ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	Entrematic
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASA-20190063-IBA1-EN
Issue date	08.04.2019
Valid to	07.04.2024

EM PSW250 swing door operator Entrematic



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



1. General Information

Entrematic Group AB

Programme holder

IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany

Declaration number

EPD-ASA-20190063-IBA1-EN

This Declaration is based on the Product Category Rules:

PCR Automatic doors, automatic gates, and revolving door systems (door systems) 11.2017 (PCR tested and approved by the independent expert committee (SVA))

Issue date

08.04.2019

Valid to 07.04.2024

Prof. Dr.-Ing. Horst J. Bossenmayer

(President of Institut Bauen und Umwelt e.V.)

u Voli

Dr. Alexander Röder (Managing Director IBU)

2. Product

2.1 Product description

Product name: EM PSW250 swing door operator **Product characteristics:** Automatic, slim, 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 and gear box are combined into a compact unit mounted alongside the control unit within the cover. The operator is connected to the door leaf with a range of different arm systems.

The 70 mm slim EM PSW250 swing door operator requires a minimum of space while providing maximum performance. Furthermore, the door system operates very silent despite its capability to handle heavy doors up to 250 kg.

The EM PSW250 swing door operator is fire approved, making it ideal for creating and maintaining security, smoke and fire zones.

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

The EM PSW250 swing door operator has been designed to meet all operational and safety requirements in the European Directives and the standards issued by the European Standardization Committee (CEN).

EM PSW250 swing door operator

Owner of the Declaration

Entrematic Group AB Lodjursgatan 10 SE-261 44 Landskrona Sweden

Declared product / Declared unit

The declaration represents 1 automatic EM PSW250 swing door operator

Scope:

This declaration and its LCA study is relevant to the EM PSW250 swing door operator. The final assembly and production stage occurs in Ostrov u Stribra, Czech Republic at D5 Logistic Park 34901 Ostrov u Stribra, Czech Republic. Components are sourced from international Tier one suppliers. The EM PSW250 swing door operator cover length vary according to project requirements; an operator with cover standard length 840 mm and push arm system 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.

Verification

The CEN Standard EN 15804 serves as the core PCR Independent verification of the declaration and data according to ISO 14025

internally

x externally

Dr. Wolfram Trinius

(Independent verifier appointed by SVA)

2.2 Application

The EM PSW250 swing door operator is suitable for both external and internal swing doors and can be retrofitted with existing doors.

The EM PSW250 swing door operator facilitates entry and exit in buildings, and this widely-used operator can be found on applications ranging from hospital corridors to high-traffic retail operations.

The operator is truly reliable during all weather conditions as it is not affected by stack pressure and wind load when opening and/or closing. For added convenience, the EM PSW250 swing door operator can easily be manually opened, despite extended closing torque, due to sensor detection ensuring lowest manual opening force.

2.3 Technical Data

The product has the following technical properties: **Features**

Length (standard cover)	840 mm, optional
	lenghts available
Height	70 mm
Depth	148 mm
Inertia	Max 140 kg/ m²
Profile finish	anodized aluminum,
	RAL colors available on
	request

Performance

Mains power supply	100-240 V AC +10/- 15%, 50/60 Hz, mains fuse max 10A (building installation)
Power consumption	Max. 300W
Auxiliary voltage	24 V DC, max. 700 mA
Opening time (0° - 80°)	variable between 2.5 - 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 EM PSW250 swing door operator:

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 EM PSW250 is delivered ready for installation.

2.6 Base materials / Ancillary materials

The average composition of EM PSW250 is as follows:

Component	Percentage in mass (%)
Aluminium	37,74

Brass	0.0012
Plastics	1,00
StainlessSteel	2.11
Steel	36.15
Electronic	4.81
Electro_mechanics	17.08
others	1.1
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. arrive 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 9001:2015, ensures high standards. Offcuts and scraps during the manufacturing process are directed to a recycling unit. Wastewater is 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

Entrematic 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 Entrematic is aware of their 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 EM PSW250 swing door operator is supplied ready for installation. The installation is performed by certified installation technicians.

2.10 Packaging

The EM PSW250 swing door operator is packed in cardboard packaging. The cardboard is recyclable.

Material	Value (%)
Cardboard/paper	99.62
Plastics	0.38
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 Entrematic' 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 EM PSW250 swing door operator 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 lifetime of 10 years was considered.

2.14 Extraordinary effects Fire

The EM PSW250 swing door operator 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 aluminium 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 aluminium

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 were treated as a waste for landfill:

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

Entrematic Group AB Lodjursgatan 10 SE-261 44 Landskrona Sweden www.entrematic.com

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of the EM PSW250 swing door 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 of product (without packaging)	13.38	kg
Mass of packaging	1.33	kg
Conversion factor to 1 kg	0.074	-

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:

- 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 (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 Europe, thus an EU electricity grid mix is considered within this stage.

EoL:

In the End-of-Life phase, for all the 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 8 Software System for Life Cycle Engineering, developed by thinkstep AG, is used /GaBi 8 2018/. The GaBi-database contains consistent and documented datasets which are documented in the online GaBi-documentation /GaBi database SP25: 2016/.

