product wall surfaces consist of a large amount of steel, which does not add to the spread of fire.

Fire protection

Name	Value	Unit
Building material class	C	
Burning droplets	d0	
Smoke gas development	s3	

Water

Contains no substances that impact water in case of a flood. In case of a flood, electric operation of the device will 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 opening to another.
All recyclable materials are directed to a recycling unit where they are recycled (brass, electronics, electro-mechanics, stainless steel, steel, and aluminium).

On the other hand, the plastic components are sent to waste incineration plant for its energy recovery.
Waste codes according to European Waste Catalogue and Hazardous Waste List -Valid from 1 July 2015.

- EWC 12 01 01 Ferrous metal filings and turnings
- EWC 12 01 03 Non-ferrous metal filings and turnings
- EWC 16 02 14 Used devices with the exception of those outlined in 16 02 09 to 16 02 13
- EWC 17 02 03 plastic
- EWC 17 04 01 copper, bronze, brass
- EWC 17 04 02 aluminium
- EWC 17 04 05 iron and steel
- EWC 17 04 11 cables with the exception of those outlined in 17 04 10

2.15 Disposal

The product can be mechanically dissembled to separate the different materials. The majority, of components are steel and aluminum which will be recycled. The plastic components are used for energy recovery in an incineration plant.
The battery is sent back to the battery manufacturer for safe and correct handling.
No disposal is foreseen for the product nor for the corresponding packaging.

2.16 Further information

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Sweden
www.assaabloyentrance.com

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of ASSA ABLOY OH1142P Dual Drive overhead sectional door 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 OH1142P Dual Drive overhead sectional door for 10 years.

Declared unit

Name	Value	Unit
Mass (without packaging)	212.20	kg
Mass packaging (paper wood, copper and plastics)	26.01	kg
Declared unit (Dual Drive overhead sectional door)	1	pce.
Mass reference	212.2	kg/pce
Dimension (Height x Width)	3600 x 3600	mm

3.2 System boundary

Type of the EPD: cradle to gate - with options

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 – De-construction/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 rapid roll door 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 0.03 hours in on mode and 23.97 hours in stand-by per day (220 days per year in use, 10 years lifetime); the power consumption throughout the whole life cycle is 407.80 kWh.

EoL:
In the End-of-Life stage, for all the materials from the product which can be recycled (steel, aluminum, electronic parts, electro-mechanics, copper, stainless steel and brass), 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-27. 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 Assessment 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 2023 (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 Sphera 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 i.e. MLC

database CUP version 2020.1 (former GaBi) serves as background database for the calculation.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

Packaging material containing biogenic carbon includes wood (1.38 kg)and paper (20.44kg).

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	9.34	kg C

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

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).

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel with maximum load (27t payload)	27.5	l/100km
Transport distance by truck (primary target market is EU 28)	750	km
Capacity utilisation (including empty runs)	61	%
Transport distance by ship	21	km

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site (paper/cardboard packaging)	20.44	kg
Output substances following waste treatment on site (steel packaging)	0	kg
Output substances following waste treatment on site (wood packaging)	1.38	kg
Output substances following waste treatment on site (plastic packaging)	4.19	kg

Reference service life

Name	Value	Unit
Life Span according to the manufacturer	10	a

Operational energy use (B6)

Name	Value	Unit
Electricity consumption per RSL (15 years, 220 days per year)	407.8	kWh
Hours per day in on mode	0.03	h
Hours per day in stand-by mode	23.97	h
Hours per day in idle mode	0	h
Power consumption – on mode	665.66	W
Power consumption – stand-by mode	6.90	W
Power consumption – idle mode	0	W

For the remaining days (145 days) the power is being switched off.

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

(W_active_mode*h_active_mode+W_idle_mode*h_idle_mode +W_stand_by_mode*h_stand_by_mode)*Life_span*days_year*0.001

Where:

- W_active_mode - Energy consumption in active mode in Watts
- h_active_mode - Operation time in active mode in hours
- W_idle_mode - Energy consumption in idle mode in Watts
- h_idle_mode - Operation time in idle mode in hours
- W_stand_by_mode - Energy consumption in stand-by mode in Watts
- h_stand_by_mode - Operation time in stand-by mode in hours
- Life_span - Reference service life of product
- days_year - 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, brass, plastics, stainless steel, copper, electronic, electromechanics etc.)	186.78	kg
Transport to EoL (C2)	100	km
Incineration of plastic parts	12.47	kg
Incineration of paper	0.00	kg
Recycling (aluminium, steel, copper, electronic, electro-mechanics, stainless steel and brass)	174.31	kg
Landfill	25.42	kg

