ENVIRONMENTAL PRODUCT DECLARATION

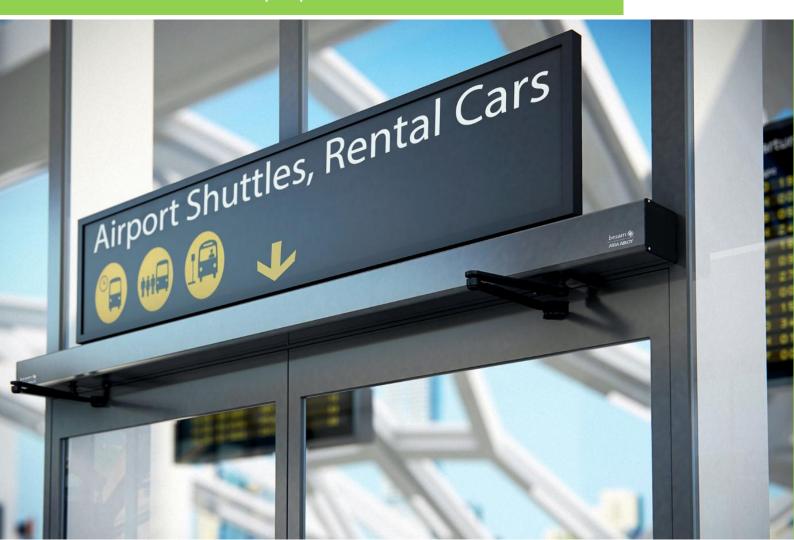
as per ISO 14025 and EN 15804

Owner of the Declaration	ASSA ABLOY Entrance Systems
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASA-20150122-IBA1-EN
Issue date	18.05.2015
Valid to	17.05.2020

Besam SW200i swing door operator ASSA ABLOY Entrance Systems



www.bau-umwelt.com / https://epd-online.com



1. General Information

ASSA ABLOY Entrance Systems

Programme holder Owner of the Declaration IBU - Institut Bauen und Umwelt e.V. ASSA ABLOY Entrance Systems AB Panoramastr. 1 Lodjursgatan 10 10178 Berlin SE-261 44 Landskrona Germany Sweden **Declared product / Declared unit Declaration number** EPD-ASA-20150122-IBA1-EN The declaration represents 1 automatic swing door operator Besam SW200i This Declaration is based on the Product Scope: **Category Rules:** This declaration and its LCA study is relevant to Besam SW200i swing door operator. The final PCR Automatic doors, automatic gates, and revolving door systems (door systems) assembly and production stage occurs in Ostrov u Stribra, Czech Republic at D5 Logistic Park 34901 (PCR tested and approved by the independent expert Ostrov u Stribra, Czech Republic. Components are committee (SVA)) sourced from international tier one suppliers. The Besam SW200i operator cover length vary according to project requirements; an operator with cover **Issue date** standard length 716 mm and push arm system is used 18.05.2015 in this declaration. The owner of the declaration shall be liable for the underlying information and evidence; Valid to the IBU shall not be liable with respect to manufacturer 17.05.2020 information, life cycle assessment data and evidences. Verification Nermanes The CEN Standard EN 15804 serves as the core PCR Independent verification of the declaration and data according to ISO 14025 Prof. Dr.-Ing. Horst J. Bossenmayer internally externally X (President of Institut Bauen und Umwelt e.V.) MAMM Dr. Wolfram Trinius Dr.-Ing. Burkhart Lehmann (Managing Director IBU) (Independent verifier appointed by **Product**

2.1 Product description

Product name: Besam SW200i

Product characteristics: Automatic, robust, electromechanical swing door operator

The operator works electro-mechanically. It opens with motor and closes with motor and spring. The opening and closing speeds can be varied individually. The motor, control unit, gear box and spring are combined into a compact unit and mounted within the cover. The operator is connected to the door leaf with either a pushing or a pulling arm system.

The Besam SW200i can handle heavy doors up to 320 kg and is designed for applications that require highly intelligent functions. The smart control unit offers added-value features like double-door controls and monitored battery backup for convenience. Push-and-Go opens the door automatically when manually pushed from the closed position and Power Assist provides motorized assistance when the door is pulled

opened by hand. Automatic swing door operators are generally made of metal and plastic.

The Besam SW200i has been designed to meet all operational and safety requirements in the European Directives and the standards issued by the European Standardization Committee (CEN).

2.2 Application

The Besam SW200i operator is suitable for both external and internal swing doors and can be retrofitted with existing doors.

Besam SW200i swing door operator

The Besam SW 200i facilitates entry and exit in buildings, and this widely-used operator can be found on applications ranging from healthcare facilities to the public sector.

Packed with the most innovative and advanced technological features, the Besam SW200i performs to the highest standards in the industry with unique features such as 180 degree opening and stack pressure management.

The operator can be mounted on either side of the door for pull or push action and is suitable for single or double doors.

2.3 Technical Data

The product has the following technical properties:

Features

i cutures		
Surface	Mounted	
Length (standard cover)		
	lenghts available	
Height	110 mm	
Depth	130 mm	

Inertia	Max 160 kg/ m ²	
Profile finish	anodized aluminum,	
	RAL colors available on	
	request	
Performance		
Mains power supply	100-240 V AC+10/-15%	

Mains power supply	50/60Hz,mains fusemax 10A (building installation)	
Power consumption	Max. 300W	
Auxiliary voltage	24 V DC, max. 700 mA	
Opening time (0° - 80°)	variable between 2-12	
	seconds	
Closing time (90° - 10°)	variable between 4 - 12	
	seconds	
HOLD open time	1.5-30 seconds	
Ambient temperature	-20°C to +45°C	

2.4 Placing on the market / Application rules

For the placing on the market in the EEA, Switzerland and Turkey the following European directives apply to the Besam SW200i are:

2004/108/EC Electromagnetic Compatibility Directive (EMCD)

2006/42/EC Machinery Directive (MD)

These directives provides 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 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 16005 Power operated pedestrian doorsets - Safety in use -Requirements and test methods.

Other standards or technical specifications, which have been applied:

DIN 18650-1 Powered pedestrian doors - Part 1: Product requirements and test methods DIN 18650-2 Powered pedestrian doors - Part 2: Safety at powered pedestrian doors EN 60335-2-103 Household and similar electrical appliances -Safety -Part 2: Particular requirements for drives for gates, doors and windows IEC 600335-1 Household and similar electrical appliances -Safety -Part 1: General requirements IEC 60335-2-103 Household and similar electrical appliances Safety Part 2-103: Particular requirements for drives for gates, doors and windows. Disposal of the product is subject to the WEEE Directive within Europe, Directive 2012/19/EU

For the application and use the respective national provisions apply.