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/.

thinkstep 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 8 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)	1.321	kg
Output substances following waste treatment on site Packaging (plastic)	0.005	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, stainless steel, steel, electronic, electro mechanics, plastics	13.24	kg
Collected as mixed construction waste construction waste for landfilling	0.14	kg
Reuse plastic parts	0.13	kg
Recycling Steel, stainless steel, aluminium, brass, electronics, electro mechanics	13.11	kg
Landfilling construction waste for landfilling	0.14	kg

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

Name	Value	Unit
Collected separately waste type		
EM PSW250 swing door operator	14.71	kg
(including packaging)		_
Recycling Aluminium	34,34	%
Recycling Brass	0.01	%
Recycling Steel	32,89	%
Recycling Stainless steel	1.92	%
Recycling Electronic and electro-	19.92	%
mechanics	19,92	70
Reuse Plastic parts	0.92	%
Reuse Paper packaging (from A5)	8.97	%
Reuse Plastic packaging (from	0.03	%
A5)	0.03	70
Loss Construction waste for	0.97	%
landfilling (no recycling potential)	0.97	/0

5. LCA: Results

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

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A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
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ODF	þ	[kg CF eq.		1,57E-07	5.41E-1	13	8.58E-12	6	.41E-07	6.67	7E-14	2.97E	-10	2.42	∃-12	2.10E-08
AP		[kg S eq.	O ₂ -	9,56E-01	5.17E-0)4	4.28E-04	4	.41E+00	6.38	3E-05	2.04E	-03	4.30	E-04	-3.43E-01
EP		[kg PC eq.	0 ₄ ³⁻ -	6,48E-02	1.18E-()4	7.46E-05	2	.49E-01	1.46	6E-05	1.15E	-04	7.23	E-05	-1.67E-02
POC	Р	[kg eth eq.	ene-	6,40E-02	-1.67E-	04	3.03E-05	2	.62E-01	-2.06E-05		1.21E-04		3.311	E-05	-2.05E-02
ADP	E	[kg Sb		7,71E-03	4.26E-0	09	3.43E-08	1	1.30E-04 5.25E-		5E-10	6.00E-08		1.50E-07		-4.28E-03
ADP	F	[M.	[]	1,74E+03	1.56E+	00	5.27E-01	1	.06E+04	1.92	2E-01	4.92E+00		7.81E-01		-5.42E+02
Captio	on	GW Photo	GWP = Global warming potential; ODP = Ozone depletion potential; AP = Acidification potential; EP = Eutrophication potential; POCP = Photochemical ozone creation potential; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources													
	RESULTS OF THE LCA - RESOURCE USE: One piece of EM PSW250									sources						
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Paramo PER PER PENR PENR PENR SM	eter E M T T R E R M R R T R T F	Unit [MJ]	A1-3 3,98E+ 0.00E+ 3,98E+ 2,12E+ 0.00E+ 2,12E+ 4.36E+ 0.00E+ 0.00E+ 1.23E+	3	A4 - - 6.15E-02 - 2,12E+03 0.00E+00 0.00E+00 0.00E+00 4.34E-05		A5 - 4.91E-02 - 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03		ece of E B6 - - 3.04E+03 - 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00	M PS 7 1 0 0 0 5	C2 - - - .58E-03 - - .93E-01 .00E+00 .00E+00 .00E+00 .00E+00	1.41 7.71 0.00 0.00 0.00 3.46	- E+00 - E+00 E+00 E+00 E+00 E+00		E-02 E-01 E+00 E+00 E+00 E-03	- -1.94E+02 - - -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01
Paramo PERI PERI PENF PENF SM RSF NRS FW	eter E M T T RE RM RT F	Unit [MJ]	A1-3 3,98E+ 0.00E+ 3,98E+ 2,12E+ 0.00E+ 2,12E+ 4.36E+ 0.00E+ 1.23E+ PERE Us resource matter renew	3	A4 - - 6.15E-02 - 2,12E+03 0.00E+00 0.00E+00 0.00E+00 4.34E-05 f renewable prir RE = Use NRM = Use NRM = Use NRM = Use	e primary ei of non of non y resoi Use	A5 - - 4.91E-02 - - 6.18E-01 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 ary energy rescy rescy renewablin no renewablin no renewablin	y exclu y excluurces e prim ble prii = Use	Image: second	M PS	C2 - - - - - - - - - - - - -	1.41 7.71 0.00 0.00 0.00 3.48 hergy res RT = To enewable da s raw F = Use sse of new	- E+00 - E+00 E+00 E+00 E+00 E+00 SE-03 ources t tal use c e primar v materin of rene t fresh w	8.721 8.721 0.008 0.008 0.008 1.758 used as of renew. ry energ. als; PEN wable se vater	E-02 E-01 E+00 E+00 E+00 E-03 raw mate able prin y resource RT = T of econdary	- -1.94E+02 - - -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 erials; PERM = hary energy ces used as raw tal use of non fuels; NRSF =
