ENVIRONMENTAL PRODUCT DECLARATION

HES

1006 SERIES ELECTRIC STRIKE



The 1006 series is the strongest and most versatile electric strike available. The dual interlocking plunger design and heavy duty stainless steel construction enables it to exceed every standard developed for electric strikes.

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 HES 1006 Series Electric Strike 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.

Institut Bauen und Umwelt e.V.

CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION UL.COM/EPD

ENVIRONMENTAL PRODUCT DECLARATION

ASSA ABLOY

ASSA ABLOY /
Hanchet Entry Systems Inc

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.

CERTIFIED
ENVIRONMENTAL PRODUCT DECLARATION

PROGRAM OPERATOR	UL Environment
DECLARATION HOLDER	ASSA ABLOY / Hanchet Entry Systems Inc
ULE DECLARATION NUMBER	4786545067.106.1
IBU DECLRATION NUMBER	EPD-ASA-20150067-IBA1-EN
DECLARED PRODUCT	HES 1006 Series Electric Strike
REFERENCE PCR	IBU PCR Part B: Locks and fittings, 07.2014

DATE OF ISSUE	April 10, 2015
PERIOD OF VALIDITY	5 years

CONTENTS OF THE DECLARATION	General information Product / Product description LCA calculation rules LCA scenarios and further technical information LCA results References
The PCR review was conducted by:	IBU – Institut Bauen und Umwelt e.V. PCR was approved by the Independent Expert Committee (SRV)
The CEN Norm EN 15804 serves as the core PCR. This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories ☐ INTERNAL ☒ EXTERNAL	 Wade Stout
This life cycle assessment was independently verified in accordance with EN 15804 and the reference PCR by:	IBU – Institut Bauen und Umwelt e.V.

Environment

1. General Information

ASSA ABLOY / Hanchet Entry Systems Inc

Programme holder

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

Declaration number

EPD-ASA-20150067-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 (SVR))

Issue date

10.04.2015

Valid to

09.04.2020

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

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

HES 1006 Series electric strike

Owner of the Declaration

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

Declared product / Declared unit

The declaration represents HES 1006 Series electric strike consisting of the following items:

- Electric Strike body with trim enhancer
- Screw pack and keeper shims
- 12-Volt and 24-Volt pigtails

Scope:

This declaration and its LCA study are relevant to the HES 1006 Series electric strike.

External suppliers make the primary manufacturing processes and the final manufacturing processes and assembly occur at our manufacturing factory in Phoenix, Arizona.

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 according to ISO 14025
☐ internally ☒ externally

Dr. Wolfram Trinius
(Independent verifier appointed by SVR)

2. Product

2.1 Product description

Product name: HES 1006 Series electric strike

Product characteristics: HES 1006 Series electric strike

The 1006 series is the strongest and most versatile electric strike available. The dual interlocking plunger design and heavy duty stainless steel construction, enables it to exceed every standard developed for electric strikes. With multiple faceplate options, the 1006 will fully accommodate every lock designed to work within an ANSI 4-7/8″ strike plate. Tested to exceed 3,000 lbs. of static strength, 350 ft-lbs. of dynamic strength and factory tested to exceed 1,000,000 cycles of operation, the 1006 is in a class of its own.

2.2 Application

HES 1006 Series electric strike are ideal for a wide range of applications – from private to commercial and public sectors both light and heavy duty usage:

- Door openings that are secured with cylindrical or mortise locksets where someone wants to add access control or traffic control
- Emergency exit doors
- Frequently used doors

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2.3 Technical Data

For the declared product, the following technical data in the delivery status must be provided with reference to the test standard.

Technical data

Parameter	Value	Unit
Static strength	3070	lbs.
Dynamic strength	350	ft-lbs.
Endurance	1,000,000	cycles
Can be purchased in fail safe or fail secure mode		
Dual voltage	12 or 24	VDC

2.4 Placing on the market / Application rules

The standards that can be applied for HES 1006 Series electric strike are:

- UL 10C fire-rated, 3 hour single door (fail secure only)
- UL 10C fire-rated, 1-1/2 hour double door (fail secure only)
- CAN4-S104 (ULC-S104) fire door conformant
- ANSI A250.13-2003 windstorm listed
- UL 1034 burglary-resistant listed and suitable for outdoor use
- ANSI/BHMA A156.31, Grade 1
- NFPA-252 fire door conformant
- ASTM-E152 fire door conformant
- MEA New York City accepted
- Florida Building Code approved
- Patents #6021038 & 6595564

