ENVIRONMENTAL PRODUCT DECLARATION

HANCHETT ENTRY SYSTEMS, INC

SECURITRON M62 MAGNALOCK



Magnetic lock providing 1200lbs of holding force: fully sealed electronics are protected from water and dust, surface mounted with minimal tools, mounted using steel machine screws into finishing nuts, ten feet [3.05m] of jacketed, stranded conductor, operates with 12 or 24V DC power

JECURITRON

ASSA ABLOY

ASSA ABLOY is committed to providing products and services that are environmentally sound throughout the entire production process and the product lifecycle. Our unconditional aim is to make sustainability a central part of our business philosophy and culture, but even more important is the job of integrating sustainability into our business strategy. The employment of EPDs will help architects, designers and LEED-APs select environmentally preferable door openings. The Securitron M62 Magnalock EPD provides detailed requirements with which to evaluate the environmental and human health impacts related to producing our door openings. ASSA ABLOY will continue our efforts to protect the environment and health of our customers/end users and will utilize the EPD as one means to document those efforts.





ENVIRONMENTAL PRODUCT DECLARATION



Securitron M62 Magnalock According to EN 15804 and ISO 14025

Dual Recognition by UL Environment and Institut Bauen und Umwelt e.V.

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.



PROGRAM OPERATOR	UL Environment			
DECLARATION HOLDER	ASSA ABLOY / Hanchett Entry Sy	ASSA ABLOY / Hanchett Entry Systems, Inc / Securitron		
ULE DECLARATION NUMBER	4786545067.138.1	4786545067.138.1		
IBU DECLRATION NUMBER	EPD-ASA-20150145-IBA1-EN			
DECLARED PRODUCT	Securitron M62 Magnalock			
REFERENCE PCR	Locks and fittings, 07.2014			
D				
DATE OF ISSUE	May 18, 2015			
PERIOD OF VALIDITY	5 years			
	General information Product / Product description			
CONTENTS OF THE	LCA calculation rules			
DECLARATION	LCA scenarios and further technic LCA results	cal information		
	References			
The PCR review was conducted		IBU – Institut Bauen und Umwelt e.V.		
	,-	PCR was approved by the Independent Expert Committee (SVA)		
The CEN Norm EN 15804 serves as the core PCR. This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories		ubl		
☐ INTERNAL ☐ EXTERNAL		Wade Stout		
This life cycle assessment was with EN 15804 and the reference	independently verified in accordance e PCR by:	IBU - Institut Bauen und Umwelt e.V.		





1. General Information

Hanchett Entry Systems, Inc

Programme holder

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

Declaration number

EPD-ASA-20150145-IBA1-EN

This Declaration is based on the Product Category Rules:

Locks and fittings, 07.2014 (PCR tested and approved by the independent expert committee)

Issue date

18.05.2015

Valid to

17.05.2020

Wermanes

Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)

Dr.-Ing. Burkhart Lehmann (Managing Director IBU)

Securitron M62 Magnalock

Owner of the Declaration

Hanchett Entry Systems, Inc 10027 S 51st Street, Suite 102 Phoenix, AZ 85044

Declared product / Declared unit

The declaration represents 1 magnetic lock – Securitron M62 Magnalock consisting of the following items:

- Securitron M62 Magnetic Lock
- Strike
- Mounting Hardware

Scope

This declaration and its LCA study are relevant to Securitron M62 Magnalock.

The primary manufacturing processes are made by external suppliers and the final manufacturing processes and assembly for occur at the manufacturing factory in Phoenix, Arizona, USA.

Verification

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

internall	y





2. Product

2.1 Product description

Product name: Securitron M62 Magnalock

Product characteristic: 1200lb Magnetic Door Lock

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- Magnetic lock providing 1200lbs of holding force
- Fully sealed electronics are protected from water and dust
- Surface mounted with minimal tools
- Mounted using steel machine screws into finishing nuts
- Architectural brushed stainless steel finish (US32D/630)
- Ten feet [3.05m] of jacketed, stranded conductor
- · Operates with 12 or 24V DC power
- UL Listed

2.2 Application

Securitron M62 Magnalocks are designed for: The Securitron M62 Magnalock can be used indoors or outdoors to secure high traffic, high security, interior, exterior and perimeter doors and gates.

2.3 Technical Data

The table presents the technical properties of Securitron M62 Magnalock:

Technical data

Parameter	Value	Unit
Holding Force	1200	lbs.
Current Draw and	250mA at	mΑ
Voltage	12VDC	and
-		VDC
Operating	-40 to +140	°F
Temperature		
Shipping Weight	11	lbs.

2.4 Placing on the market / Application rules

The standards that can be applied for Securitron M62 Magnalocks are:

- UL10C
- UL294
- ANSI/BHMA A156.23



2.5 Delivery status

Securitron M62 Magnalocks is delivered as in a box size - 380 mm x 185 mm x 26 mm

2.6 Base materials / Ancillary materials

The average composition for Securitron M62 Magnalocks is as following:

Component	Percentage in mass (%)
Copper	15.7
Steel	67.2
Stainless steel	5.4
Zinc	0.01
Electronics	0.4
Electro mechanics	0.1
Urethane	5.5
Others	5.7
Total	100.0

2.7 Manufacture

The primary manufacturing processes are made by Tier 1 suppliers and the final manufacturing processes occur at in factory Phoenix, Arizona.