Paramo PERI PERI PENR PENR SM RSF NRS FW Ca	eter E M T RE RM RT F F aptior	Unit [MJ]	A1-3 3,98E+ 0.00E+ 3,98E+ 2,12E+ 0.00E+ 2,12E+ 4.36E+ 0.00E+ 1.23E+ PERE Us resource mate renew	3 -02 -00 -02 -03 -00 -03 -00 <t< td=""><td>A4 - - 6.15E-02 - 2.12E+03 0.00E+00 0.00E+00 0.00E+00 4.34E-05 frenewable prir RE = Use NRM = Us hary energ</td><td>e primary ei of non of non y resoi Use</td><td>A5 - - 4.91E-02 - - 6.18E-01 0.00E+00 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ary energy renewable on renewable on renewable of non renewable of non renewable</td><td>y exclu y excluurces e prim ble prii = Use</td><td>Image: constraint of the second sec</td><td>M PS</td><td>C2 - - - - - - - - - - - - -</td><td>1.41 7.71 0.00 0.00 0.00 3.48 hergy res RT = To enewable da s raw F = Use sse of new</td><td>- E+00 - E+00 E+00 E+00 E+00 SE-03 ources t tal use c e primaterin of renet t fresh w piece</td><td>8.721 8.721 0.008 0.008 0.008 1.758 used as of renew. ry energ. als; PEN wable se vater</td><td>E-02 E-01 E+00 E+00 E+00 E-03 raw mate able prin y resource RT = To econdary PSW2</td><td>- -1.94E+02 - - -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 erials; PERM = hary energy ces used as raw tal use of non fuels; NRSF =</td></t<>	A4 - - 6.15E-02 - 2.12E+03 0.00E+00 0.00E+00 0.00E+00 4.34E-05 frenewable prir RE = Use NRM = Us hary energ	e primary ei of non of non y resoi Use	A5 - - 4.91E-02 - - 6.18E-01 0.00E+00 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ary energy renewable on renewable on renewable of non renewable of non renewable	y exclu y excluurces e prim ble prii = Use	Image: constraint of the second sec	M PS	C2 - - - - - - - - - - - - -	1.41 7.71 0.00 0.00 0.00 3.48 hergy res RT = To enewable da s raw F = Use sse of new	- E+00 - E+00 E+00 E+00 E+00 SE-03 ources t tal use c e primaterin of renet t fresh w piece	8.721 8.721 0.008 0.008 0.008 1.758 used as of renew. ry energ. als; PEN wable se vater	E-02 E-01 E+00 E+00 E+00 E-03 raw mate able prin y resource RT = To econdary PSW2	- -1.94E+02 - - -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 erials; PERM = hary energy ces used as raw tal use of non fuels; NRSF =
Paramo PERI PERI PENF PENF SM RSF NRS FW Ca RESU Paramo	eter E M T RE RM RT F F aptior	Unit [MJ]	A1-3 3,98E+ 0.00E+ 3,98E+ 2,12E+ 0.00E+ 2,12E+ 4.36E+ 0.00E+ 1.23E+ PERE Us resource mate renew	3	A4 - - 6.15E-02 - 2,12E+03 0.00E+00 0.00E+00 0.00E+00 4.34E-05 f renewable prir RE = Use NRM = Use NRM = Use NRM = Use	e primary ei of non of non y resoi Use	A5 - - 4.91E-02 - - 6.18E-01 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 ary energy rescy rescy renewablin no renewablin no renewablin	y exclu y excluurces e prim ble prii = Use	Image: second	M PS	C2 - - - - - - - - - - - - -	1.41 7.71 0.00 0.00 0.00 3.48 hergy res RT = To enewable da s raw F = Use sse of new	- E+00 - E+00 E+00 E+00 E+00 E+00 SE-03 ources t tal use c e primar v materin of rene t fresh w	8.721 8.721 0.008 0.008 0.008 1.758 used as of renew. ry energ. als; PEN wable se vater	E-02 E-01 E+00 E+00 E+00 E-03 raw mate able prin y resource RT = T of econdary	- -1.94E+02 - - -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 erials; PERM = hary energy ces used as raw tal use of non fuels; NRSF =
Paramo PERI PERI PENR PENR SM RSF NRS FW Ca RESU Paramo	eter E M T RE RM RT F F Aption	Unit [MJ]	A1-3 3,98E+ 0.00E+ 3,98E+ 2,12E+ 0.00E+ 2,12E+ 0.00E+ 1.23E+ 0.00E+ 1.23E+ PERE Us resourc mate renew 'HE LC A 1,1	3	A4 - - 6.15E-02 - 2.12E+03 0.00E+00 0.00E+00 0.00E+00 4.34E-05 frenewable prir RE = Use NRM = Us hary energ	e primary ei of non e of nco Use FLO	A5 - - 4.91E-02 - - 6.18E-01 0.00E+00 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ary energy renewable on renewable on renewable of non renewable of non renewable	y exclu	Image: constraint of the second sec	M PS	C2 - - - - - - - - - - - - -	1.41 7.71 0.00 0.00 0.00 3.42 RT = To enewabl enewabl enewabl SF = Use ise of new SF = Use	- E+00 - E+00 E+00 E+00 E+00 SE-03 ources t tal use c e primaterin of renet t fresh w piece	8.011 8.011 - 8.721 0.006 0.006 0.006 1.75f used as of renew: ry energ; values est vater of EM	E-02 E-01 E+00 E+00 E+00 E-03 raw mate able prin y resource RT = To econdary PSW2	- -1.94E+02 - - -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 erials; PERM = hary energy ces used as raw tal use of non fuels; NRSF =