2.5 Delivery status

Electric strikes are delivered as in a box size - 9.75 x 3 x 2.5 Inches

2.6 Base materials / Ancillary materials

The primary product components and/or materials must be indicated as a percentage mass to enable the user of the EPD to understand the composition of the product in delivery status.
The average composition for 1006 Series is as following:

Component	Percentage in mass (%)
Aluminum	0.05
Stainless Steel	74.35
Steel	10.15
Plastic	0.07
Electro mechanics	15.33
Other	0.05
Total	100.0

2.7 Manufacture

The primary manufacturing processes are made by Tier 1 suppliers and the final manufacturing processes occur at factories in China and Taiwan.

The electronics are produced in Singapore and the mechanics in China, Taiwan & USA. The components come from processes like stamped steel, turning, zinc and steel casting. Final assembly takes place in Phoenix, Arizona, USA.

The factory of Phoenix, Arizona 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, greenhouse gases (GHG), energy, water, waste, volatile organic compound (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. Management of ASSA ABLOY is aware of their environmental roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance.
• The factory of Phoenix, AZ, USA has certification of Environmental Management to ISO 14001:2004 and Occupational Health and Safety to OHSAS 18001:2007.
• 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

HES 1006 Series electric strike are distributed through and installed by trained installation technicians, such as locksmiths, carpenters etc. adhering to local/national standards and requirements.

2.10 Packaging

HES 1006 Series electric strike are packed in a cardboard box with corrugated carton inlays. The packaging is fully recyclable. Separate lock case package with dimensions: 9.75 x 3 x 2.5 Inches. Material composition of packaging in % of total packaging mass is as following:

Material	Value (%)
Cardboard/paper	100.0
Total	100.0

2.11 Condition of use

To maintain low friction and secure latching, annual maintenance <1g of grease on contact surfaces of latchbolt is recommended.
No cleaning. Electric strikes can be replaced or upgraded without changing control unit or installation cable.

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, 15 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
It is possible to re-use the product during the reference service life and to move it from one door to another.

The majority of components are made of steel, which can be recycled. The locks can be mechanically dissembled to separate the different materials. 90% of the materials used are recyclable. The plastic components can be used for energy recovery in an incineration plant.

2.16 Disposal
All parts of product can be recycled or used for energy recovery.

2.17 Further information
Hanchent Entry Systems Inc.
10027 S. 51st St, Ste. 102
Phoenix, AZ 85044
Tel: 1-800-626-7590
http://www.hesinnovations.com

3. LCA: Calculation rules

3.1 Declared Unit
The declaration refers to the functional unit of 1 piece of HES 1006 Series electric strike as specified in Part B requirements on the EPD for PCR Locks and fittings: (mechanical & electromechanical locks & Fittings).

Declared unit

Name	Value	Unit
Declared unit	0.75 kg	1 piece of electric strike
Conversion factor to 1 kg	1.33	-

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

A4-A5 Construction stage:

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

Use stage related to the operation of the building includes:
- B6 – Operational energy use

End-of-life stage:
- 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
Transport:
For materials and pre-products the actual means of transport and distances, provided by the suppliers, were considered

EoL:
In the End-of-Life phase a recycling scenario with 100% collection rate was assumed.

3.4 Cut-off criteria
In the assessment, all available data from the production process are considered, i.e. all raw materials used, auxiliary materials (e.g. lubricants), thermal energy consumption and electric power consumption - including material and energy flows contributing less than 1% of mass or energy (if available). In case a specific flow contributing less than 1% in mass or energy is not available, worst case assumption proxies are selected to represent the respective environmental impacts.

Impacts relating to the production of machines and facilities required during production are out of the scope of this assessment.

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

3.6 Data quality
The requirements for data quality and background data correspond to the specifications of the /IBU PCR PART A/.
PE INTERNATIONAL performed a variety of tests and checks during the entire project to ensure high quality of the completed project. This obviously includes an

extensive review of project-specific LCA models as well as the background data used.
The technological background of the collected data reflects the physical reality of the declared products. The datasets are complete and conform to the system boundaries and the criteria for the exclusion of inputs and outputs.
All relevant background datasets are taken from the

GaBi 6 software database. The last revision of the used background data has taken place not longer than 10 years ago.