The electronics and mechanics are produced in China, Mexico and USA. The components come from processes like stamped steel, turning, zinc and steel casting. Final assembly takes place in the United States.

The factory of Phoenix has a certification of Quality Management system in accordance with ISO 9001:2008

2.8 Environment and health during manufacturing

ASSA ABLOY 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 environmental management program effectiveness is evaluated.
- Code of Conduct covers human rights, labor practices and decent work. Management of ASSA ABLOY is aware of their roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance.
- Any waste metals during machining are separated and recycled. The waste from the water-based painting process is delivered to waste treatment plant.

2.9 Product processing/Installation

Securitron M62 Magnalocks are distributed through and installed by trained installation technicians, such as locksmiths, carpenters etc. adhering to local/national standards and requirements.

2.10 Packaging

Securitron M62 series are packed in a cardboard box with corrugated carton inlays. The packaging is fully

recyclable. Separate lock case package with dimensions: 380 mm x 185 mm x 26 mm

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

Material	Value (%)
Cardboard/paper	100.0
Plastics	0.0
Total	100.0

2.11 Condition of use

To maintain a strong bond, dust debris and corrosion should be removed by cleaning with rubbing alcohol or a silicon based cleaner and a clean cloth. Cleaning once per year is usually sufficient.

2.12 Environment and health during use

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

2.13 Reference service life

Approved for 1,000,000 cycles under normal working conditions, 20 years depending on cycle frequency.

2.14 Extraordinary effects

Fire

Suitable for use in fire and smoke doors (EN 14846)

Water

Contain no substances that have any impact on water in case of flood. Electric operation of the device will be influenced negative.

Mechanical destruction

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

2.15 Re-use phase

The majority, of components is steel, iron and copper which can be recycled. The magnalocks can be mechanically dissembled to separate the different materials. The plastic components can be used for energy recovery in an incineration plant. It is possible to re-use the product during the reference service life and be moved to one door to another.

2.16 Disposal

The product can be mechanically dissembled to separate the different materials. 94.4% of the materials used are recyclable. The rest is disposed as a construction waste for landfill.

2.17 Further information

Hanchett Entry Systems, Inc. 10027 S. 51st St, Ste. 102 Phoenix, AZ 85044

Tel: 1-800-626-7590 http://www.securitron.com www.ASSAABLOY.com



3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of Securitron M62 Magnalock as specified in Part B requirements on the EPD for PCR Locks and fittings: (mechanical & electromechanical locks & fittings)

Declared unit

Deciared with				
Name	Value	Unit		
Declared unit	1	piece of magnet		
Mass of product (without packaging)	4.95	kg		
Conversion factor to 1 kg	0.202	-		

3.2 System boundary

Type of the EPD: cradle to gate - with Options The following life cycle phases were considered:

Production stage:

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

Construction stage:

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

The use stage:

B2 - Maintenance (cleaning of the locks)

Use stage related to the operation of the building includes:

• B6 - Operational energy use

End-of-life stage:

- C2 Transport to waste processing
- C3 Waste processing for recycling
- 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 electric strike is used in the United States of America, thus an US 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 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 validations during the commission of the present study in order to ensure its quality of the present document and results. 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 for:

- 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

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

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site (Paper packaging)	0.07	kg

Maintenance (B2)

Name	Value	Unit
Water for cleaning	0.5	kg/a

Reference service life

Name	Value	Unit
Reference service life	20	а

Operational energy use (B6)

Name	Value	Unit
Electricity consumption	504	kWh
Days per year in use	365	d
Hours per day in on mode	23	h
Power consumption per mode in W	3	W

End of life (C1-C4)

Name	Value	Unit
Collected separately Copper, stainless steel, steel, zinc, electronics, electro mechanics, urethane	4.95	kg
Collected as mixed construction waste – construction waste for landfilling	0.28	kg
Reuse Plastics / Urethane	0.27	kg
Recycling Copper, stainless steel, steel, zinc, electronics, electro mechanics	4.68	kg
Landfilling - Construction waste for landfilling	0.28	kg

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

Name	Value	Unit
Collected separately waste type	5.02	kg
(including packaging)	0.02	i, g
Recycling Copper	15.5	%
Recycling Stainless steel	5.3	%
Recycling Steel	66.3	%
Recycling Zinc	0.01	%
Recycling Electronics	0.4	%
Recycling Electro mechanics	0.1	%
Reuse Plastics / urethane	5.4	%
Reuse Paper packaging (from A5)	1.4	%
Loss Construction waste for	5.6	%
landfilling (no recycling potential)	5.0	/0