Paramo PERI PERI PENF PENF SM RSF NRS FW Ca RESU Paramo	eter E M T RE RM RT F aptior JLTS eter D D	Unit [MJ]	A1-3 3,98E+ 0.00E+ 3,98E+ 2,12E+ 0.00E+ 2,12E+ 4.36E+ 0.00E+ 1.23E+ PERE US resourc mate renew THE LC A 1,1 1,99	3	A4 - - 6.15E-02 - 2,12E+03 0.00E+00 0.00E+00 0.00E+00 4.34E-05 f renewabl wable prir RE = Use NRM = Us hary energ UTPUT A4	le priminary el of non vy resou Use	A5 - - 4.91E-02 - - 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ary energy nergy resc. box renewable on renewable	y exclu burces e primi ble pri = Use = Use = Use 5	Image: second condition - - - 3.04E+03 - - 1.67E+04 0.00E+00	M PS	C2 - - - - - - - - - - - - -	1.41 7.71 0.00 0.00 0.00 0.00 3.48 nergy res RT = To enewable ed as raw SF = Use lse of nei : One 1	- E+00 - E+00 E+00 E+00 E+00 E+00 BE-03 ources (tal use c e prima v materia of renet t fresh v piecce C3		E-02 E-01 E+00 E+00 E-03 raw mata able priny y resource RT = To econdary PSW2 C4	- -1.94E+02 - -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 erials; PERM = hary energy ces used as raw tal use of non fuels; NRSF =
Paramo PERI PERI PENR PENR SM RSF NRS FW Ca RESU Paramo HWU NHW	eter E M T RE RM RT F F F P D D D D D	Unit [MJ] [M] [M] [M] [M] [M] [M] [M] [M	A1-3 3,98E+ 0.00E+ 3,98E+ 2,12E+ 0.00E+ 2,12E+ 4.36E+ 0.00E+ 1.23E+ PERE US resourc mate renew THE LC A 1,1 1,99	3	A4 - 6.15E-02 - 2,12E+03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.34E-05 frenewable prir RE = Use NRM	e primary endowed and a second	A5 - - 4.91E-02 - - 6.18E-01 0.00E+00	y exclu y excluurces e prim = Use eewabl D WA	Image: constraint of the second sec	M PS	C2 - - - - - - - - - - - - -	1.41 7.71 0.00 <t< td=""><td>- E+00 - E+00 E+00 E+00 E+00 E+00 0000000000</td><td>8.011 8.011 8.721 0.006 0.006 0.006 1.756 used as of renew. ry energy als; PEN wable se vater of EM 9. 1.1</td><td>E-02 E-01 E+00 E+00 E+00 E-03 raw mate able prim y resource RT = To econdary PSW2 C4 03E-05</td><td>- -1.94E+02 - -6.61E+02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 erials; PERM = hary energy bes used as raw tal use of non fuels; NRSF = 250 D -3.02E-03</td></t<>	- E+00 - E+00 E+00 E+00 E+00 E+00 0000000000	8.011 8.011 8.721 0.006 0.006 0.006 1.756 used as of renew. ry energy als; PEN wable se vater of EM 9. 1.1	E-02 E-01 E+00 E+00 E+00 E-03 raw mate able prim y resource RT = To econdary PSW2 C4 03E-05	- -1.94E+02 - -6.61E+02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 erials; PERM = hary energy bes used as raw tal use of non fuels; NRSF = 250 D -3.02E-03
Paramo PERI PERI PENF PENF SM RSF NRS FW Ca RESU Paramo	eter E M T RE RM RT F F aptior JLTS eter D D J J	Unit [MJ]	A1-3 3,98E+ 0.00E+ 3,98E+ 2,12E+ 0.00E+ 2,12E+ 4.36E+ 0.00E+ 1.23E+ PERE Us resourc matte renew HELC A 1,1 1,99 1,5 0.00	3	A4 - - 6.15E-02 - 2,12E+03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.34E-05 f renewable prir RE = Use NRM = USe hary energe UTPUT A4 3.57E-0 1.97E-0	e primary endowed and a second	A5 - - 4.91E-02 - - 6.18E-01 0.00E+00	y exclu y excluurces e prim ble prii = Use eewabl D WA	B6 - - 3.04E+03 - 3.04E+03 - 1.67E+04 0.00E+00	M PS	C2 - - - - - - - - - - - - -	1.41 7.71 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	- E+00 - E+00 E+00 E+00 E+00 E+00 E+00 E		E-02 E-01 E+00 E+00 E+00 E-03 raw mata able priny y resource RT = To econdary PSW2 C4 03E-05 99E+00	- -1.94E+02 - -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 erials; PERM = hary energy ces used as raw tal use of non fuels; NRSF = - - - - - - - - - - - - -

