ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	Abloy Oy
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASA-20180008-IBA1-EN
Issue date	10.01.2018
Valid to	09.01.2023

Mortise lock EL570

ABLOY Oy

Institut Bauen und Umwelt e.V.

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

1. General Information

Abloy Oy

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

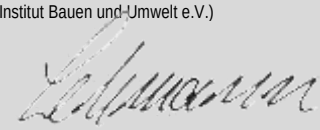
Declaration number
EPD-ASA-20180008-IBA1-EN

This Declaration is based on the Product Category Rules - PCR:
Building Hardware products, 02.2016
(PCR tested and approved by the SVR)

Issue date
10.01.2018

Valid to
09.01.2023

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



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

Mortise lock EL570

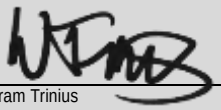
Owner of the Declaration
Abloy Oy
Wahlforssinkatu 20,
80100 Joensuu, Finland

Declared product / Declared unit
The declaration represents 1 mortise lock EL570 of the following type: handle controlled high security electric lock. It includes the following components of the lock: lock case, strike plate and accessories.

Scope:
This declaration and the corresponding LCA study are relevant to one mortise lock EL570.
The primary manufacturing processes are performed by Abloy Oy and the final manufacturing processes and assembly for the lock components occur at the manufacturing factory in Joensuu.
The owner of the declaration shall be liable for the underlying information and evidence; 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 according to ISO 14025
☐ internally ☒ externally



Dr. Wolfram Trinius
(Independent verifier appointed by SVR)

2. Product

2.1 Product description

The mortise lock EL570, is an ANSI standard electric mortise lock.
Outside handle is engaged electrically, e.g. by access control. By pressing engaged handle, dead bolt is retracted and double action latch released.
Inside handle opens lock mechanically (exit function), there is no need for electrical control.
When door closes, dead bolt is thrown out automatically, double action latch is blocked and the lock case is secured in two points.

The mortise lock EL570 is

- ANSI 156.13 Grade 1 tested
- UL1034 and UL10C listed

For the use and application of the product the respective national provisions at the place of use apply, in Germany for example the Building Codes and the corresponding national specifications.

2.2 Application

The lock is designed for single or double leaf doors with mullions. The lock is typically installed in commercial buildings, such as:

- Office buildings
- Stations
- Shopping malls
- Data centres
- Hospitals
- Warehouses
- Locations where high security in access controlled doors is needed.

2.3 Technical Data

Item	Value
Backset	70 mm
Latchbolt	19 mm
Dead bolt	25.4 mm
Fronts	31.5 mm with separate cover plate, satin chrome finish
Handing	Non-handed
Power consumption (on)	2.92 W

Power consumption (stand-by)	0 W
Power consumption (idle)	0 W
Power consumption (off)	0 W

2.4 Delivery status
The product is delivered as a lock case with strike plate, fasteners, drilling template and installation manual in a box size 210 x 150 x 34 mm.

2.5 Base materials / Ancillary materials
The composition of the mortise lock EL570 in percentage (%) of total mass per unit is, as follows:

Component	Percentage in mass (%)
Steel	72.14
Stainless steel	25.45
Plastics	1.07
Electronics	0.76
Other	0.58
Total	**100.0**

2.6 Manufacture
Product is assembled and main steel parts manufactured at Abloy Oy Joensuu factory in Finland. Main stainless-steel parts and electronics are provided by Tier-1 suppliers inChina. The components come from processes like stamping, machining and metal injection moulding. Some of the components are surface treated with different coatings like zinc, while some are stainless steel.

The factories of Abloy Oy have a Quality Management System certified according to ISO 9001:2015.

2.7 Environment and health during manufacturing
Abloy Oy 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.
Routinely monitors the environmental operations, GHG, energy, water, waste, VOC, surface treatment and H&S. Conducts periodic inspections, audits, and reviews to ensure that applicable standards are met and to evaluate the effectiveness of the Environmental Management program. Abloy Oy follows the waste hierarchy:

- Prevention
- Minimization
- Reuse
- Recycle
- Energy recovery
- Disposal

Code of Conduct covers human rights, labour practices and decent work. Personnel are aware of their environmental roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance. The production site meets OHSAS 18001 and ISO 14001 standards. Employee safety is assured by implementing dust and ventilation extract systems for applicable processes.