5. LCA: Results

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

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Paramer PERE PERN PENRI PENRI SM RSF	Re Re Resc. Total	newable enewable urces as all use of energy renewa as mat otal use of renewas mat otal use of renewas of renewas es of renewas of re	primary primar	energy en	y as gy ation nary ergy ergy ble ss al ary	(MJ) (MJ) (MJ) (MJ) (MJ) (MJ) (MJ) (MJ)	1.81 0.00 1.81 2.49 0.00 2.49 6.24 0.00 0.00 1.15	E+01 10E+00 0E+00 0E+000	A4 1.56E-01 3.97E+00 0.00E+00 0.00E+00 0.00E+00 1.10E-04	A5	B 1.22 1.69 0 0.000 0 0.000 0 0.000 0 0.000	E-02 3 E-02 3 E-01 4 E+00 0 E+00 0 E-04 1 ORIE	B6	C2 1.56E-01 3.97E+000 0.00E+000 0.00E+000 1.10E-04 piece (5.97E- - - - - - - - - - - - - - - - - - -	-03 2.5 -02 3.7 +00 0.00 +00 0.00 -05 1.9	- 11E-02 6E-01 DE+00 DE+00 DE+00 GE-03 n M6		
Paramer PERE PERM PERT PENRI PERE PERE PERE PERE PERE PERE PERE PE	Re Re Re Resc. Total Resc. Tot	newable enclared as as matotal use of renewable or renewa as enclared as matotal use of see of renewable of non record of non re	aramete primary progression s material s material s material dalle primary progression able primary progression dalle primary da	energy en	y as gy ation nary ergy ergy ble es al ary	Unit [MJ] [MJ]	1.81 0.00 1.81 2.49 0.00 2.49 6.24 0.00 0.00 1.15	E+01 10E+00	A4 1.56E-01 3.97E+00 0.00E+00 0.00E+00 1.10E-04 ID WAS	2.52E-0 - 3.16E-0 0.00E+0 0.00E+0 2.80E-0 A5	B 1 1.22 1.69 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00	E-02 3 E-02 3 E-01 4 E+00 0 E+00 0 E+00 Te-04 1 ORIE	B6	C2 1.56E-01 3.97E+00 0.00E+00 0.00E+00 1.10E-04 piece (5.97E 3.27E- 0.00E- 0.00E- 1.47E- C3	-03 2.5 -02 3.7 -00 0.00 +00 0.00 +00 0.00 -05 1.9	- 11E-02		
Paramer PERE PERM PERT PENRI PENRI PENRI PENRI PENRI PENRI PENRI PENRI PENRI PERM RSF WAgn Param	Re R	newable enewable enewable enewable energial use of energial enewable enematical use of energial energi	primary ergy carr ergy carr s materia f renewa gy resou able prim erial utili of non re energy re excondary ewable s fuels enewable fuels enewable fuels enet fresh Paramet	energy en	y as gy ation mary ergy ergy lole es al ary uttpl mary uttpl mary ergy ergy ergy ergy ergy ergy ergy er	Unit [MJ] [MJ]	1.81 0.000 1.81 2.49 0.000 2.49 6.24 0.000 1.15 LOW	E+01 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	A4 1.56E-01 - 3.97E+00 0.00E+00 0.00E+00 1.10E-04 ID WAS A4 9.04E-06	2.52E-0 - 2.52E-0 - 3.16E-0 0.00E+0 0.00E+0 0.00E+0 2.80E-0 STE CA	B 1.22 1.69 0 0.000 0	E-02 3 E-02 3 E-01 4 E+00 0 E+00 0 E-04 1 ORIE B2 3E-05	B6	C2 1.56E-01 - 3.97E+00 0.00E+00 0.00E+00 0.00E+00 1.10E-04 piece (C2 9.04E-06	5.97E- 5.97E 3.27E- 0.00E- 0.00E- 1.47E- of Seconds 4.53E	-03 2.5 -02 3.7 +00 0.00 +00 0.00 -05 1.9 curitro	- 11E-02 6E-01 DE+00 DE+00 DE+00 CC4		
Paramer PERE PERM PERT PENRI PERI PENRI PERI PENRI PERI PENRI PENR	E Nor T T Use Use Use D No D N	newable enewable enewable enewable energial use of energial enewable energial enewable energial enewable enewable energial enewable enewable enewable energial enewable energial enewable energial enewable energial enewable enewable energial enewable energial enewable energial enemable energial enemable energial enemable energial enemable enemable enemable enemable enemable enemable enemable enemable energial enemable energial enemable enemab	aramete primary ergy carr le primary s materia f renewa gy resou able prim hergy ca able prim herial utili of non re hergy re condary ewable s fuels enewabl fuels net fresh Paramete bus wast dous wast dous wast tive wast	energy en	y as gy y ation mary ergy ergy ergy undary undary undary	Unit [MJ] [MJ]	1.81 0.00 1.81 2.49 0.00 2.49 6.24 0.00 0.00 1.15 OV	E+01 10E+00 0E+00 0E+000	A4 1.56E-01 3.97E+00 0.00E+00 0.00E+00 1.10E-04 ID WAS A4 9.04E-06 4.99E-04 5.19E-06	2.52E-0 - 2.52E-0 - 3.16E-0 0.00E+0 0.00E+0 2.80E-0 STE CA A5 2.18E-1 2.42E-1 1.85E-1	B 1.22 1.69 0 0 0.00 0 0.00 0 0.00 1 6.41 1 T E G	E-02 3 E-02 3 E-01 4 E+00 0 E+00 0 E-04 1 ORIE B2 3E-05 1 1E-02 5 5E-06 6	B6	C2 - 1.56E-01 - 3.97E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.10E-04 piece (C3	-03 2.5 -02 3.7 +00 0.00 +00 0.00 -05 1.9 -06 2.6 -05 7.4 -06 1.5	- 11E-02		