2.5 Delivery status

The Besam SW200i is delivered ready for installation.

2.6 Base materials / Ancillary materials

The average composition of Besam SW200i is as follows:

Component	Percentage in mass (%)
Aluminium	22.02
Brass	0.02
Copper	2.33
Lead	0.00
Plastics	3.34
Stainless steel	0.64
Steel	55.54
Zinc	8.89
Glass	0.05
Electronic	4.16
Electro_mechanics	0.16
Others	2.85
Total	100.0

2.7 Manufacture

The primary manufacturing processes are made by tier one suppliers and the final manufacturing processes for operator units occur in factory in Ostrov, Czech Republic. The profiles are machined and surface treated; either anodized (externally) or powder coated (internally). Other parts as electronics etc. arrives from tier one suppliers or the factory in China and a final assembly is done in Ostrov. The operators are packed in cardboard boxes and forwarded to on-site installation. The certified quality management system, EN ISO 9001:2008, ensures high standards. Offcuts and scraps during the manufacturing process are directed to a recycling unit. Wastewater are cleared on-site and 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 08 02 01 Waste coating powders EWC 12 01 05 Plastics

2.8 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, GHG, energy, water, waste, VOC, surface treatment and H&S 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. The management of ASSA ABLOY Entrance Systems is aware of their environmental roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance.
- Preparation and manufacturing conditions (including the process of powder coating) 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.



2.9 Product processing/Installation

The Besam SW200i is supplied ready for installation. The installation is performed by certified installation technicians.

2.10 Packaging

The Besam SW200i is packed in cardboard packaging. The cardboard is recyclable.

80% of carton is made from recycled material. 100% of packaging paper is made from recycled material.

Material	Value (%)
Cardboard/paper	99.87
Plastics	0.13
Total	100.0

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

Waste codes according to European Waste Catalogue and Hazardous Waste List - Valid from 1 January 2002.

EWC 15 01 01 paper and cardboard packaging EWC 15 01 02 plastic packaging

2.11 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 "Service Log Book".

Regular inspections and cleaning should be performed by the owner of the product, according to "Users Manual"

The best way to remove dust and dirt from the Besam SW200i is to use water and a soft cloth or a sponge. A gentle detergent may be used. To maintain the quality of the enamel layer, the surfaces should be cleaned three times/year (once/four month's period). The cleaning should be documented.

- Do not expose profiles to alkalis. Aluminum is sensitive to alkalis.
- Do not clean with high pressure water. Operator, programme selector and sensor may be damaged and water may enter the profiles.
- Do not use polishing detergent.
- Do not scrub with materials like Scotch-brite, as this will cause mechanical damage.

2.12 Environment and health during use

There is no harmful emissive potential. Minimal risk for personal injury if correctly configured and maintenance recommendations apply.

2.13 Reference service life

The product has a reference service life of more than 1,000,000 cycles and 10 years of standard daily use (with the recommended maintenance and service program). For this EPD a lifetime of 10 years was considered.

2.14 Extraordinary effects

Fire

The Besam SW200i is tested for usage in fire and smoke protection doors according to EN1634-1.

Water

Contains no substances that have any impact on water in case of flood. Product operation can be influenced.

Mechanical destruction

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

2.15 Re-use phase

The product is possible to re-use during the reference service life and be moved from one door to another. The majority, by weight, of components is aluminum alloy and steel which can be recycled. The plastic components can be used for energy recovery within a waste incineration process.

All materials are directed to a recycling unit. The components made of aluminum alloy, steel, and stainless steel can be recycled. The plastic components can be used for energy recovery within a waste incineration process.

Waste codes according to European Waste Catalogue and Hazardous Waste List - Valid from 1 January 2002.

EWC 16 02 13* discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12

EWC 17 02 03 plastic

EWC 17 04 01 copper, bronze, brass

EWC 17 04 02 aluminum

EWC 17 04 05 iron and steel

EWC 17 04 11 Cables with the exception of those outlined in 17 04 10 $\,$

Disposal of the product is subject to the WEEE Directive within Europe, Directive 2012/19/EU.

2.16 Disposal

The requirements on waste disposal and recycling listed in the European Waste Catalogue (EWC) should be followed. The requirements on waste disposal and recycling listed in the European Waste Catalogue (EWC) should be followed. As the product contains no substances harmful to the environment or human health, the entire system can be safely placed in a landfill site in cases where no waste recycling technologies are available.

In this EPD, small parts of product as well as product parts made of glass were treated as a waste for landfill:

EWC 17 02 02 glass

17 09 04 mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

2.17 Further information

ASSA ABLOY Entrance Systems AB Lodjursgatan 10 SE-261 44 Landskrona Sweden www.assaabloyentrance.com

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of the Besam SW200i operator as specified in Part B requirements on the EPD for Doors, windows, shutters, and related products/IBU PCR Part B/.PCR Automatic doors, automatic gates, and revolving door systems (door systems).

Declared unit

Name	Value	Unit
Declared unit	1	piece of operator
Mass product (without packaging)	15.07	kg
Mass packaging	1.50	kg
Conversion factor to 1 kg	0.066	-

3.2 System boundary

Type of the EPD: cradle to gate - with options The following life cycle phases were considered for Door Closer:

Production stage:

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

Construction stage:

• A5 – Packaging waste processing

Use stage related to the operation of the building includes:

• B6 – Operational energy use (Energy consumption for operation)

End-of-life stage:

- C2 Transport to waste processing
- C3 Waste processing for recycling and
- C4 Disposal (landfill)

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.

 D - Declaration of all benefits or recycling potential from EOL and A5

3.3 Estimates and assumptions

Use phase:

For the use phase, it is assumed that the swing door operator is used in the European Union, thus an EU electricity grid mix is considered within this stage.

EoL:

In the End-of-Life phase, for materials which can be recycled, a recycling scenario with 100% collection rate was assumed.

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), thermal energy consumption 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 modeling of the considered products, the GaBi 6 Software System for Life Cycle Engineering, developed by PE INTERNATIONAL AG, is used /GaBi 6 2013/. The GaBi-database contains consistent and documented datasets which are documented in the online GaBi-documentation /GaBi 6 2013D/. To ensure comparability of results in the LCA, the basic data of GaBi database were used for energy, transportation and auxiliary materials.

3.6 Data quality

The requirements for data quality and background data correspond to the specifications of the /IBU PCR PART A/.

PE INTERNATIONAL performed a variety of tests and checks during the entire project to ensure 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 GaBi 6 software database. The last revision of the used background data has taken place not longer than 10 years ago.

3.7 Period under review

The period under review is 2013/14 (12 month average).