3.7 Period under review

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

3.8 Allocation

Regarding incineration, the software model for the waste incineration plant (WIP) is adapted according to the material composition and heating value of the combusted material. In this EPD the following specific life cycle inventories for the WIP are considered:
• Waste incineration of plastic
• Waste incineration of paper
• Waste incineration of wood
• Waste incineration of electronic wastes
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)	0.056	kg

Reference service life

Name	Value	Unit
Reference service life	15	a

Operational energy use (B6)

Name	Value	Unit
Electricity consumption	395	kWh
Days per year in use	365	d
Hours per day in one mode	12	h
Power consumption per mode in W	6	W

End of life (C1-C4)

Name	Value	Unit
Collected separately Aluminum, steel, stainless steel, electro mechanics	0.75	kg
Collected separately plastics	0.001	kg
Recycling Aluminum, steel, stainless steel, electro mechanics	0.75	kg
Thermal treatment plastics	0.001	kg

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

Name	Value	Unit
Collected separately waste type (without packaging)	0.75	kg
Recycling Aluminum	0.05	%
Recycling Steel	10.15	%
Recycling Stainless steel	74.35	%
Recycling Electro mechanics	15.33	%
Reuse Plastic parts	0.07	%
Loss Construction waste for landfilling (no recycling potential)	0.05	%

5. LCA: Results

Results shown below were calculated using CML 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 piece of HES 1006 Series electric strike

Parameter	Unit	A1-3	A4	A5	B6	C2	C3	C4	D
Global warming potential	[kg CO_2-Eq.]	3.78E+00	4.59E-02	7.87E-02	2.65E+02	9.57E-04	1.69E-02	3.03E-03	-1.10E+00
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	1.97E-09	2.20E-13	3.60E-13	9.16E-08	4.58E-15	1.16E-11	1.74E-14	-4.15E-11
Acidification potential of land and water	[kg SO_2-Eq.]	2.75E-02	2.10E-04	1.79E-05	8.95E-01	4.38E-06	7.99E-05	5.54E-06	-1.11E-02
Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	1.73E-03	4.80E-05	3.13E-06	4.78E-02	1.00E-06	4.50E-06	7.24E-07	-4.90E-04
Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	1.67E-03	-6.78E-05	1.27E-06	5.47E-02	-1.41E-06	4.75E-06	4.94E-07	-5.72E-04
Abiotic depletion potential for non fossil resources	[kg Sb Eq.]	1.38E-03	1.73E-09	1.42E-09	3.50E-05	3.61E-11	2.34E-09	4.42E-10	-6.12E-04
Abiotic depletion potential for fossil resources	[MJ]	4.48E+01	6.34E-01	2.20E-02	3.05E+03	1.32E-02	1.92E-01	1.12E-02	-1.17E+01

RESULTS OF THE LCA - RESOURCE USE: 1 piece of HES 1006 Series electric strike

Parameter	Unit	A1-3	A4	A5	B6	C2	C3	C4	D
Renewable primary energy as energy carrier	[MJ]	5.76E+00	-	-	-	-	-	-	-
Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
Total use of renewable primary energy resources	[MJ]	5.76E+00	2.50E-02	2.06E-03	2.99E+02	5.20E-04	5.51E-02	9.54E-04	-1.12E+00
Non renewable primary energy as energy carrier	[MJ]	4.93E+01	-	-	-	-	-	-	-
Non renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
Total use of non renewable primary energy resources	[MJ]	4.93E+01	6.36E-01	2.58E-02	3.87E+03	1.32E-02	3.01E-01	1.18E-02	-1.23E+01
Use of secondary material	[kg]	4.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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
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
Use of net fresh water	[m^3]	2.72E-02	1.76E-05	2.29E-04	1.36E+00	3.67E-07	1.36E-04	-2.69E-05	-8.70E-03

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 piece of HES 1006 Series electric strike