2.8 Product processing/Installation
EL570 mortise locks are distributed through, and installed by trained technicians, such as locksmiths or security technicians. Preparation of doors and frames are conducted at the door manufacturer's production site.

2.9 Packaging
EL570 mortise locks are packed in cardboard packaging. Packaging includes paper instructions, polyethylene bag and small metal installation tools – all of which are recyclable.

Material	Percentage in mass (%)
Paper	78.31
Plastics	20.08
Steel	1.61
Total	**100.0**

2.10 Condition of use
Annual maintenance is recommended to maintain low friction and secure latching, by greasing the contact surfaces of the double action bolt. The lock can be replaced or upgraded without changing the installation cable.

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

2.12 Reference service life
The reference service life of 10 years is based on a typical installation of a mortise lock EL570. The lock is tested to 1,000,000 cycles in accordance with ANSI 156.13.

2.13 Extraordinary effects
Fire
Mortise lock EL570 is suitable for use in fire and smoke protection doors, UL listed.

Water
Contains no substances that have a negative impact on water in case of flooding. Electric components and functionality may be jeopardized in the event of flooding.

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

2.14 Re-use stage
The product can be re-used during the reference service life and it can be moved from one application to another. The product can be mechanically dissembled to separate the different materials. The majority, by weight, of components are steel and stainless steel which can be recycled. The plastic components can be used for energy recovery in an incineration process. The lock can be sent to a professional recycling service provider

2.15 Disposal
. No disposal is foreseen for the product nor for the corresponding packaging.

2.16 Further information

Abloy Oy
Wahlforssinkatu 20,
80100 Joensuu, Finland
www.abloy.com

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of mortise lock EL570 of the following type: handle controlled high security electric lock. It includes the following components of the lock: lock case, strike plate and accessories.

Declared unit

Name	Value	Unit
Declared unit	1.307	1 piece of mortise lock EL570 in kg
Conversion factor to 1 kg	0.765	-

3.2 System boundary

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

Production stage:

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

Construction stage:

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

The use stage:

- B6 – Operational energy use

End-of-life stage:

- C2 – Transport to waste processing
- C3 – Waste processing
- 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 and loads

3.3 Estimates and assumptions

Transportation: Data on mode of transport and distances, as reported by suppliers were used for those materials and parts contributing more than 2% of total product mass.A transport distance of 6600 km by air, 725 km by truck and 50 km by ship was assumed from the production facility in China to assembly factory in Finland.

Use stage: For the use stage, it is assumed that the lock is used in the European Union, thus a European electricity grid mix is considered within this stage. According to the most representative scenario, the operating hours of the product are accounted as 101 hours on the on mode per year; the power consumption throughout the whole life-cycle is 2.96 kWh

EoL: In the End-of-Life stage, for all the materials, which can be recycled, a recycling scenario with 95% 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 modelling of the considered products, the GaBi 6 Software System for Life Cycle Engineering, developed by thinkstep 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/.
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 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 2015/16 (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 cardboard and paper

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

A comparison or an evaluation of EPD data is only possible if all the datasets to be compared were created according to /EN 15804/ and the building context, respectively the product-specific characteristics of performance, are considered.

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).

Transport to the building site (A4)

Name	Value	Unit
Truck transport		
Litres of fuel diesel with maximum load (27t payload)	39.4	l/100km
Transport distance truck	725	km
Capacity utilization (incl. empty runs) of truck	85	%
Plane transport		
Max payload	113	t
Transport distance plane	6600	km
Litres of fuel per 100 km	5830	l
Ship transport		
Max payload	27500	t
Transport distance ship	50	km
Litres of fuel per 100 km	5295	km

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment (Paper packaging)	0.078	kg
Output substances following waste treatment (Plastics packaging)	0.020	kg
Output substances following waste treatment (Steel packaging)	0.002	kg

Operational energy use (B6)

Name	Value	Unit
Electricity consumption*	2.96	kWh
Days per year in use (for 10 years)	365	d
Hours per day in on mode	0.28	h
Hours per day in off mode	23.72	h
Power consumption on mode	2.92	W
Power consumption off mode	0	W

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

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

Where:

- W_active_mode - Energy consumption in active mode in W
- h_active_mode - Operation time in active mode inhours
- W_idle_mode - Energy consumption in idle mode in W
- h_idle_mode - Operation time in idle mode in hours
- W_stand_by_mode - Energy consumption in stand-bymode in W
- h_stand_by_mode - Operation time in stand-by mode in hours
- Life_span - Reference service life of product
- days_year - Operation days per year