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

Name	Value	Unit
Collected separately waste type (including packaging)	212.79	kg
Recycling aluminium	1.87	%
Recycling brass	0.03	%
Recycling copper	0.0001	%
Recycling stainless steel	0.00	%
Recycling steel	76.87	%
Recycling electronic	1.44	%
Recycling electro mechanics	1.71	%
Incineration of plastic parts	7.83	%
Incineration of paper	9.61	%
Incineration of packaging (paper, wood and plastic) (from A5)	12.22	%
Recycling of steel packaging	0.00	%

5. LCA: Results

Results shown are calculated according to EN 15804+A2.

Note:
EP-freshwater: This indicator has been calculated as 'kg P eq' as required in the characterization model (EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe; http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml).

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: One Piece OH1142P Dual Drive overhead sectional door

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	9.73E+02	1.08E+01	2.9E+01	1.65E+02	0	1.28E+00	1.08E+02	2.66E+00	-4.12E+02
GWP-fossil	kg CO_2 eq	9.94E+02	1.08E+01	7.26E-01	1.64E+02	0	1.27E+00	1.06E+02	2.66E+00	-4.12E+02
GWP-biogenic	kg CO_2 eq	-2.2E+01	0	2.83E+01	5.47E-01	0	0	2.55E+00	0	-4.16E-02
GWP-luluc	kg CO_2 eq	7.14E-01	8.68E-02	4.77E-04	2.38E-01	0	1.03E-02	4.68E-03	3E-04	-6.63E-02
ODP	kg CFC11 eq	4.17E-08	1.3E-15	5.22E-15	3.61E-12	0	1.53E-16	4.56E-14	3.01E-15	8.31E-12
AP	mol H^+ eq	3E+00	1.36E-02	8.12E-03	3.62E-01	0	1.31E-03	1.84E-02	1.91E-03	-1.35E+00
EP-freshwater	kg P eq	2.16E-03	3.26E-05	1.02E-06	4.38E-04	0	3.87E-06	6.98E-06	6.71E-07	-1.49E-04
EP-marine	kg N eq	5.79E-01	3.88E-03	2.93E-03	8.05E-02	0	3.81E-04	4.84E-03	8.94E-04	-2.49E-01
EP-terrestrial	mol N eq	6.21E+00	4.6E-02	3.65E-02	8.46E-01	0	4.58E-03	7.4E-02	1.06E-02	-2.7E+00
POCP	kg NMVOC eq	1.9E+00	1.08E-02	7.77E-03	2.21E-01	0	1.06E-03	1.41E-02	2.31E-03	-8.06E-01
ADPE	kg Sb eq	1.3E+04	1.44E+02	9.15E+00	2.89E+03	0	1.7E+01	5.28E+01	2.65E+00	-3.9E+03
ADPF	MJ	1.53E-02	7.71E-07	8.25E-08	4.75E-05	0	9.13E-08	6.48E-07	3.32E-08	-1.49E-02
WDP	m^3 world eq deprived	4.55E+01	9.6E-02	3.59E+00	3.58E+01	0	1.14E-02	1.12E+01	5.76E-01	-9.3E+00

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: One Piece OH1142P Dual Drive overhead sectional door

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ	7.36E+03	8.03E+00	4.53E+02	1.28E+03	0	9.53E-01	1.36E+01	6.98E-01	1.96E+02
PERM	MJ	4.53E+02	0	-4.53E+02	0	0	0	0	0	0
PERT	MJ	2.3E+03	8.03E+00	1.66E+00	1.28E+03	0	9.53E-01	1.36E+01	6.98E-01	-1.96E+02
PENRE	MJ	3.2E+04	1.44E+02	8.94E+01	2.89E+03	0	1.7E+01	6.87E+02	2.65E+00	-3.92E+03
PENRM	MJ	6.99E+02	0	-8.69E+01	0	0	0	-6.12E+02	0	0
PENRT	MJ	1.3E+04	1.44E+02	9.15E+00	2.89E+03	0	1.7E+01	5.29E+01	2.65E+00	-3.92E+03
SM	kg	1.57E+02	0	0	0	0	0	0	0	0
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	3.29E+00	9.3E-03	8.46E-02	1.48E+00	0	1.1E-03	2.68E-01	1.37E-02	-1.03E+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: One Piece OH1142P Dual Drive overhead sectional door