3.8 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:

- Waste incineration of plastic
- Waste incineration of paper

• Waste incineration of electronic scrap 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 GaBi dataset documentation.

3.9 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.

4. LCA: Scenarios and additional technical information

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site Packaging (paper)	1.50	kg
Output substances following waste treatment on site Packaging (plastics)	0.002	kg

Reference service life

Name	Value	Unit
Reference service life	10	а

Operational energy use (B6)

Name	Value	Unit
Electricity consumption	1971	kWh
Days per year in use	365	days
Hours per day in on mode	10	h
Hours per day in stand-by mode	6	h
Hours per day in idle mode	8	h
Power consumption in on mode in W	40	W
Power consumption in idle mode in W	10	W
Power consumption in off mode in W	10	W

End of life (C1-C4)

Name	Value	Unit
Collected separately Aluminium, brass, copper, stainless steel, steel, zinc, electronic, electro mechanics, plastics	14.63	kg
Collected as mixed construction waste construction waste for landfilling	0.44	kg
Reuse plastic parts	0.50	kg
Recycling Steel, stainless steel, aluminium, brass, copper, electronics	14.13	kg
Landfilling glass, other construction waste for landfilling	0.44	kg

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

Name	Value	Unit
Collected separately waste type Besam SW200i (including	16.57	kg
packaging)	00.00	0/
Recycling Secondary Aluminium	20.02	%
Recycling Brass	0.02	%
Recycling Copper	2.12	
Recycling Steel	50.50	%
Recycling Stainless steel	0.58	%
Recycling Zinc	8.08	%
Recycling Electronic and electro- mechanics	3.93	%
Reuse Plastic parts	3.04	%
Reuse Paper packaging (from A5)	9.06	%
Reuse Plastic packaging (from A5)	0.01	%
Loss Construction waste for landfilling (no recycling potential)	2.64	%

5. LCA: Results

Results shown below were calculated using CML 2001 – Apr. 2013 Methodology.