MER	[kg]	0.00E+00	-							
EEE	[MJ]	0.00E+00	0.00E+00	2.38E+00	0.00E+00	0.00E+00	0.00E+00	6.55E-01	-	
EET	[MJ]	0.00E+00	0.00E+00	6.72E+00	0.00E+00	0.00E+00	0.00E+00	1.80E+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 14 % and 20 % to total impact assessment, with exception for ADPE (98 %). Upstream emissions associated with steel- and aluminum making processes as well as from electronic and electro mechanic parts dominate this stage. The environmental impacts for the transport (A2) have a negligible impact within this stage.

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), 2018 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 2018 www.bau-umwelt.de

IBU PCR Part B

IBU PCR Part B: PCR 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.

To reflect the use phase (module B6), the energy consumption was included and, with exception of ADPE (2 %), it contributes between 79 % and 86 % for all the other impact categories considered.

In the end-of-life phase, there are loads and benefits (module D, negative values) considered (only ODP positive). 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).

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 9001:2015)

EN ISO 13849-1

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

GaBi 8 2018

GaBi 8 2018: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, thinkstep AG, Leinfelden-Echterdingen, 1992-2018.

GaBi database SP25:2016

GaBi 8 2018D: Documentation of GaBi 8: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, thinkstep AG, Leinfelden-Echterdingen, 1992-2018. <u>http://documentation.gabisoftware.com/</u>

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.