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	1.29E-02	6.65E-06	1.35E-08	1.19E-06	0	7.9E-07	1.43E-07	1.53E-08	-2.72E-06
NHWD	kg	3.13E+01	2.2E-02	9.08E-01	2.05E+00	0	2.6E-03	1.01E+01	1.65E+00	-1.41E+01
RWD	kg	3.15E-01	1.78E-04	4.81E-04	4.38E-01	0	2.1E-05	3.5E-03	1E-04	-7.22E-02

CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	1.69E+02	0	0
MER	kg	0	0	2.04E+01	0	0	0	0	0	0
EEE	MJ	0	0	4.38E+01	0	0	0	2.39E+02	0	0
EET	MJ	0	0	7.95E+01	0	0	0	4.28E+02	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: One Piece OH1142P Dual Drive overhead sectional door

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PM	Disease incidence	3.26E-05	1.1E-07	4.5E-08	3.04E-06	0	7.78E-09	2.2E-07	2.16E-08	-1.55E-05
IR	kBq U235 eq	4.18E+01	2.57E-02	7.44E-02	7.19E+01	0	3.04E-03	5.15E-01	9.1E-03	-1.55E+01
ETP-fw	CTUe	4.59E+03	1.01E+02	4.34E+00	1.23E+03	0	1.2E+01	3.47E+01	1.23E+00	-8.52E+02
HTP-c	CTUh	7.29E-07	2.12E-09	2.3E-10	3.41E-08	0	2.51E-10	1.9E-09	1.73E-10	-5.06E-07
HTP-nc	CTUh	1.5E-05	1.1E-07	9.95E-09	1.26E-06	0	1.3E-08	1.91E-07	1.2E-08	-2.72E-06
SQP	SQP	5.79E+03	5.01E+01	2.43E+00	9.19E+02	0	5.95E+00	1.4E+01	8.67E-01	-2.81E+01

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 47% and 99% to the overall results for all core environmental impact assessment categories, except for the global warming potential – biogenic (GWP-biogenic). This result is mainly related to the extraction of renewable raw materials (A1). Within the production stage, the main contribution for 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. 70% 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), the energy consumption was included, and it has a contribution for all core impact assessment categories considered - between 6% and 36%, with the exception of ODP (2%) and ADPE (4%). This is a result of 0.03 hours of operation in on mode and 23.97 hours in stand-by mode per day and per 220 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.

7.1 Evidences Depending on the application various evidences are relevant.

8. References

Standards

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

DIN EN ISO 10140-2
DIN EN ISO 10140-2:2010, Acoustics - Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation (ISO 10140-2:2010); German version EN ISO 10140-2:2010

DIN EN ISO 13849-1
DIN EN ISO 13849-1:2016, Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design

DIN 4102
DIN 4102-1 B2:1998, Reaction to fire tests - Ignitability of building products subjected to direct impingement of flame.

DIN EN 12424

DIN EN 12424:2000, Industrial, commercial and garage doors and gates - Resistance to wind load - Classification; German version EN 12424:2000

DIN EN 12426
DIN EN 12424:2000, Industrial, commercial and garage doors and gates. Air permeability. Classification; German version EN 12424:2000

DIN EN 12428
DIN EN 12428:2013, Industrial, commercial and garage doors - Thermal transmittance - Requirements for the calculation; German version EN 12428:2013

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

EN ISO 10140-2
EN ISO 10140-2:2010, Acoustics - Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation (ISO 10140-2:2010); German version EN ISO 10140-2:2010

EN 12425
EN 12425:2000, Industrial, commercial and garage doors and gates - Resistance to water penetration - Classification; German version EN 12425:2000

EN 12453
EN 12453:2017, Industrial, commercial and garage doors and gates – Safety in use of power operated doors – Requirements and test methods

EN 13241-1
EN 13241:2003+A2:2016, Industrial, commercial, garage doors and gates - Product standard, performance characteristics

EN 15804+A2
EN 15804:2014+A2:2020, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

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

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

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

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

Regulation (EU) No 305/2011
Regulation of the European parliament and the council laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC

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

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)

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

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

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

Further References

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Sphera Solutions, Managed LCA content dataset documentation, Sphera Solutions, Chicago, US, 2023. Retrieved from https://sphera.com/product-sustainability-gabi-data-search/

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/life-cycle-assessment-lca-software/.

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General Instructions for the EPD programme of Institut Bauen und Umwelt e.V. Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021.
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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 1.3 08-2022
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IBU PCR Part B
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