Reference service life

Name	Value	Unit
Reference service life	10	a

End of life (C2-C4)

Name	Value	Unit
Collected separately Steel, Stainless Steel, Paper, Aluminium, Electronics, Plastics	1.30	kg
Recycling Steel	0.896	kg
Recycling Stainless Steel	0.316	kg
Recycling Aluminium	0.0003	kg
Recovery Electronics	0.009	kg
Incineration Plastics	0.013	kg
Landfilling (5% of the product + others)	0.072	kg

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

Name	Value	Unit
Collected separately waste type (including packaging)	1.33	kg
Recycling Steel	67.35	%
Recycling Stainless Steel	23.78	%
Recycling Aluminium	0.02	%
Recovery Electronics	0.71	%
Incineration Plastics	1	%
Recycling of steel packaging (from A5)	0.14	%
Incineration of paper packaging (from A5)	5.57	%
Incineration of plastics packaging (from A5)	1.43	%

5. LCA: Results

Results shown below were calculated using CML 2000 – Apr. 2013 Methodology.

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

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							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 use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
X	X	X	X	X	MND	MND	MND	MND	MND	X	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 mortise lock EL570

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	7.40E+00	4.95E+00	1.10E-01	1.41E+00	3.11E-02	2.39E-03	9.03E-02	-3.46E+00
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	3.55E-10	3.18E-12	5.05E-13	9.62E-10	1.49E-13	1.64E-12	2.71E-13	-1.52E-10
AP	Acidification potential of land and water	[kg SO_2-Eq.]	4.36E-02	1.53E-02	2.52E-05	6.63E-03	1.42E-04	1.13E-05	2.43E-05	-2.27E-02
EP	Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	3.52E-03	2.99E-03	4.40E-06	3.73E-04	3.25E-05	6.35E-07	2.28E-06	-1.42E-03
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	3.32E-03	1.33E-03	1.79E-06	3.94E-04	-4.59E-05	6.70E-07	1.25E-06	-1.79E-03
ADPE	Abiotic depletion potential for non-fossil resources	[kg Sb Eq.]	7.74E-04	1.68E-07	1.99E-09	1.95E-07	1.17E-09	3.31E-10	7.36E-09	-5.10E-04
ADPF	Abiotic depletion potential for fossil resources	[MJ]	8.89E+01	6.88E+01	3.09E-02	1.60E+01	4.29E-01	2.71E-02	4.03E-02	-3.74E+01

RESULTS OF THE LCA - RESOURCE USE: 1 mortise lock EL570

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	7.70E+00	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	7.70E+00	1.48E-01	2.89E-03	4.57E+00	1.69E-02	7.77E-03	3.24E-03	-9.22E-01
PENRE	Non-renewable primary energy as energy carrier	[MJ]	9.47E+01	-	-	-	-	-	-	-
PENRM	Non-renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non-renewable primary energy resources	[MJ]	9.47E+01	6.90E+01	3.63E-02	2.50E+01	4.30E-01	4.25E-02	4.52E-02	-3.76E+01
SM	Use of secondary material	[kg]	3.59E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of non-renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of net fresh water	[m³]	3.15E-02	5.52E-04	3.21E-04	1.13E-02	1.19E-05	1.92E-05	2.36E-04	-8.22E-03

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 mortise lock EL570

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	2.90E-03	1.37E-04	2.49E-06	3.47E-03	9.80E-07	5.89E-06	3.73E-06	1.21E-03
NHWD	Non-hazardous waste disposed	[kg]	6.56E-01	3.60E-04	2.78E-03	8.08E-03	5.41E-05	1.37E-05	9.12E-03	-3.32E-01
RWD	Radioactive waste disposed	[kg]	2.33E-03	6.44E-05	2.12E-06	3.60E-03	5.63E-07	6.13E-06	1.94E-06	-1.20E-04
CRU	Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	Materials for recycling	[kg]	0.00E+00	0.00E+00	7.80E-02	0.00E+00	0.00E+00	1.28E+00	0.00E+00	0.00E+00
MER	Materials for energy recovery	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	Exported electrical energy	[MJ]	0.00E+00	0.00E+00	1.40E-01	0.00E+00	0.00E+00	0.00E+00	1.62E-01	0.00E+00
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	3.94E-01	0.00E+00	0.00E+00	0.00E+00	4.44E-01	0.00E+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 stage (modules A1-A3) contributes between 51% and 100% to the overall results for all the environmental impact assessment categories hereby considered, except for the depletion potential of the stratospheric ozone layer (ODP), for which the contribution from the production stage accounts for approx. 27%.