Parameter	Unit	A1-3	A4	A5	B6	C2	C3	C4	D
Hazardous waste disposed	[kg]	2.29E-03	1.45E-06	1.78E-06	3.01E-03	3.02E-08	4.18E-05	5.56E-07	-2.49E-04
Non hazardous waste disposed	[kg]	7.74E-01	7.99E-05	1.98E-03	1.23E+00	1.67E-06	9.73E-05	5.79E-02	-3.78E-01
Radioactive waste disposed	[kg]	1.78E-03	8.32E-07	1.51E-06	3.18E-01	1.73E-08	4.34E-05	2.30E-07	-2.39E-04
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	-
Materials for recycling	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.89E-01	0.00E+00	-
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	-
Exported electrical energy	[MJ]	0.00E+00	0.00E+00	9.95E-02	0.00E+00	0.00E+00	0.00E+00	4.30E-03	-
Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.81E-01	0.00E+00	0.00E+00	0.00E+00	1.18E-02	-

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 3% and 22% to the overall results for all the environmental impact assessment categories hereby considered, except for the abiotic depletion potential (ADPE). For this, 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. 90%, mainly due to the energy consumption on this process. Stainless steel accounts with app. 74% 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 73% and 97%, with the exception of ADPE (1%). This is a result of 12 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., Königswinter (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
DIN EN 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

DIN EN 1154
DIN EN 1154: Building hardware - Controlled door closing devices - Requirements and test methods (includes amendment A1:2002)

OHSAS 18001
OHSAS 18001: 2007**:** Occupational Health and Safety Management Systems—Requirements

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

DIN EN1634-1
Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Part 1: Fire resistance test for door and shutter assemblies and openable windows; German version EN 1634-1:2014

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 piece of HES 1006 Series electric strike

Parameter	Parameter	Unit	A1-3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	3.78E+00	4.59E-02	7.87E-02	2.65E+02	9.57E-04	1.69E-02	3.03E-03	-1.10E+00
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.01E-09	2.34E-13	3.83E-13	9.75E-08	4.87E-15	1.23E-11	1.85E-14	-4.41E-11
AP	Acidification potential of land and water	[kg SO_2-Eq.]	2.68E-02	2.75E-04	2.17E-05	8.36E-01	5.72E-06	7.56E-05	6.13E-06	-1.03E-02
EP	Eutrophication potential	[kg N-eq.]	1.03E-03	1.94E-05	1.25E-06	4.11E-02	4.04E-07	3.22E-06	4.96E-07	-2.37E-04
Smog	Ground-level smog formation potential	[kg O_3-eq.]	2.89E-01	5.65E-03	5.07E-04	7.12E+00	1.18E-04	6.85E-04	1.14E-04	-8.61E-02
Resources	Resources – fossil resources	[MJ]	2.97E+00	9.11E-02	2.59E-03	1.80E+02	1.90E-03	1.37E-02	1.40E-03	-7.90E-01

RESULTS OF THE LCA - RESOURCE USE: 1 piece of HES 1006 Series electric strike

Parameter	Parameter	Unit	A1-3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	5.76E+00	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	5.76E+00	2.50E-02	2.06E-03	2.99E+02	5.20E-04	5.51E-02	9.54E-04	-1.12E+00
PENRE	Non renewable primary energy as energy carrier	[MJ]	4.93E+01	-	-	-	-	-	-	-
PENRM	Non renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non renewable primary energy resources	[MJ]	4.93E+01	6.36E-01	2.58E-02	3.87E+03	1.32E-02	3.01E-01	1.18E-02	-1.23E+01
SM	Use of secondary material	[kg]	4.10E-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]	2.72E-02	1.76E-05	2.29E-04	1.36E+00	3.67E-07	1.36E-04	-2.69E-05	-8.70E-03

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 piece of HES 1006 Series electric strike

Parameter	Parameter	Unit	A1-3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	2.29E-03	1.45E-06	1.78E-06	3.01E-03	3.02E-08	4.18E-05	5.56E-07	-2.49E-04
NHWD	Non hazardous waste disposed	[kg]	7.74E-01	7.99E-05	1.98E-03	1.23E+00	1.67E-06	9.73E-05	5.79E-02	-3.78E-01
RWD	Radioactive waste disposed	[kg]	1.78E-03	8.32E-07	1.51E-06	3.18E-01	1.73E-08	4.34E-05	2.30E-07	-2.39E-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	0.00E+00	0.00E+00	0.00E+00	6.89E-01	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	9.95E-02	0.00E+00	0.00E+00	0.00E+00	4.30E-03	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.81E-01	0.00E+00	0.00E+00	0.00E+00	1.18E-02	-

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