Paramer PERE PERE PENRI PERE PERE PERE PERE PERE PERE PERE PE	Re Re Resc. Total	newable enewable enewable enewable enewable energy in renewa as mational use of many edge of see of ren of non re	aramete primary prigy carr primary prigy carr s materia renewa gy resou able prim hergy ca able prim hergy ca able prim hergy resoundary evable s fuels herewable fuels heresh Paramete usus waste dous waste dous waste here waste here waste heresh	energy en	y as gy ation nary ergy ergy ergy utle ss al ary ndary utple ssed posed ssed ssed	Unit [MJ] [MJ]	1.81 0.00 1.81 2.49 0.00 2.49 6.24 0.00 0.00 1.15 LOW	E+01 10E+00 0E+00 0E+000	A4	2.52E-0 - 3.16E-0 0.00E+0 0.00E+0 0.00E+0 2.80E-0 STE CA 4.5 1.2.42E-1 1.2.42E-1 1.1.85E-1 0.00E+0 0.00E+0	1.69 1.69 1.69 1.69 1.69 1.69 1.69 1.69	E-02 3 E-01 4 E+00 0 E+00 0 E-04 1 ORIE B2 3E-05 1 5E-06 5 5E-06 5	B6		5.97E- 5.97E- 0.00E- 0.00E- 1.47E- 0 G3 4.53E 4 1.05E 6 4.71E 0 0.00E-	-03 2.5 -03 2.5 -02 3.7 +00 0.00 +00 0.00 -05 1.9 -06 2.6 -05 7.4 -06 1.5 +00 0.0	- 11E-02 6E-01 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00 0E+00		
Paramer PERE PERE PENRI PERE PERE PERE PERE PERE PERE PERE PE	Re R	newable enewable enewable enewable enewable energy in renewa as mational use of many edge of see of ren of non re	aramete primary progression and the secondary progression and the	energy en	y as gy ation nary ergy ergy ble ss al ary ndary UTP UTP USS ged posed ssed ged ged	Unit [MJ] [MJ]	1.81 0.00 1.81 2.49 0.00 2.49 0.00 0.00 1.15 -OW	E+01 10E+00 0E+00 0DE+00 0DE+0	A4 1.56E-01 3.97E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.99E-02 5.19E-06 0.00E+06 0.00E+06 0.00E+06	2.52E-0 2.52E-0 3.16E-0 0.00E+0 0.00E+0 2.80E-0 TE CA A5 2.18E-1 1.48E-1 1.48E-1 1.48E-1 0.00E+0 0.00E-0 0.00E-0	B 1.22 2 1.69 0 0.00 0 0 0 0.00 0 0 0.00 0 0 0 0	E-02 3 E-02 3 E-01 4 E+00 0 E+00 0 E-04 1 ORIE B2 3E-05 3 1E-02 1 5E-06 0 DE+00 0 DE+00 0	B6	C2 1.56E-01 - 3.97E+00 0.00E+00 0.00E+00 0.00E+00 1.10E-04 piece (5.97E- 5.97E 5.97E 0.00E- 0.00E- 1.47E- C3 4.1.05E 6.4.71E 0.0.00E- 0.00E- 0.00E	-02 3.7 +00 0.00 +00 0.00 -05 1.9 -06 2.6 -05 7.4 -06 1.5 +00 0.00 +00 0.00	- 11E-02 6E-01 DE+00 DE+00 DE+00 OE+00 F-05 OE+00 OE+00 OE+00 OE+00 OE+00		
Paramer PERE PENRI PERI PENRI PENRI PERI PENRI P	Re Re Re Resc. Tot. Nor T F Use Use Black	newable enewable enewable enewable energy all use of energy as en renewa as matotal use of see of ren of non return enewable energy en renewal	aramete primary progression and the secondary progression and the	energy en	y as gy ation mary ergy ergy ble es al ary uttpl wsed posed se g g y tripy	Unit [MJ] [MJ]	1.81 0.00 1.81 2.49 0.00 2.49 6.24 0.00 1.15 OW 1 1.15 OW 1 1.15 O	E+01 1 E+00 0 E+01 1 DE+00 0 D	A4 1.56E-01 3.97E+00 0.00E+00 0.00E+00 0.00E+00 1.10E-04 1D WAS A4 9.04E-06 4.99E-04 5.19E-06 0.00E+00 0.00E+00 0.00E+00	2.52E-0 2.52E-0 3.16E-0 0.00E+0 0.00E+0 2.80E-0 2.80E-0 A5 6 2.18E-6 1 2.42E-6 1 1.85E-0 0.00E+0 0.00E+0 1 2.2E-0 1 1.22E-1	B 1.22 2 1.69 0 0.00 0 0.00 0 0.00 1 6.41 1 6.41	E-02 3 E-02 3 E-01 4 E+00 0 E+00 0 E-04 1 ORIE B2 3E-05 1 1E-02 5 5E-06 0 0E+00 0 0E+00 0 0E+00 0 0E+00 0 0E+00 0	B6	C2 - 1.56E-01 - 3.97E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.99E-04 5.19E-06 0.00E+00 0.00E+00 0.00E+00 0.00E+00	5.97E- 5.97E 5.97E- 0.00E- 0.00E- 1.47E- 0 6 4.53E 4 1.05E 5 4.71E 0 0.00E-	-03 2.5 -02 3.7 +00 0.00 +00 0.00 -05 1.9 curitro -06 2.6 -05 7.4 -06 1.5 +00 0.0 +00 0.0 +00 0.0 +00 0.0 +00 0.0 +00 0.0 +00 0.0 +00 0.0	- 11E-02 6E-01 0E+00		