DECO	חוחי			eve	TEM	POLINI							<u> </u>				
DESC	RIP	TION C		- 515		BOON	DARY	X = 1	NCLUD	ED IN	LCA; I	VINL) = I	MODU	JLEI		CLARED) BENEFITS AND
PRO	PRODUCT STAGE		CONSTRUCTI ON PROCESS STAGE			USE STAGE							END OF LIFE STAGE				LOADS BEYOND THE SYSTEM BOUNDARYS
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement ¹⁾	Refurbishment ¹⁾	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
Х	Х	Х	Х	Х	MN			MNE		Х	MND	MN		Х	Х	Х	Х
RESL	JLTS	S OF TH		A - EN	VIRC	ONMEN	ITAL IN	IPAC	T: One	piece	of Bes	sam	SW	200i			
Param	eter	Unit		A1-3		A4		45	B6		C2			C3		C4	D
GWI	Р	[kg CO eq.]	2-	1.59E+02	2	7.99E-01	2.14	1E+00	9.36E+	02	7.88E-02	2	7	.55E-02		1.44E+00	-4.82E+01
ODF	þ	[kg CFC eq.]	11-	3.13E-08	3	3.83E-12	9.79	9E-12	6.41E-	07	3.77E-13	3	5	.16E-11		4.33E-12	1.30E-08
AP		[kg SO eq.]	2-	1.14E+00)	3.66E-03	3 4.88	3E-04	4.41E+	00	3.61E-04	1	3	.56E-04		4.09E-04	-2.84E-01
EP		[kg PO ₄ eq.]	3	8.27E-02			4 8.5 [,]	1E-05	2.49E-	01	8.24E-05	5	2	.00E-05		4.44E-05	-1.45E-02
POC	P	[kg ether eq.]	ne-			-1.18E-03	3 3.46	6E-05	2.62E-	01	-1.16E-04	4	2	.11E-05		2.22E-05	-1.78E-02
ADP	E	[kg Sb-e	· q .]					9E-08	1.30E-					.04E-08		1.36E-07	-1.33E-02
ADP	F	[MJ]	1.81E+03			1.10E+01		6.01E-00		1.06E+04 1.09E+0						6.78E-01	-4.86E+02
Capti	on	GWP Photoc	= Global hemical	warming ozone cre	g poten eation	tial; ODP	= Ozone o ADPE = A	depletio	n potential	; AP = A	cidification	ion potential; EP = Eutrossil resources; ADPF			utrophi	ication pote	ential; POCP =
						,		iolotio a	fossil re			SILTES	ource	es, adf	I = AU		lion potentiar for
RESU	JLTS	S OF TH		A - RE	SOU					sources			ource	35, ADP			
RESU Param	1	OF TH Unit		<mark>A - RE</mark> A1-3	SOU		SE: On		fossil re	sources			ource	C3		C4	D
r	eter				SOU	RCE U	SE: On	e pie	fossil re ce of B	sources	SW20		ource				
Param	eter E	Unit	3	A1-3	SOU	RCE U	SE: On	e pie	fossil re ce of B	sources	SW20						
Param PER	eter E M	Unit [MJ]	3	A1-3 .40E+02	SOU	RCE U A4	SE: On	e pie	fossil re ce of B	esam	SW20	Di					
Param PER PER	eter E M T	Unit [MJ] [MJ]	3 0 3	A1-3 .40E+02 .00E+00	SOU	A4	SE: On	e pie A5 -	fossil re ce of B B6 -	esam	SW200 C2 -	Di		C3 -		C4	D -
Paramo PER PER PER	eter E M T RE	Unit [MJ] [MJ] [MJ]	3 0 3 2	A1-3 .40E+02 .00E+00 .40E+02	SOU	RCE U A4 - - 4.35E-01	SE: On	e pie A5 -	fossil re ce of B B6 -	esam	SW200 C2 -	Di		C3 -		C4	D -
Parama PER PER PER	eter E M C T R E R R	Unit [MJ] [MJ] [MJ] [MJ]	3 0 3 2 0	A1-3 .40E+02 .00E+00 .40E+02 .10E+03	SOU	RCE U A4 - 4.35E-01 -	SE: On	e pie A5 - - 0E-02 -	fossil re ce of B B6 3.04E+	esam o3	SW200 C2 - 4.29E-02 -		2.4	C3 - 45E-01 -		C4 - 5.79E-02	D
Paramo PER PER PENF PENF	eter M T RE RE RM RT	Unit [MJ] [MJ] [MJ] [MJ]	3 0 3 2 0 2	A1-3 .40E+02 .00E+00 .40E+02 .10E+03 .00E+00	SOU	RCE U A4 - 4.35E-01 -	5.60	e pie A5 - - 0E-02 - -	fossil re ce of B B6 - - - - - - - - - - - - -	esam oa oa oa	SW200 C2 - - 4.29E-02 - -	Di	2.	C3 - - 45E-01 - -		C4 - 5.79E-02 -	D
Param PER PER PENF PENF PENF SM	eter M CT RE RM RT RT I F	Unit [MJ] [MJ] [MJ] [MJ] [MJ]	3 0 3 2 0 0 2 7	A1-3 .40E+02 .00E+00 .40E+02 .10E+03 .00E+00 .10E+03		RCE U A4 - 4.35E-01 - 1.11E+01	5.60 7.0- 0.00	e pie A5 - - 0E-02 - - 4E-01	fossil re Ce of B B6 - 3.04E+ - 1.67E+	esam esam 03 04 00	SW200 C2 - 4.29E-02 - 1.09E+00		2 1.: 0.0	C3 - 45E-01 - 34E+00		C4 	D
Param PER PER PENF PENF PENF SM RSF	eter E M T T R E R R R M R R M I F F S F	Unit [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	3 0 3 2 0 0 2 7 7 0	A1-3 .40E+02 .00E+00 .40E+02 .10E+03 .00E+00 .10E+03 .49E+00		RCE U A4 - 4.35E-01 - 1.11E+01 0.00E+00	SE: On 5.60 7.00 0.00	e pie A5 - 0E-02 - 4E-01 0E+00	fossil re Ce of B B6 - 3.04E+ - 1.67E+ 0.00E+	Sources	SW200 C2 - 4.29E-02 - 1.09E+00 0.00E+00	Di	2 1.: 0.0	C3 - 45E-01 - 34E+00 00E+00		C4 	D
Param PER PER PENF PENF PENF SM	eter E M T T R E R R R M R R M I F F S F	Unit [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	3 0 3 2 0 2 2 7 7 0 0 0 1	A1-3 .40E+02 .00E+00 .40E+02 .10E+03 .00E+00 .00E+00 .00E+00 .54E+00		RCE U A4 - 4.35E-01 - 1.11E+01 0.00E+00 0.00E+00 0.00E+00 3.07E-04	SE: On 5.60 7.0- 0.00 0.00 6.23	Image: pie A5 - - 0E-02 - 4E-01 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00	fossil re Ce of B B6 3.04E+ - 1.67E+ 0.00E+ 0.00E+ 0.00E+ 7.51E+	Sources	SW200 C2 - - 4.29E-02 - 1.09E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		2. 1.: 0.0 0.0 6.1	C3 - 45E-01 - - 34E+00 00E+00 00E+00 00E+00 00E+00		C4 - 5.79E-02 - 7.64E-01 0.00E+00 0.00E+00 0.00E+00 3.96E-03	D
Param PER PER PENF PENF PENF SM RSF NRS FW	eter E M T T R E R M R R M R R M I T F F G F	Unit [MJ] [m³] PER renew Use resou	3 0 3 2 0 2 2 7 7 0 0 0 1 E = Use wable pr of non r of non r of non r of non r cs; S	A1-3 .40E+02 .00E+00 .40E+02 .10E+03 .00E+00 .10E+03 .00E+00 .00E+00 .54E+00 of renew enewable mewable M = Use	wable prima p prima of sec	RCE U A4 - - 4.35E-01 - - 1.11E+01 0.00E+0000000000	SE: On 5.60 7.00 0.00 0.00 0.00 0.00 0.00 0.00 0	e pie A5 - - 0E-02 - - 4E-01 0E+00 0E+00 0E+00 0E+00 0E+00 3E-03 cluding raw ma ng non es usec SF = L fuels;	fossil re ce of B B6 3.04E+ 3.04E+ 1.67E+ 0.00E+ 0.	sources esam o	SW200 C2 - - 4.29E-02 - - 1.09E+00 0.00E+0000000000	Di Di Di Di Di Di Di Di Di Di	2 1.: 0.0 0.0 0.0 6 sewał urces tal us Is; NI	C3 - - 45E-01 - - - - - - - - - - - - -	(((((((((((((((((((C4 5.79E-02 - - 7.64E-01 0.00E+00 0.00E+00 0.00E+00 3.96E-03 materials; rergy reso y materials; wable prin non renew	D
Param PER PER PENF PENF SM RSF NRS FW Cap	eter E M C T C R R M C T C R M C T C C C C C C C C C C C C C C C C C	Unit [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	3 0 3 2 0 2 7 0 0 2 7 0 0 0 1 E = Use wable pr of non re urces; S	A1-3 .40E+02 .00E+00 .40E+02 .10E+03 .00E+00 .10E+03 .49E+00 .00E+00 .00E+00 .54E+00 .00E+00 .54E+00 of renewable mewable mewable M = Use	wable ergy r e prima of sec	RCE U A4 - - 4.35E-01 - 1.11E+01 0.00E+0000000000	SE: On 5.60 7.00 0.00 0.00 0.00 6.23 mergy exc s used as gy excludi y resource material; F	e pie A5 - - 0E-02 - - 4E-01 0E+00 0E+00 0E+00 0E+00 0E+00 3E-03 cluding raw ma ng non es usec SF = L fuels;	fossil re ce of B B6 3.04E+ 1.67E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 7.51E+ renewable tterials; PE renewable sterials; PE renewa	sources esam o	SW200 C2 - - 4.29E-02 - 1.09E+00 0.00E+	Di Di Di Di Di Di Di Di Di Di	2. 1.: 0.0 0.0 6.0 UICES ewab uurces tal us Is; NI	C3 - 45E-01 - - - - - - - - - - - - -	(((((((((((((((((((C4 5.79E-02 5.79E-02 7.64E-01 0.00E+00 0.00E+00 0.00E+00 3.96E-03 materials; ergy reso materials; ergy reso materials; wable prin non renew	D
Param PER PER PENF PENF PENF SM RSF NRS FW Cap RESU	eter E M C T R E R M R R R R R R R R R R R R R R R R	Unit [MJ] [m³] PER renew Use resou	3 0 3 2 0 2 2 7 7 0 0 0 1 E = Use wable pr of non r of non r of non r of non r cs; S	A1-3 .40E+02 .00E+00 .40E+02 .10E+03 .00E+00 .10E+03 .49E+00 .00E+00 .00E+00 .54E+00 .00E+00 .54E+00 of renewable mewable mewable M = Use	wable ergy r e prima of sec	RCE U A4 - - 4.35E-01 - - 1.11E+01 0.00E+0000000000	SE: On 5.60 7.00 0.00 0.00 0.00 0.00 0.00 0.00 0	e pie A5 - - 0E-02 - - 4E-01 0E+00 0E+00 0E+00 0E+00 0E+00 3E-03 cluding raw ma ng non es usec SF = L fuels;	fossil re ce of B B6 3.04E+ 3.04E+ 1.67E+ 0.00E+ 0.	sources esam o	SW200 C2 - - 4.29E-02 - - 1.09E+00 0.00E+0000000000	Di Di Di Di Di Di Di Di Di Di	2. 1.: 0.0 0.0 6.0 UICES ewab uurces tal us Is; NI	C3 - - 45E-01 - - - - - - - - - - - - - - - - - -	(((((((((((((((((((C4 5.79E-02 - - 7.64E-01 0.00E+00 0.00E+00 0.00E+00 3.96E-03 materials; rergy reso y materials; wable prin non renew	D
Param PER PER PENF PENF SM RSF NRS FW Cap RESU Parama	eter E M T T R R R M R R R R R R R R R R R R R	Unit [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	3 0 3 2 0 2 7 0 0 2 7 0 0 0 1 E = Use wable pr of non re urces; S	A1-3 .40E+02 .00E+00 .40E+02 .10E+03 .00E+00 .10E+03 .49E+00 .00E+00 .00E+00 .00E+00 .00E+00 .54E+00 of renew imary er enewable mewable M = Use A - OU -3	wable hergy r e prim e prim e of sec	RCE U A4 - - 4.35E-01 - 1.11E+01 0.00E+0000000000	SE: On 5.60 7.00 0.00 0.00 0.00 6.23 mergy exc s used as gy excludi y resource material; F	e pie A5 - - 0E-02 - 4E-01 0E+00 0E+00 0E+00 3E-03 cluding raw ma raw ma cluding raw ma clud	fossil re ce of B B6 3.04E+ 1.67E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 7.51E+ renewable tterials; PE renewable sterials; PE renewa	sources esam o o o o o o o o o o o o o o o o o o o	SW200 C2 - - 4.29E-02 - 1.09E+00 0.00E+	Di P P P P P P P P P P P P P	2. 1.: 0.0 0.0 6. UITCESS UITCESS UITCESS IUTCESS	C3 - 45E-01 - - - - - - - - - - - - -	<pre></pre>	C4 5.79E-02 5.79E-02 7.64E-01 0.00E+00 0.00E+00 0.00E+00 3.96E-03 materials; ergy reso materials; ergy reso materials; wable prin non renew	D
Param PER PER PENF PENF PENF SM RSF NRS FW Cap RESU	eter E M T RE RM RT RR RT I F F F otion ULTS eter D D	Unit [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	3 0 3 2 0 2 7 0 0 2 7 0 0 0 1 E = Use wable pr of non r of non r eurces; S iE LC	A1-3 .40E+02 .00E+00 .40E+02 .10E+03 .00E+00 .10E+03 .49E+00 .00E+00	wable prima e prima e prima e of sec	RCE U A4 - - 4.35E-01 - 1.11E+01 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.07E-04 primary energy condary n TT FLO	SE: On 5.60 7.00 0.00 0.00 0.00 0.00 0.00 0.00 0	e pie A5 - - 0E-02 - 4E-01 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00 0E-02 - - - - - - - - - - - - -	fossil re ce of B B6 3.04E+ - 1.67E+ 0.00E+	Sources	SW200 C2 - - 4.29E-02 - - 1.09E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.02E-05 y energy otal use e y energy is PENRT secondar fresh wat ORIES C2	Di	2. 1.:. 0.0 0.0 0.0 0.0 0.0 0.0 0.0	C3 - 45E-01 - - 34E+00 00E+00 0	e e e e e e e e e e e e e e e e e e e	C4 	D