	CRIP	τιον ς)F HE	SYST	EM B	OUND	ARY (X = I	NCLUDE	D IN	LCA: I	MND =	MODU	JLE N	OT DE	CLARED)		
					EM BOUNDARY (X = INCLUDED IN LCA;										BENEFITS AND LOADS			
PROD	лост	STAGE	CONST ON PRO			USE STAGE								END OF LIFE STAGE				
			STAGE											SYSTEM BOUNDARYS				
			e								5	_		D		BOONDARTS		
lia	۲	ring	ansport from th gate to the site	~		lce		Replacement ¹⁾	Refurbishment ¹⁾	se la	wate	De-construction demolition	ť	ssin	_	5 m -		
w matei supply	spol	Ictu	t fro the	ldm	Use	enar	Repair	eme	hm	ation Iy us	ional v use	struc olitio	spol	oce	osa	Reuse- (ecover) ecyclinę ootentia		
Raw materia supply	Transport	Manufacturing	spor e to	Assembly	Ő	Maintenance	Re	olac	urbis	Operational energy use	atio u:	-constructi demolition	Transport	e pr	Disposal	Reuse- Recovery- Recycling- potential		
Ra	-	Ма	Transport from the gate to the site	4		Ma		Rep	Refu	Οē	Operational water use	De-d	F	Waste processing	_	<u> </u>		
A1	A2	A3	⊢ A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	<u>></u> C3	C4	D		
Х	Х	Х	Х	Х	MND	MND	MND	MNE	D MND	Х	MND	MND	Х	Х	Х	Х		
RESU	JLTS	GOF TH		\ - EN'	VIRON	MENT	TAL IM	PAC	T: One	piece	of EM	PSW2	250 sw	ing do	oor op	erator		
Parame	eter	Unit		1-3	4	4	A5		B6		C2		C3		C4	D		
GWF	Р	[kg CO ₂ · eq.]	- 1,5	8E+02	1.13	E-01	1.88E+	00	9.36E+02	1	.39E-02	4.3	33E-01	7.4	46E-01	-5.61E+01		
ODP	5	[kg CFC11-	1,6	7E-07	5.76E-13		9.12E-12		6.81E-07	7	.10E-14	3.1	16E-10	2.5	57E-12	2.22E-08		
AP		eq.] [kg SO ₂ ·	- 9,3	7E-01	6.76E-04		5.19E-04		4.18E+00	8.34E-05		1.9	1.93E-03		12E-04	-3.22E-01		
EP		eq.] [kg N-eq.] 4,4	3E-02	4.78E-05		2.98E-05		1.78E-01	5.89E-06			8.24E-05		77E-05	-8.46E-03		
Smo	g	[kg O ₃ - eq.]	1,0	005.01		E-02	1.21E-	02	3.78E+01	1	1.72E-03		1.75E-02		18E-02	-2.96E+00		
Resour	rces	[MJ]			2.24	E-01	6.18E-02		7.57E+02	2	2.77E-02		3.51E-01		64E-02	-4.04E+01		
Captio	on	GWP	= Global	warming	potentia	l; ODP =		zone depletion potential; AP = Acidificatio Smog, air; Resources = Resources, foss							ential; Smog =			
RESU	JLTS	OF TH	IE LCA	- RE	SOUR	CE US	ě		ce of El				loor o	perato	or			
Parame	eter	Unit	A1-3		A4		A5		B6		C2		C3		C4	D		
PERI	E	[MJ]	3,98E+02	2	-		-		-		-		-		-	-		
PER	м	[MJ]	0.00E+00	0	-		-		-		-		-		-	-		
PER	Т	[MJ]	3,98E+02		6.15E-0	6.15E-02 4.91E-		02 3.04E+03			7.58E-03		1E+00	8 (
PENR	RE	PENRE [MJ]					4.012 02	_	3.04E+03	7				0.0	01E-02	-1.94E+02		
PENR			2,12E+03	3	-		-		3.04E+03 -	7	-		-	0.0	01E-02 -	-1.94E+02 -		
PENR		[MJ]	2,12E+03		-		-		3.04E+03 - -	7	-		-		01E-02 - -	-1.94E+02 - -		
		[MJ] [MJ]		D	- - 1.57E+0	0	- - 6.18E-01		3.04E+03 - - 1.67E+04		-	7.7	- - '1E+00		01E-02 - - 72E-01	-1.94E+02 - - -6.61E+02		
SM	RΤ		0.00E+00	0 3	- 1.57E+0 0.00E+0		-		-	1	-		- - /1E+00 00E+00	8.7	-	-		
	RT I	[MJ]	0.00E+00 2,12E+03	0 3 0		0	- - 6.18E-01		- - 1.67E+04	1	- - .93E-01	0.0		8.7	- - 72E-01	- - -6.61E+02		
SM	RT I =	[MJ] [kg] [MJ] [MJ]	0.00E+00 2,12E+03 4.36E+00	0 3 0 0	0.00E+0	0	- - 6.18E-01 0.00E+00		- - 1.67E+04 0.00E+00	1 0. 0.	- - .93E-01 00E+00	0.0	00E+00	8.7 0.0 0.0	- - 72E-01 00E+00	- -6.61E+02 0.00E+00		
SM RSF	RT I F	[MJ] [kg] [MJ] [MJ] [m ³]	0.00E+00 2,12E+03 4.36E+00 0.00E+00 0.00E+00 1.23E+00	0 3 3 0 0 0 0 0 0 0	0.00E+0 0.00E+0 0.00E+0 4.34E-0	0 0 0 5	- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03		- - 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00	1 0. 0. 5	- .93E-01 00E+00 00E+00 00E+00 .35E-06	0.0	00E+00 00E+00 00E+00 48E-03	8.7 0.0 0.0 1.7	- 72E-01 00E+00 00E+00 00E+00 00E+00	- -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01		
SM RSF NRSI	RT I F	[MJ] [kg] [MJ] [MJ] [m ³] PERI renev	0.00E+00 2,12E+03 4.36E+00 0.00E+00 0.00E+00 1.23E+00 E = Use of vable prin	0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00E+0 0.00E+0 0.00E+0 4.34E-0 vable prin	0 0 0 5 nary endources u	- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ergy excl used as r	luding aw ma	- 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00 renewable aterials; PE	1 0. 0. 5 primary RT = To	- .93E-01 00E+00 00E+00 00E+00 .35E-06 / energy otal use o	0.0 0.0 0.0 3.4 resource	00E+00 00E+00 00E+00 48E-03 es used a able prim	8.7 0.0 0.0 1.7 as raw m pary ene	- 72E-01 00E+00 00E+00 00E+00 75E-03 naterials; orgy reso	- -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 PERM = Use of urces; PENRE =		
SM RSF NRSI	RT 	[MJ] [MJ] [MJ] [MJ] [MJ] [m ³] PERI Use	0.00E+00 2,12E+00 4.36E+00 0.00E+00 0.00E+00 1.23E+00 E = Use of vable prin of non rer	0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00E+0 0.00E+0 0.00E+0 4.34E-0 vable prin ergy reso e primary primary	0 0 5 0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ergy excl used as r escludir resource	luding aw ma ng non es useo	- 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00 renewable aterials; PE renewable das raw magnetic das raw magnetic renewable	1 0. 0. 5 primary RT = T c primar primars	- .93E-01 00E+00 00E+00 00E+00 .35E-06 / energy petal use of y energy PENRT	0.0 0.0 0.0 3.4 resource of renewa resource = Total 0	00E+00 00E+00 00E+00 48E-03 es used a able prim es used a use of no	8.7 0.0 0.0 1.7 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	- 72E-01 00E+00 00E+00 00E+00 75E-03 00E+00 75E-03 00E+00 raterials; vrgy reso materials; vable prii	- 		