6. LCA: Interpretation

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

The production phase (modules A1-A3) contributes between 1% and 12% to the overall results for all the environmental impact assessment categories hereby considered, except for the abiotic depletion potential (ADPE), for which the contribution from the production phase accounts for app. 99% - this



impact category describes the reduction of the global amount of non-renewable raw materials, therefore, as expected, it is mainly related with the extraction of raw materials (A1).

Within the production phase, the main contribution for all the impact categories is the production of steel, with app. 96%, mainly due to the energy consumption on this process. Steel accounts with app. 67% to the overall mass of the product, therefore, the impacts are in line with the mass composition of the product. The environmental impacts for the transport (A2) have a negligible impact within this stage.

To reflect the use phase (module B6), the energy consumption was included and it has a major contribution for all the impact assessment categories considered - between 87% and 98%, with the exception of ADPE (0.6%). This is a result of 23 hours of operation in on mode per day and per 365 days in a year.

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

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: PCR Guidance-Texts for Building-Related Products and Services. From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU). Part B: Requirements on the EPD for Locks and fittings. www.bau-umwelt.com

ISO 14025

ISO 14025:2011-10: 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

GaBi 6 2013

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

GaBi 6 2013D

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

ISO 1400

Environmental management systems - Requirements with guidance for use (ISO 14001:2004 + Cor. 1:2009)

ISO 9001:2008

ISO 9001:2008: Quality management systems - Requirements (ISO 9001:2008).

UL10C

Positive Pressure Fire Tests of Door Assemblies

UL294

Access Control System Units

ANSI/BHMA A156.23

This Standard establishes requirements for electromagnetic locks and includes cyclical, dynamic, operational, strength and finish tests.



9. Annex

Results shown below were calculated using TRACI Methodology.