0.00E+00

0.00E+00

0.00E+00

1.35E+01

0.00E+00

0.00E+00

-

CRU

MFR

[kg]

[kg]

0.00E+00

0.00E+00

0.00E+00

0.00E+00

0.00E+00

1.50E+00

0.00E+00

0.00E+00

MER	[kg]	0.00E+00	-							
EEE	[MJ]	0.00E+00	0.00E+00	2.71E+00	0.00E+00	0.00E+00	0.00E+00	2.44E+00	-	
EET	[MJ]	0.00E+00	0.00E+00	7.65E+00	0.00E+00	0.00E+00	0.00E+00	6.69E+00	-	
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Caption Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy									

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). Production phase (module A1-A3) contributes between 5% and 25% to total impact assessment, with exception for ADPE (99%). Upstream emissions associated with steel- aluminum making processes as well as electronic and electro mechanic parts dominate this stage. The environmental impacts for the transport (A2) have a negligible impact within this stage. To reflect the use phase (module B6), the energy consumption was included and, with exception of ADPE (0.7%), it contributes between 74% and 95% for all the other impact categories considered.

In the end-of-life phase, 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

Institut Bauen und Umwelt

Institut Bauen und Umwelt e.V., Berlin (pub.): Generation of Environmental Product Declarations (EPDs);

General principles

for the EPD range of Institut Bauen und Umwelt e.V. (IBU), 2013-04 www.bau-umwelt.de

IBU PCR Part A

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. April 2013 www.bau-umwelt.de

IBU PCR Part B

IBU PCR Part B: Automatic doors, automatic gates, and revolving door systems (door systems) (PCR tested and approved by the independent expert committee)

2004/108/EC Electromagnetic Compatibility Directive (EMCD)

Relating to electromagnetic compatibility and repealing Directive 89/336/EEC

2006/42/EC Machinery Directive (MD)

Directive 2006/42/EC on machinery

DIN 18650-1

DIN 18650-1: 2005: Powered pedestrian doors - Part 1: Product requirements and test methods.

DIN 18650-2

DIN 18650-2: 2005: Powered pedestrian doors - Part 2: Safety at powered pedestrian doors.

ISO 14025

EN ISO 14025:2011: Environmental labels and declarations - Type III environmental declarations - Principles and procedures

EN 15804

EN 15804:2012+A1:2014: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

EN 16005

EN 16005:2012: Power operated pedestrian doorsets - Safety in use - Requirements and test methods.

EN 60335-1

EN 60335-1: 2012: Household and similar electrical appliances -Safety -Part 1: General requirements

EN 60335-2-103

EN 60335-2-103: 2003 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: Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments

EN 61000-6-3

EN 61000-6-3: 2001: Quality management systems - Requirements (EN ISO 9001:2008)

EN ISO 13849-1

EN ISO 13849-1:2008: Safety of machinery — Safetyrelated parts of control systems — Part 1: General principles for design



GaBi 6

GaBi 6 2013: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, PE INTERNATIONAL AG, Leinfelden-Echterdingen, 1992-2013.