SM RSF NRSI FW Cap	RT I F otion	[MJ] [kg] [MJ] [MJ] [m ³] Use c resou	0.00E+00 2,12E+03 4.36E+00 0.00E+00 0.00E+00 1.23E+00 E = Use of vable prin of non ren urces; SM	0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00E+0 0.00E+0 0.00E+0 4.34E-0: rable prir ergy resc e primary primary of secon	0 0 5 mary end purces u energy energy dary ma	- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ergy excl used as r excludir resource aterial; R	luding aw ma ng non is used SF = L fuels;	- 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00 renewable aterials; PE renewable das raw ma Jse of rene FW = Use	1 0. 0. 0. 5 primary RT = To primar atterials; wable s of net f	- .93E-01 00E+00 00E+00 00E+00 .35E-06 / energy ptal use of y energy PENRT recondar	0.0 0.0 0.0 3.4 resource of renewa resource = Total u y fuels; N er	00E+00 00E+00 10E+00 48E-03 es used a able prim es used a use of no NRSF = U	8.7 0.0 0.0 1.7 ss raw m bary ene as raw n n renew Jse of n	- 72E-01 00E+00 00E+00 00E+00 75E-03 naterials; orgy reso materials vable prin on renew	- -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 PERM = Use of urces; PENRE = ; PENRM = Use mary energy vable secondary		
SM RSF NRSI FW Cap	RT I F otion	[MJ] [Kg] [MJ] [MJ] [m ³] PERI renev Use c resou	0.00E+00 2,12E+03 4.36E+00 0.00E+00 0.00E+00 1.23E+00 E = Use of vable prin of non ren urces; SM	0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00E+0 0.00E+0 0.00E+0 4.34E-0: rable prir ergy resc e primary primary of secon	0 0 5 mary end purces u energy energy dary ma	- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ergy excl used as r excludir resource aterial; R	luding aw ma ng non is used SF = L fuels;	- 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00 renewable aterials; PE renewable das raw ma Jse of rene FW = Use	1 0. 0. 0. 5 primary RT = To primar atterials; wable s of net f	- .93E-01 00E+00 00E+00 00E+00 .35E-06 / energy ptal use of y energy PENRT recondar	0.0 0.0 0.0 3.4 resource of renewa resource = Total u y fuels; N er	00E+00 00E+00 10E+00 48E-03 es used a able prim es used a use of no NRSF = U	8.7 0.0 0.0 1.7 ss raw m bary ene as raw n n renew Jse of n	- 72E-01 00E+00 00E+00 00E+00 75E-03 naterials; orgy reso materials vable prin on renew	- 		
SM RSF NRSI FW Cap	RT F otion	[MJ] [Kg] [MJ] [MJ] [m ³] PERI renev Use c resou	0.00E+00 2,12E+03 4.36E+00 0.00E+00 0.00E+00 1.23E+00 E = Use of vable prin of non ren urces; SM	o 3 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00E+0 0.00E+0 0.00E+0 4.34E-0: rable prir ergy resc e primary primary of secon	0 0 5 mary end purces u energy energy dary ma	- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ergy excl used as r excludir resource aterial; R	luding aw ma ng non is used SF = L fuels;	- 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00 renewable aterials; PE renewable das raw ma Jse of rene FW = Use	1 0. 0. 0. 5 primary RT = To primar atterials; wable s of net f	- .93E-01 00E+00 00E+00 00E+00 .35E-06 / energy ptal use of y energy PENRT recondar	0.0 0.0 0.0 3.4 resource of renewa resource = Total u y fuels; N er	00E+00 00E+00 10E+00 48E-03 es used a able prim es used a use of no NRSF = U	8.7 0.0 0.0 1.7 ss raw m bary ene as raw n n renew Jse of n	- 72E-01 00E+00 00E+00 00E+00 75E-03 naterials; orgy reso materials vable prin on renew			
SM RSF NRSI FW Cap RESU door	RT F F btion ULTS Open	[MJ] [kg] [MJ] [MJ] [m ³] PERI renev Use c resou SOF TH rator	0.00E+00 2,12E+03 4.36E+00 0.00E+00 0.00E+00 1.23E+00 E = Use of vable prin of non rer urces; SM	0 3 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00E+0 0.00E+0 0.00E+0 4.34E-0: rable prirer ergy resc e primary of secon TPUT A4	0 0 0 5 mary encources (ources (ources (ources (o energy dary ma	- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ergy excludir resource aterial; R VS ANI	luding aw ma ng non es used SF = U fuels; D W/	- 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00 renewable aterials; PE renewable das raw m Jse of rene ; FW = Use ASTE CA B6	1 0. 0. 5 primary RT = To primar aterials; wable s of net f	- .93E-01 00E+00 00E+00 .35E-06 / energy penRT PENRT recondar resh wat ORIES	0.0 0.0 0.0 3.4 resource of renewa resource = Total u y fuels; N er : One	00E+00 10E+00	8.7 0.0 0.0 1.7 Iss raw m aary ene aas raw m Jse of n of EM	- 72E-01 00E+00 00E+00 00E+00 75E-03 naterials; regy reso naterials; vable prin oon renew 1 PSW2 C4			