Stainless steel and steel account in total with approx. 97 % 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.

The transport from the gate to the site stage (module A4) contributes between 23% and 43% to the overall results except for ODP and ADPE. This is due to the long flight distance that the product has to make before it reaches the end user.

To reflect the use stage (module B6), the energy consumption was included and it has a contribution for all the impact assessment categories considered - between 5% and 73 %, with the exception of ADPE (0%). This is a result of 0.2 hours of operation in on mode per day and per 365 days in a year.

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

7. Requisite evidence

Not applicable in this EPD.

8. References

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

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 14025:2011-10
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

ISO 14001:2015
Environmental management systems - Requirements with guidance for use (ISO 14001:2004 + Cor. 1:2009)

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

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

OHSAS 18001:2007
Occupational Health and Safety Assessment Series

ANSI/BHMA A156.13-2012
Mortise locks & latches

UL1034
Standard for Safety for Burglary-Resistant Electric Locking Mechanisms

UL 10C
Positive Pressure of Fire Tests of Door Assemblies

9. Annex

Results shown below were calculated using TRACI Methodology.

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

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							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 use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling- potential
A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
X	X	X	X	X	MND	MND	MND	MND	MND	X	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 mortise lock EL570

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	7.40E+00	4.95E+00	1.10E-01	1.41E+00	3.11E-02	2.39E-03	9.03E-02	-3.46E+00
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	3.78E-10	3.38E-12	5.37E-13	1.02E-09	1.58E-13	1.74E-12	2.88E-13	-1.63E-10
AP	Acidification potential of land and water	[kg SO_2-Eq.]	4.35E-02	1.91E-02	3.05E-05	6.27E-03	1.86E-04	1.07E-05	2.88E-05	-2.20E-02
EP	Eutrophication potential	[kg N-eq.]	2.22E-03	1.03E-03	1.76E-06	2.67E-04	1.31E-05	4.54E-07	1.06E-06	-7.61E-04
Smog	Ground-level smog formation potential	[kg O_3-eq.]	5.96E-01	5.54E-01	7.12E-04	5.68E-02	3.83E-03	9.66E-05	3.10E-04	-2.58E-01
Resources	Resources – resources fossil	[MJ]	5.70E+00	9.89E+00	3.63E-03	1.14E+00	6.17E-02	1.93E-03	4.12E-03	-1.37E+00

RESULTS OF THE LCA - RESOURCE USE: 1 mortise lock EL570

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	7.70E+00	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	7.70E+00	1.48E-01	2.89E-03	4.57E+00	1.69E-02	7.77E-03	3.24E-03	-9.22E-01
PENRE	Non-renewable primary energy as energy carrier	[MJ]	9.47E+01	-	-	-	-	-	-	-
PENRM	Non-renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non-renewable primary energy resources	[MJ]	9.47E+01	6.90E+01	3.63E-02	2.50E+01	4.30E-01	4.25E-02	5E-02	-3.76E+01
SM	Use of secondary material	[kg]	3.59E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of non-renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of net fresh water	[m^3]	3.15E-02	5.52E-04	3.21E-04	1.13E-02	1.19E-05	1.92E-05	2.36E-04	-8.22E-03

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 mortise lock EL570

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	2.90E-03	1.37E-04	2.49E-06	3.47E-03	9.80E-07	5.89E-06	3.73E-06	1.21E-03
NHWD	Non-hazardous waste disposed	[kg]	6.56E-01	3.60E-04	2.78E-03	8.08E-03	5.41E-05	1.37E-05	9.12E-03	-3.32E-01
RWD	Radioactive waste disposed	[kg]	2.33E-03	6.44E-05	2.12E-06	3.60E-03	5.63E-07	6.13E-06	1.94E-06	-1.20E-04
CRU	Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
MFR	Materials for recycling	[kg]	0.00E+00	0.00E+00	7.80E-02	0.00E+00	0.00E+00	1.28E+00	0.00E+00	-
MER	Materials for energy recovery	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
EEE	Exported electrical energy	[MJ]	0.00E+00	0.00E+00	1.40E-01	0.00E+00	0.00E+00	0.00E+00	1.62E-01	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	3.94E-01	0.00E+00	0.00E+00	0.00E+00	4.44E-01	-

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