GaBi 6 2013D

GaBi 6 2013D: Documentation of GaBi 6: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, PE INTERNATIONAL AG, Leinfelden-Echterdingen, 1992-2013. http://documentation.gabi-software.com/

WEEE

Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)

EWC

European Waste Catalog

9. Annex

Results shown below were calculated using TRACI Methodology.

DESC	RIP	TION C	OF THE	SYST	EM B	OUND	ARY	(X = IN	ICLU	DED IN	LCA; I	MND =	MODU	JLE N	IOT DE	CLARED)
CONSTRUCTI																BENEFITS AND
PROD	PRODUCT STAG		ON PRO			USE STAGE							ID OF LI	LOADS BEYOND THE		
			STAC	GE												SYSTEM BOUNDARYS
			e a						Ê		er	د		gr		
erial	Ę	Manufacturing	ansport from th gate to the site	≥		JCe		Replacement ¹⁾	Refurbishment ¹⁾	lar se	wat	De-construction demolition	ť	ssir	-	ᆞᆠᅌᆿ
w mate supply	odsi	actu	t fro the	qme	Use	enal	Repair	eme	shm	atior Jy u	ional use	stru olitic	odsi	LOCE	Disposal	Reuse- lecovery ecyclinę potentia
Raw material supply	Transport	nufa	spol e to	Assembly		Maintenance	Re	plac	urbi	Operational energy use	u	-constructi demolition	Transport	te p	Disp	Reuse- Recovery- Recycling- potential
Å		Σ	Transport from the gate to the site			ž		Re	Ref	0 0	Operational water use	-De-		Waste processing		
A1	A2	A3	⊢ A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Х	Х	Х	Х	Х	MND	MND	MND	MND	MND	X	MND	MND	Х	Х	Х	Х
RESU	JLTS	S OF TH	IE LCA	- EN	VIRON	MENT	AL IN	ЛРАСТ	Γ: One	e piece	of Bes	am S	N200i			
Parame	eter	U	nit	A	1-3	A	4	A5	;	B6		C2	C3		C4	D
GWF	>	[kg C0	O ₂ -eq.]	1.5	9E+02	7.99	E-01	2.14E+	+00	9.36E+0	2 7.8	8E-02	7.55E-0	2	1.44E+00	-4.82E+01
ODP	>	[kg CF0	C11-eq.]	3.3	3E-08	4.07	E-12	1.04E·	-11	6.81E-07	7 4.0	1E-13	5.49E-1	1	4.60E-12	1.37E-08
AP		[kg S0	O ₂ -eq.]	1.1	8E+00	4.78	E-03	5.92E	-04	4.18E+0	0 4.7	'1E-04	3.37E-0	4	4.88E-04	-2.68E-01
EP		[kg N	N-eq.]	5.0	2E-02	3.38	E-04	3.41E-	-05	1.78E-01	1 3.3	3E-05	1.43E-0	5	2.04E-05	-7.62E-03
Smo	g	[kg C) ₃ -eq.]	1.4	1E+01	9.84	E-02	1.38E·	-02	3.78E+0	1 9.7	0E-03	3.05E-03		6.39E-03	-2.53E+00
Resour	ces	[N	/J]	1.2	9E+02	1.59E+00		7.05E-02		7.57E+0	2 1.5	6E-01	6.10E-0	2	6.91E-02	-3.64E+01
Captio	on	GWP = G	Blobal warn	ning pot	ential; Ol	DP = Oz				AP = Acidit Resources			P = Eutro	phicatio	on potentia	al; Smog = Smog,
RESU	JLTS	S OF TH	HE LCA	- RE	SOUR	CE US	E: Or	ne piec	ce of E	Besam	SW200	Di				
Param	eter	Unit	A1-	-3		A4		A5		B6	C2		C3		C 4	D
						74		73		D0	62		03		C4	U
PER	E	[MJ]	3.40E	+02		-		-		-			-		-	-
PER PERI		[MJ] [MJ]	3.40E 0.00E			-		-		- -	-		-		-	- -
	M			+00	4.	- - .35E-01		- - 5.60E-02	3.0	- - 04E+03	- 4.29E		- 2.45E-0	1	- - 5.79E-02	-
PERI	M T	[MJ]	0.00E	+00	4	-		-	3.0	-			-	1	-	· ·
PERI PER	M T RE	[MJ] [MJ]	0.00E 3.40E	+00 +02 +03	4	-		-	3.0	-			-	1	-	· ·
PER PER PENF	M T RE RM	[MJ] [MJ] [MJ]	0.00E 3.40E 2.10E	+00 +02 +03 +00		-		-		-		-02	-		-	· ·
PERI PER PENF	M T RE RM RT	[MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 0.00E	+00 +02 +03 +00 +03	1.	- - .35E-01 - -		- - 5.60E-02 - -	1.6	- - 04E+03 - -	- - 4.29E - -	-02	- - 2.45E-0 - -	0	- - 5.79E-02 - -	- - -1.61E+02 - -
PER PER PENF PENF	M T RE RM RT	[MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 0.00E 2.10E	++00 ++02 ++03 ++00 ++03 ++00	1.	- - .35E-01 - - 11E+01		- - 5.60E-02 - - 7.04E-01	1.6	- - - - - - 57E+04	- - 4.29E - - 1.09E	-02 +00 +00	- 2.45E-0 - 1.34E+0	0 7	- 5.79E-02 - - 7.64E-01	- - -1.61E+02 - - - -5.95E+02
PERI PER PENF PENF SM	M T RE RT	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 0.00E 2.10E 7.49E	+00 +02 +03 +03 +03 +00 +00	1. 0. 0.	- - .35E-01 - 11E+01 00E+00		- 5.60E-02 - 7.04E-01 0.00E+00	1.6 0.0 0.0	- - - - - - - - - - - - - - - - - - -	- - 4.29E - - 1.09E 0.00E	-02 +00 +00 +00	- 2.45E-0 - 1.34E+0 0.00E+0	0 7	- 5.79E-02 - 7.64E-01 0.00E+00	- - -1.61E+02 - - -5.95E+02 0.00E+00
PERI PER PENF PENF SM RSF	M T RE RM RT	[MJ] [MJ] [MJ] [MJ] [MJ] [Kg] [MJ]	0.00E 3.40E 2.10E 0.00E 2.10E 7.49E 0.00E	+00 +02 +03 +03 +00 +00 +00 +00	1. 0. 0.	- .35E-01 - .11E+01 00E+00 00E+00		- 5.60E-02 - 7.04E-01 0.00E+00 0.00E+00	1.6 0.0 0.0	- - - - - - - - - - - - - - - - - - -	- - - - 1.09E 0.00E	-02 +00 +00 +00 +00	- 2.45E-0 - 1.34E+0 0.00E+0 0.00E+0		- 5.79E-02 - 7.64E-01 0.00E+00	- -1.61E+02 - - -5.95E+02 0.00E+00 0.00E+00
PERI PER PENF PENF SM RSF	M T RE RM RT	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 0.00E 7.49E 0.00E 0.00E 1.54E E = Use o	+00 +02 +03 +00 +03 +00 +00 +00 f renew	1. 0. 0. 3 rable prir	- - .35E-01 - .11E+01 00E+00 00E+00 00E+00 00E+00 00E+00 norE-04	() () () () () () () () () () () () () (- 5.60E-02 - - 7.04E-01 0.00E+00 0.00E+00 0.00E+00 6.23E-03 cluding rr	1.6 0.0 0.0 7.5 enewab	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -	-02 +00 +00 +00 +00 +00 -05 resource	- 2.45E-0 - 1.34E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 6.06E-0 es used a	0 (0 0 (0 0 (0 4 (3 15) raw r	- 5.79E-02 - - 7.64E-01 0.00E+00 0.00E+00 0.00E+00 3.96E-03 naterials;	
PERI PER PENF PENF SM RSF	M T RE RM RT	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 2.10E 2.10E 7.49E 0.00E 0.00E 1.54E E = Use o wable prim of non rer	+00 +02 +03 +00 +00 +00 +00 f renew herwable	1. 0. 0. 3 rable prir rergy ress	- 	(((((((((((((((((((- - - - 7.04E-01 0.00E+00 0.00E+00 0.00E+00 6.23E-03 cluding ro raw mat ing non r	1.6 0.0 0.0 7.5 enewab erials; F renewat	- - - - - - - - - - - - - - - - - - -	- 4.29E - 1.09E 0.00E 0.00E 3.02E y energy otal use e ry energy	-02 +00 +00 +00 -05 resource of renew resource	- 2.45E-0 - 1.34E+0 0.00E+0 0.00E+0 0.00E+0 6.06E-0 es used a able prim es used a	0 0 0 0 0 0 0 0 0 1 3 s raw r aary ene aas raw	- - - - 7.64E-01 0.00E+00 0.00E+00 0.00E+00 3.96E-03 materials; argy reso materials	
PERI PER PENF PENF SM RSF NRS FW	M T RE RM RT	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 2.10E 2.10E 7.49E 0.00E 1.54E E = Use o wable prim of non reno	+00 +02 +03 +00 +00 +00 +00 f renew able ewable	1. 0. 0. 3 rable prir ergy resc ⇒ primary primary	- - - - - - - - - - - - - - - - - - -	C C C C C C C C C C C C C C C C C C C	- 5.60E-02 - - 7.04E-01 0.00E+0000000000	1.6 0.0 0.0 7.5 enewab erials; F renewat as raw se of rei	- 	- - - - - - - - - - - - - - - - - - -	-02 +00 +00 +00 +00 -05 resource of renew resource = Total y fuels;	- 2.45E-0 - - 1.34E+0 0.00E+0 0.00E+0 0.00E+0 6.06E-0 es used a able prim es used fr	0 (0 0 (0 0 (0 4 (3 as raw r aary ene	- 5.79E-02 - - 7.64E-01 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.96E-03 materials; ergy reso materials; wable pri	