DESC	RIP	TION O	F THE	SYST	EM E	OUN	DARY (X = INC	LUDE	D IN	LCA;	MND =	MODU	LE N	OT [DECLA	RED)	
PRODUCT STAGE		STAGE	CONSTRUCTI ON PROCESS STAGE		EM BOUNDARY (X = INCLUDED IN LCA; I								END OF LIFE STAGE				BENEFITS AND 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	De-construction demolition	Transport	Waste processing	Disposal	Reuse-	Recycling- potential	
A 1	A2	A3	A4	A5	B1	B2	В3	B4	B5	В6	B7	C1	C2	C3	C4	ı	D	
Х	Χ	Х	Х	Χ	MND	Х	MND	MND	MND	Χ	MND	MND	Х	Χ	Х		X	
RESU	LTS	OF TH	E LCA	\ - ENV	/IROI	MEN	ITAL IN	IPACT:	One p	oiece	of Se	curitro	n M62 N	Magna	aloc	k		
Parameter		Pa	Parameter		U	nit	A1-3	A1-3 A4			B2	В6	C2	СЗ		C4	D	
GWF	>	Global w	arming p	otential	[kg C	O ₂ -Eq.]	1.85E+01	2.87E-01	1 9.63E-02		26E-02	3.38E+02	2.87E-01	01 1.84E-03		7.93E-01	- 7.16E+00	
ODF	ODP Depletion potential of stratospheric ozone				[kg CFC11- Eq.]		1.80E-09	1.46E-12	4.69E	-13 3.8	89E-13	1.25E-07	1.46E-12	12 1.34E-12		2.54E-12		
AP	AP Acidification potential of land		[kg S	O ₂ -Eq.]	1.01E-01	1.71E-03	2.66E	-05 1.9	94E-04	1.07E+00	1.71E-03	8.20E	8.20E-06 2		-3.19E-02			
EP	and water		[kg l	N-eq.]	1.22E-02	1.21E-04	1.53E	-06 2.0	03E-04	5.25E-02	.25E-02 1.21E-04		-07 7	7.48E-06	-1.64E-03			
Smo	g	Ground-lev					1.33E+00	3.53E-02	6.21E	-04 3.3	39E-03	9.10E+00	3.53E-02	7.42E	-05 1	1.97E-03	-4.34E-01	
Resources Re		Resources – fossil resources			[1]	MJ]	1.62E+01	5.69E-01	3.17E	-03 1.	56E-02	2.30E+02	.30E+02 5.69E-01		-03	3.48E-02 - 2.07E+		
RESU	LTS	OF TH	FICA	- DEC	OLID		<u> </u>											
			L LUF	I - VES	DUCK	CE U	SE: On	e piece	of Se	curit	tron M	162 Mag	nalock					
Param	eter		Parame		OUR	CE U Unit	SE: On A1-3	e piece A4	of Se		B2	62 Mag B6	nalock C2	C3	3	C4	D	
Param PER		Renewa	Parame ble primar	t er ry energy a				A4							3	C4	D -	
	E	Renewa Renew	Parame ble primar energy ca rable prima	t er ry energy a	as /	Unit	A1-3	A4							3	C4 -	D -	
PER	E M	Renewa Renew resource:	Parame ble primar energy ca vable prima s as mater	ry energy a rrier ary energy rial utilizati	as /	Unit [MJ]	A1-3 1.81E+01	A4	- A	5	B2 -	B6	C2 -			-	-	
PER PER	E M T	Renewa Renew resource: Total use er	Parame ble primare energy ca rable primare s as mater e of renew nergy reso	ry energy a rrier ary energy rial utilizati able prima ources ary energy	as / ion ary	Unit [MJ] [MJ]	A1-3 1.81E+0	A4 1 - 1 1.56E-0	- A	5	- -	B6 -	C2 - -			-	-	
PER PER	E M T	Renewa Renew resource: Total use er Non renev	Parame ble primare energy ca rable primare s as mater e of renew energy reso vable prime energy ca	ry energy a rrier ary energy rial utilizati able prima burces nary energy rrier nary energy	as / ion ary y as	Unit [MJ] [MJ] [MJ]	A1-3 1.81E+0° 0.00E+00 1.81E+0°	A4 1 - 1 - 1 1.56E-0	- A	5	- -	B6 -	C2 - -			-	-	
PER PER PENF	E M T RE	Renewa Renewa resource: Total use er Non renew ma Total use o	Parame ble primarenergy car vable primares as mater e of renew nergy resorvable prime energy car vable prime energy car vable prime energy car vable prime	ry energy a rrier ary energy rial utilizati able prima purces hary energy rrier hary energy zation	as / ion ary y as	Unit [MJ] [MJ] [MJ]	A1-3 1.81E+0° 0.00E+00 1.81E+0° 2.49E+0°	A4 1 - 1 1.56E-0 2 - 0 -	A:	i-03 1	- -	B6	C2 - -	5.97E	E-03	-	-	
PER PENF PENF SM	E M T RE RM	Renewa Renew resource: Total use er Non renew Mon renew Total use of	Parame ble primatenergy ca rable prima rable prima s as matel e of renewnergy resorvable prim energy ca vable prim energy ca vable prim aterial utili of non rene ergy resorvable s econdate	ry energy a rrier any energy rial utilizati able prima surces sary energy rrier sary energy zation ewable prin surces	as / ion ary y as y as mary	Unit [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	A1-3 1.81E+0* 0.00E+00 1.81E+0* 2.49E+02 0.00E+00 2.49E+02	A4 1	A:	i-03 1	B222E-0269E-01	B6 3.82E+02 - 4.94E+03 0.00E+00	- 1.56E-01	5.97E	E-03	2.51E-02 - - 3.76E-01	- -2.11E+00 - - -7.61E+01 0.00E+00	
PER PER PENF PENF SMM	E M T RE RM RT	Renewa Renewa resource: Total use er Non renew ma Total use of Use of renewa	Parame Parame ble primare energy ca rable prim s as mater e of renewnergy reso vable prim energy ca vable prim aterial utili of non rene energy reso i secondar ewable se	ter ry energy a rrier ary energy rial utilizati able prima surces sary energy rrier ary energy zation swable prim surces ry material econdary fi	as / / / / / / / / / / / / / / / / / /	Unit [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	A1-3 1.81E+0° 0.00E+00 1.81E+0° 2.49E+02 0.00E+00 6.24E-01 0.00E+00	A4 1	2.52E	5	B222E-0269E-01 .00E+00	B6 - 3.82E+02 - 4.94E+03 0.00E+00 0.00E+00		5.97E 3.27E 0.00E 0.00E	E-03 E-02 E+00 E+00	2.51E-02 - - 3.76E-01 0.00E+00	-2.11E+007.61E+01 0.00E+00 0.00E+00	