SM RSF NRSI FW Cap RESU door Parame	RT F F opereter D	[MJ] [kg] [MJ] [MJ] [m ³] PER renev Use C resou S OF TH rator Unit	0.00E+00 2,12E+03 4.36E+00 0.00E+00 0.00E+00 1.23E+00 E = Use of vable prin of non ree f non ree f non rees f non rees AL-	0 3 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00E+0 0.00E+0 0.00E+0 4.34E-0: rable prir ergy resc e primary of secon	0 0 0 5 mary end burces u energy dary ma FLOV	- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ergy excl sed as r excludir resource aterial; R	luding aw ma ng non ss used SF = L fuels; D W/	- 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00 renewable aterials; PE renewable das raw ma Jse of rene ; FW = Use ASTE CA	1 0. 0. 5 primary RT = TC primar aterials; wable s of net f	- .93E-01 00E+00 00E+00 00E+00 .35E-06 7 energy PENRT econdar resh wat ORIES	0.0 0.0 0.0 3.4 resource = Total u y fuels; N er : One	00E+00 00E+00 00E+00 48E-03 es used a able prim es used a use of no uRSF = U piece	8.7 0.0 0.0 1.7 ss raw m bary ene ass raw m n renew Jse of n Of EM	- 72E-01 20E+00 20E+00 20E+00 20E+00 20E+00 75E-03 20E+00 75E-03 20E+00 200 20E+00 20E+00 200	- -6.61E+02 0.00E+00 0.00E+00 0.00E+00 -5.43E-01 PERM = Use of urces; PENRE = ; PENRM = Use mary energy vable secondary		
SM RSF NRSI FW Cap RESU door Parame HWD	RT I F F JLTS Oper eter D	[MJ] [MJ] [MJ] [MJ] [m ³] [m ³] [m ³] [m ³] [m ³] [renev Use C resou SOF The reator Unit [kg]	0.00E+00 2,12E+03 4.36E+00 0.00E+00 0.00E+00 1.23E+00 E = Use c vable prin of non rer urces; SM IE LCA A1 1,11E-	0 3 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00E+0 0.00E+0 0.00E+0 4.34E-0: vable primary primary of secon TPUT A4 3.57E-1	0 0 0 5 mary encode ources to energy dary ma FLOV	- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ergy excludir resource aterial; R VS ANI VS ANI A5 4.25E-0	luding aw ma ga non s user SF = L fuels; D W/	- 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00 renewable aterials; PE renewable d as raw m Jse of rene FW = Use ASTE CA B6 2.31E+00	1 0. 0. 5 primary RT = To primar aterials; wable s of net f	- .93E-01 00E+00 00E+00 00E+00 .35E-06 / energy ptal use of y energy PENRT resh wat ORIES C2 4.40E-07	0.0 0.0 0.0 3.4 resource of renewa resource = Total u y fuels; N er : One 1 2	00E+00 00E+00 10E+00 148E-03 148E-0	8.7 0.0 0.0 0.0 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 0 0 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7	- 72E-01 00E+00 00E+00 00E+00 75E-03 naterials; ergy reso naterials vable prin oon renew I PSW 2 C4 03E-05			
SM RSF NRSI FW Cap RESU door Parame HWD	RT F F btion ULTS oper eter D D	[MJ] [kg] [MJ] [MJ] [m ³] [m ³] [m ³] [m ³] [m ³] [kg] [kg]	0.00E+00 2,12E+03 4.36E+00 0.00E+00 0.00E+00 1.23E+00 E = Use of vable prin of non ree incres; SM IE LCA A1-1 1,11E 1,99E-1	0 3 0 <t< td=""><td>0.00E+0 0.00E+0 0.00E+0 4.34E-0: rable primary of secon TPUT A4 3.57E-1 1.97E-1</td><td>0 0 0 5 mary end ources u v energy energy dary ma FLOV 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ergy excludir resource aterial; R VS ANI A5 4.25E-0 4.77E-0</td><td>luding aw ma g non s used SF = L fuels; D W/</td><td>- 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00 renewable aterials; PE renewable das raw in Jse of renewable FW = Use ASTE CA B6 2.31E+00 5.38E+00</td><td>1 0. 0. 5 primary RT = TC primar terials; wable s of net f</td><td>- .93E-01 00E+00 00E+00 .35E-06 / energy penRT PENRT PENRT econdar resh wat ORIES C2 4.40E-07 2.43E-05</td><td>0.0 0.0 0.0 3.4 resource = Total u y fuels; N er : One 1 2 1</td><td>00E+00 10E+00</td><td>8.7 0.0 0.0 0.0 1.7 ss raw m bary ene ass raw m n renew Jse of n Of EM 9. 9. 1.9</td><td>- 72E-01 00E+00 00E+00 00E+00 75E-03 naterials; regy reso naterials; regy reso naterials vable prin oon renew 1 PSW2 C4 03E-05 99E+00</td><td></td></t<>	0.00E+0 0.00E+0 0.00E+0 4.34E-0: rable primary of secon TPUT A4 3.57E-1 1.97E-1	0 0 0 5 mary end ources u v energy energy dary ma FLOV 0 0 0 0 0 0 0 0 0 0 0 0 0	- 6.18E-01 0.00E+00 0.00E+00 0.00E+00 5.46E-03 ergy excludir resource aterial; R VS ANI A5 4.25E-0 4.77E-0	luding aw ma g non s used SF = L fuels; D W/	- 1.67E+04 0.00E+00 0.00E+00 0.00E+00 7.51E+00 renewable aterials; PE renewable das raw in Jse of renewable FW = Use ASTE CA B6 2.31E+00 5.38E+00	1 0. 0. 5 primary RT = TC primar terials; wable s of net f	- .93E-01 00E+00 00E+00 .35E-06 / energy penRT PENRT PENRT econdar resh wat ORIES C2 4.40E-07 2.43E-05	0.0 0.0 0.0 3.4 resource = Total u y fuels; N er : One 1 2 1	00E+00 10E+00	8.7 0.0 0.0 0.0 1.7 ss raw m bary ene ass raw m n renew Jse of n Of EM 9. 9. 1.9	- 72E-01 00E+00 00E+00 00E+00 75E-03 naterials; regy reso naterials; regy reso naterials vable prin oon renew 1 PSW 2 C4 03E-05 99E+00			

MER	[kg]	0.00E+00	-							
EEE	[MJ]	0.00E+00	0.00E+00	2.38E+00	0.00E+00	0.00E+00	0.00E+00	6.55E-01	-	
EET	[MJ]	0.00E+00	0.00E+00	6.72E+00	0.00E+00	0.00E+00	0.00E+00	1.80E+00	-	
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = ption 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
thinkstep	Author of the Life Cycle Assessment thinkstep AG Hauptstraße 111-113 70771 Leinfelden-Echterdingen Germany	Tel Fax Mail Web	+49 711 34 18 17 0 +49 711 34 18 17 25 info@thinkstep.com www.thinkstep.com
ENTRE//MATIC	Owner of the Declaration Entrematic Group AB Lodjursgatan 10 SE-261 44 Landskrona Sweden	Tel Fax Mail Web	+46 10 47 47 000 +46 418 284 12 info.@entrematic.com www.entrematic.com