PER PER PENR PENR SM RSF NRS FW Cap	M T RE RM RT F	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 2.10E 2.10E 7.49E 0.00E 1.54E E = Use o wable prim of non reno	+00 +02 +03 +00 +00 +00 +00 +00 f renew hary en ewable = Use	1. 0. 0. 3 rable prir ergy rese primary primary of secon	- - - - - - - - - - - - - - - - - - -	ergy exc excludi resourc aterial; F	- 5.60E-02 - - 7.04E-01 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+02 0.00E+000E+0000000000000000000000000000	1.6 0.0 0.0 7.5 enewab erials; F renewab as raw se of rei FW = U	- 	- - - - - - - - - - - - - - - - - - -	-02 +00 +00 +00 -05 resourc of renew resourc of renew resourc = Total y fuels; er	- 2.45E-0 - - 1.34E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 sused a able prim es used a use of nc NRSF = I	0 0 0 0 0 0 0 0 0 4 3 sraw r ary energy as raw r n renew Jse of r	- - 5.79E-02 - - 7.64E-01 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.96E-03 materials; ergy reso materials wable prin ion renew	
PER PER PENR PENR SM RSF NRS FW Cap	M T RE RM RT F btion	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 0.00E 2.10E 7.49E 0.00E 1.54E E = Use o wable prim of non removed urces; SM	+00 +02 +03 +00 +00 +00 +00 f renew herwable = Use - OU	1. 0. 0. 3 rable prir ergy rese primary primary of secon	- - - - - - - - - - - - - - - - - - -	ergy exc excludi resourc aterial; F	- 5.60E-02 - - - - - - - - - - - - - - - - - -	1.6 0.0 0.0 7.5 enewab erials; F renewab as raw se of rei FW = U	- 	- - - - - - - - - - - - - - - - - - -	-02 +00 +00 +00 -05 resourc of renew resourc of renew resourc = Total y fuels; er	- 2.45E-0 - - 1.34E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 sused a able prim es used a use of nc NRSF = I	0 0 0 0 0 0 0 0 0 4 3 sraw r ary energy as raw r n renew Jse of r	- - 5.79E-02 - - 7.64E-01 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.96E-03 materials; ergy reso materials wable prin ion renew	
PERI PER PENR PENR SM RSF NRS FW Cap	M T RE RM RT F F otion	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 2.10E 2.10E 7.49E 0.00E 1.54E E = Use o wable prim of non rend wable SM 1.54E E = Use o wable SM 1.54E	+00 +02 +03 +00 +00 +00 +00 +00 f renew hary en hewable = Use - OU	1. 0. 0. 3 rable prir ergy resc e primary primary of secon	- - - - - - - - - - - - - - - - - - -	c c c c c c c c c c c c c c c c c c c	- 5.60E-02 - - 7.04E-01 0.00E+0000000000	1.6 0.0 0.0 7.5 enewab erials; F renewat as raw se of rei FW = U STE (- 	- - - - - - - - - - - - - - - - - - -	-02 +00 +00 +00 +00 -05 resource of renew resource = Total y fuels; er : One	- 2.45E-0 - - 1.34E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 6.06E-0 es used a able prim es used from NRSF = 1 piece (0 c 0 c 0 c 0 c 1 c 1 c 1 c 1 c 1 c 1 c 1 c 1	- 5.79E-02 - 7.64E-01 0.00E+000 0.00E+0000000000	- -1.61E+02 - -5.95E+02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 -4.81E-01 PERM = Use of urces; PENRE = ; PENRM = Use mary energy vable secondary
PERI PER PENR PENR SM RSF NRS FW Cap	M T RE RM RT F F otion	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 0.00E 7.49E 0.00E 1.54E E = Use o wable prin of non reno f non rero of non rero of non rero of non rero s SM HE LCA A1-3	+00 +02 +03 +00 +00 +00 +00 +00 f renew hary en- newable = Use - OU	1. 0. 0. 0. 3 rable primary primary of secon TPUT A4	- 	ergy exc excludi resourc taterial; F	- 5.60E-02 - - 7.04E-01 0.00E+0000000000	1.6 0.0 0.0 7.5 enewab erials; F renewab as raw se of rei FW = U STE (B6		- - - - - - - - - - - - - - - - - - -	-02 +00 +00 +00 +00 -05 resource of renew resource = Total y fuels; i er	- - - - - - - - - - - - - - - - - - -	0 (0 0 (0 0 (0 4 (3 1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (- 5.79E-02 - - 7.64E-01 0.00E+000 0.00E+0000000000	
PERI PER PENR PENR SM RSF NRS FW Cap	M T RE RM RT F F F ULTS Etter D D	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 0.00E 7.49E 0.00E 1.54E E = Use o wable prim of non rene urces; SM IE LCA A1-3 1.13E-0	+00 +02 +03 +00 +00 +00 +00 +00 f renew hary en- newable = Use - OU	1. 0. 0. 3 rable prir ergy rese e primary of secon TPUT A4 2.52E-	- .35E-01 - .11E+01 00E+00 000E+00 00E+00 00000000	ergy excludir escludir resourc aterial; F VS AN A5 4.84E-	- 5.60E-02 - - 7.04E-01 0.00E+0000000000	1.6 0.0 0.0 7.5 enewab erials; F renewab as raw se of rei FW = U STE (B6 2.31E+		- 4.29E - 1.09E 0.00E 0.00E 0.00E 3.02E y energy otal use of y energy y energy otal use of y energy otal englished otal englis	-02 +00 +00 +00 +00 -05 resource of renew resource f renew f r	- 2.45E-0 - 1.34E+0 0.00E+0 00	0 C 0 C 0 C 0 C 0 C 1 S 1 S 1 S 1 S 1 S 1 S 1 S 1 S	- 5.79E-02 - - 7.64E-01 0.00E+00 0.00E+0	
PERI PER PENR PENR SM RSF NRS FW Cap RESU Parame	M T RE RM RT F F otion	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 2.10E 2.10E 7.49E 0.00E 1.54E E = Use o wable prim of non reno urces; SM HE LCA A1-3 1.13E-(9.13E+4)	+00 +02 +03 +00 +00 +00 +00 +00 f renew hary en- newable = Use - OU 01 00	1. 0. 0. 0. 3 rable primary primary of secon TPUT A4 2.52E- 1.39E-	- 	ergy exc ergy exc sed as excludi resourc taterial; F VS AN A5 4.84E- 5.41E-	- 5.60E-02 - 7.04E-01 0.00E+0000000000	1.6 0.0 0.0 7.5 enewab erials; F renewab as raw se of rei FW = U STE (B6 2.31E+ 5.38E+		- 4.29E - - 1.09E 0.00E 0.00E 0.00E 3.02E y energy y energy y energy y energy y energy fresh wat ORIES C2 2.49E-06 1.37E-04	-02 +00 +00 +00 -05 resourco of renew resourco = Total y fuels; I er : One	- - - - - - - - - - - - - -	0 (0 0 (0 0 (0 4 (3 1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (- 5.79E-02 - - 7.64E-01 0.00E+00 0.00E+0	
PERI PER PENR PENR SM RSF NRS FW Cap RESL Parame HWD NHW	M T RE RM RT F F btion	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	0.00E 3.40E 2.10E 0.00E 2.10E 7.49E 0.00E 1.54E E = Use o wable prim of non ren urces; SM 1E LCA A1-3 1.13E-0 9.13E+4 1.18E-0	+00 +02 +03 +00 +00 +00 +00 +00 f renew hary en- newable = Use - OU 01 00	1. 0. 0. 3 rable prir ergy rese primary of secon TPUT A4 2.52E- 1.39E- 1.45E-		Contraction of the second seco	- - - - - - - - - - - - - -	1.6 0.0 0.0 7.5 enewab erials; F renewab as raw se of rei FW = U STE (B6 2.31E+ 5.38E+ 2.40E+		- 4.29E - 1.09E 0.00E 0.00E 0.00E 3.02E y energy otal use of y energy otal use of y energy ot	-02 +00 +00 +00 +00 -05 resource of renew resource = Total y fuels; er : One	- 2.45E-0 - 1.34E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 6.06E-0 es used a able prim es used a use of nc NRSF = I piece C3 .86E-04 .34E-04 .34E-04	0 (0 0 (0 0 (0 1 (1 1 (1)) 0 (0 1 (1)) 0 (0 1 (1)) 0 (0 0 (0 0 (0)) 0 (0 0 (0)) 0 (0) 0 (0	- - - - - - - - - - - - - -	