PER PER PENF PENF PENF RSF	T T RE	Renewa Renewa resource: Total use er Non renew ma Total use o er Use of Use of no	Parame Parame ble prima energy ca vable primes s as mater e of renew ergy reso vable prime energy ca vable prime aterial utili of non rene ergy reso f secondar enewable se en renewable se en renewable se fuels	ter y energy a rrier any energy rial utilizati able prima surces any energy rier any energy rier any energy zation swable prima surces ry material econdary frole second	as / / / / / / / / / / / / / / / / / /	Unit [MJ]	A1-3 1.81E+0* 0.00E+00 1.81E+0* 2.49E+02 0.00E+00 2.49E+02 0.00E+00 0.00E+00	A4 1	2.52E	5	B222E-0269E-01 .00E+00 .00E+00	B6 - 3.82E+02 - 4.94E+03 0.00E+00 0.00E+00 0.00E+00	1.56E-01 3.97E+00 0.00E+00 0.00E+00	5.97E	E-03 E-02 E+00 E+00	2.51E-02 - - 3.76E-01 0.00E+00 0.00E+00		
PER PER PENF PENF SM RSF NRS	E E E E E E E E E E E E E E E E E E E	Renewa Renewa Renewa resource: Total use er Non renew ma Total use of er Use of ren Use of no Use Use	Parame Parame ble prima energy ca vable primes a sa mater e of renew ergy reso vable prime energy ca vable prime aterial utili of non rene ergy reso seewable see non renewable ewable see non renewable fuels of net fres	rrier any energy a rrier any energy rial utilizati able prima nurces any energy rier any energy zation awable prin nurces ry material accondary fr oble second sh water	as / / ion ary y as y as mary uels dary	Unit [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [Kg] [MJ] [MJ]	A1-3 1.81E+0° 1.81E+0° 2.49E+0° 2.49E+0° 6.24E-0° 0.00E+0° 1.15E-0° 1.15E-0°	A4 1	2.52E	5	B222E-0269E-01 .00E+00 .00E+00 .00E+00	B6 - 3.82E+02 - 4.94E+03 0.00E+00 0.00E+00 1.74E+00		5.97E	E-03 E-02 E+00 E+00	2.51E-02 - - 3.76E-01 0.00E+00	-2.11E+007.61E+01 0.00E+00 0.00E+00	
PER PER PENF PENF SM RSF NRS FW	E T T T T T T T T T T T T T	Renewa Renewa resource: Total use er Non renew ma Total use o er Use of Use of no	Parame Parame ble prima energy ca vable prime s as mater e of renew ergy reso vable prime energy ca vable prime energy ca vable prime energy reso s escondar energy reso en renewable set en renewable set en renewable set fuels of net fres	rrier any energy a rrier any energy rial utilizati able prima nurces any energy rier any energy rier any energy reier any energy ener	as / / ion ary y as y as mary uels dary	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	A1-3 1.81E+0* 0.00E+00 1.81E+0* 2.49E+02 0.00E+00 2.49E+01 0.00E+00 1.15E-01 WS AN	A4 1	2.52E	5	B222E-0269E-01 .00E+00 .00E+00 .00E+00	B6 - 3.82E+02 - 4.94E+03 0.00E+00 0.00E+00 1.74E+00	1.56E-01 3.97E+00 0.00E+00 0.00E+00	5.97E	E-03 E-02 E+00 E+00	2.51E-02 - - 3.76E-01 0.00E+00 0.00E+00		
PER PER PENF PENF SM RSF NRS FW	E T T T T T T T T T T T T T	Renewa Renewa Renewa resource: Total use er Non renew Total use of er Use of Use of ren Use of no Use OF TH e of Seo	Parame Parame ble prima energy ca vable prime s as mater e of renew ergy reso vable prime energy ca vable prime energy ca vable prime energy reso s escondar energy reso en renewable set en renewable set en renewable set fuels of net fres	ter ry energy a rrier rary energy rial utilizati able prima surces sary energy rrier razation ewable prim surces ry material econdary fr ole second sh water M = OU M62	/ rion ary y as y as y as y as I well a lary III well a lary I	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	A1-3 1.81E+0* 0.00E+00 1.81E+0* 2.49E+02 0.00E+00 2.49E+01 0.00E+00 1.15E-01 WS AN	A4 1	2.52E	6-02 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B222E-0269E-01 .00E+00 .00E+00 .00E+00	B6 - 3.82E+02 - 4.94E+03 0.00E+00 0.00E+00 1.74E+00	1.56E-01 3.97E+00 0.00E+00 0.00E+00	5.97E	€-02 ÷+00 ÷+00 ÷+00	2.51E-02 - - 3.76E-01 0.00E+00 0.00E+00		
PER PENF PENF PENF SM RSI NRS FW RESU One p	E MM TT RRE RRT PEFF VILTS Dieceter	Renewa Renewa Renewa resource: Total use er Non renew Total use of er Use of Use of ren Use of no Use OF TH e of Seo	Parame ble primas energy ca vable primas s as mater e of renew e of renew e of server of server vable prim eaterial utili of non rene energy reso s escondar energy reso en renewable prim fuels of net fres euritro	ter y energy a rrier any energy rial utilizati able prima surces hary energy rary rerier hary energy zation swable prim surces ry material econdary fr ole second sh water n M62 er	y as y as mary uels latry	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	A1-3 1.81E+0* 0.00E+00 1.81E+0* 2.49E+02 0.00E+00 6.24E-01 0.00E+00 1.15E-01 WS AN k A1-3	A4 1	As	5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B222E-0269E-01 .00E+00 .00E+00 .00E+00 6.41E-04 CORIES B2 3E-05	B6 3.82E+02 - 4.94E+03 0.00E+00 0.00E+00 1.74E+00 S: B6 3.85E-03		5.97E 5.97E 5.97E 0 0.00E 0 0.00E 1.47E 4.53E-	E-02	2.51E-02 - 3.76E-01 0.00E+00 0.00E+00 1.96E-03		