EEE	[MJ]	0.00E+00	0.00E+00	2.71E+00	0.00E+00	0.00E+00	0.00E+00	2.44E+00	-
EET	[MJ]	0.00E+00	0.00E+00	7.65E+00	0.00E+00	0.00E+00	0.00E+00	6.69E+00	-
Caption	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								

Institut Bauen und Umwelt e.V.	Publisher Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany	Tel Fax Mail Web	+49 (0)30 3087748- 0 +49 (0)30 3087748- 29 info@bau-umwelt.com www.bau-umwelt.com
Institut Bauen und Umwelt e.V.	Programme holder Institut Bauen und Umwelt e.V. Panoramastr 1 10178 Berlin Germany	Tel Fax Mail Web	+49 (0)30 - 3087748- 0 +49 (0)30 – 3087748 - 29 info@bau-umwelt.com www.bau-umwelt.com
PE INTERNATIONAL SUSTAINABILITY PERFORMANCE	Author of the Life Cycle Assessment PE INTERNATIONAL AG Hauptstraße 111 70771 Leinfelden-Echterdingen Germany	Tel Fax Mail Web	+49 711 34 18 17 22 +49 711 34 18 17 25 consulting@pe-international.com www.pe-international.com
ASSA ABLOY	Owner of the Declaration ASSA ABLOY Entrance Systems AB Lodjursgatan 10 SE-261 44 Landskrona	Tel Fax Mail	+46 10 47 47 000 +46 418 284 12

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

Tel Fax Mail Web +46 10 47 47 000 +46 418 284 12 info.aaes@assaabloy.com www.assaabloyentrance.com