PER PENF PENF PENF SM RSI NRS FW RESU One p	E MM T RE RM ST D N N N N N N N N N N N N	Renewa Renewa Renewa Renewa resource: Total use er Non renew Total use of er Use of Use of ren Use of no Use F Hazardou Non hazard	Parame Parame ble primare energy ca rable prim s as mater e of renewn energy reso vable prim aterial utili of non rene energy reso is secondar ewable se n renewal fuels of net fres curitro Paramete us waste dous waste dous waste	ter ry energy a rrier rary energy rial utilizati able prima surces sary energy rrier razy energy rrier razy energy rrier razy energy rrier surces ry material econdary fr ole second sh water r — OU n M62 er et dispose ste dispose ste dispose	y as y as y as y as I lead to the state of t	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	A1-3 1.81E+0* 0.00E+00 1.81E+0* 2.49E+02 0.00E+00 2.49E+02 6.24E-01 0.00E+00 1.15E-01 WS AN k A1-3 2.27E-03 .28E+00	A4 1	A:	6-02 1 1 6-02 1 1 6-04 6 6 1.6 03 3.0	B2	B6 3.82E+02 - 4.94E+03 0.00E+00 0.00E+00 1.74E+00 S: B6 3.85E-03 1.58E+00		5.97E	E-02 E-02 E-00 E-00 E-00 E-05 T	2.51E-02 3.76E-01 0.00E+00 0.00E+00 1.96E-03 C4 2.69E-05 7.47E-02		
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PER PENF PENF PENF SM RSF NRS FW Che per Parame HWE NHW RWE CRL	T T RE RM RT Silecter D N N N N N N N N N N N N N N N N N N	Renewa Renewa Renewa Renewa Renewa Renewa Renewa Renewa Renewa Roures Roures Renewa Re	Parame Parame ble prima energy ca vable prime s as mater e of renew ergy reso vable prime energy reso vable prime energy reso vable prime energy reso s excendan fuels of net fres energy reso fuel ble prime fuels of net fres fuel ble prime fuels fuel ble prime fuel ble fuel ble prime fuel ble fuel	rrier any energy a rrier any energy rial utilizati able prima nurces any energy rial utilizati able prima nurces any energy rier any energy resident any energy reside	vicion arry y as y as was mary uels tary tary tary tary tary tary tary tary	Mail	A1-3 1.81E+0* 0.00E+00 1.81E+0* 2.49E+02 0.00E+00 2.49E+02 0.00E+00 1.15E-01 WS AN K A1-3 2.27E-03 2.28E+00 3.66E-03 0.00E+00 0.00E+00	A4 1	A5 1 2.52E 1 2.52E 1 2.52E 2 3.16E 2 0.00E 3 1.6E 3 0.00E 4 2.80E 4 2.80E 4 2.80E 4 2.42E-(2.42E-(0.00E+ 6.80E-(5	B222E-0269E-01 .00E+00 .00E+00 .00E+00 .41E-04 .1E-02	B6 - 3.82E+02 - 4.94E+03 0.00E+00 0.00E+00 1.74E+00 S: B6 3.85E-03 1.58E+00 4.07E-01 0.00E+00 0.00E+00		5.97E 5.97E 5.97E 0 0.00E 0 0.00E 1.47E C3 4.53E- 4.71E- 0.00E+ 4.53E- 4.53E-	-06 2 -05 7 -06 1 +00 0	2.51E-02 - 3.76E-01 0.00E+00 0.00E+00 1.96E-03 C4 2.69E-05 7.47E-02 5.51E-05 0.00E+00		
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PER PENF PENF PENF SM RSF WRS FW RESU One p Parame HWE NHW RWE CRL	T T T T T T T T T T T T T T T T T T T	Renewa Non renew Mon renew Mon renew Mon renew Mon renew Mose of ren Use of no Use of ren Use of no Renewa	Parame Parame Parame Billion Parame Param	rrier any energy a rrier any energy rial utilizati able prima aurces any energy rial utilizati able prima aurces any energy rier any energy reir any energy re	/ ion ary y as y as y as y as y as the property of the propert	Market M	A1-3 1.81E+0* 0.00E+00 1.81E+0* 0.00E+00 2.49E+02 6.24E-01 0.00E+00 1.15E-01 WS AN A1-3 3.27E-03 3.28E+00 3.66E-03 3.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	A4 1	A5 1 2.52E 1 2.52E 1 2.52E 2 3.16E 0 0.00E 0 0.00E 1 2.80E 1 2.42E-(1.85E-(0.00E+ 6.80E-(0.00E+ 1.22E-(55 C-02 1 C-03 1 C-04 6 C-04 C-04 6 C-04 C-04	B2	B6 - 3.82E+02 - 4.94E+03 0.00E+00 0.00E+00 1.74E+00 S: B6 3.85E-03 1.58E+00 4.07E-01 0.00E+00 0.00E+00	C2 1.56E-01 - 3.97E+00 0.00E+00 0.00E+00 1.10E-04 C2 9.04E-06 4.99E-04 5.19E-06 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	C3 5.97E 5.97E 0.00E 0.00E 1.47E C3 4.53E-1.05E-4.71E-0.00E-4 0.00E-1.00E-1.00E-1	-06 2 -05 7 -06 1 +00 0 +00 0	2.51E-02 3.76E-01 0.00E+00 0.00E+00 1.96E-03 C4 2.69E-05 7.47E-02 3.51E-05 0.00E+00 0.00E+00 0.00E+00 0.00E+00		





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