ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

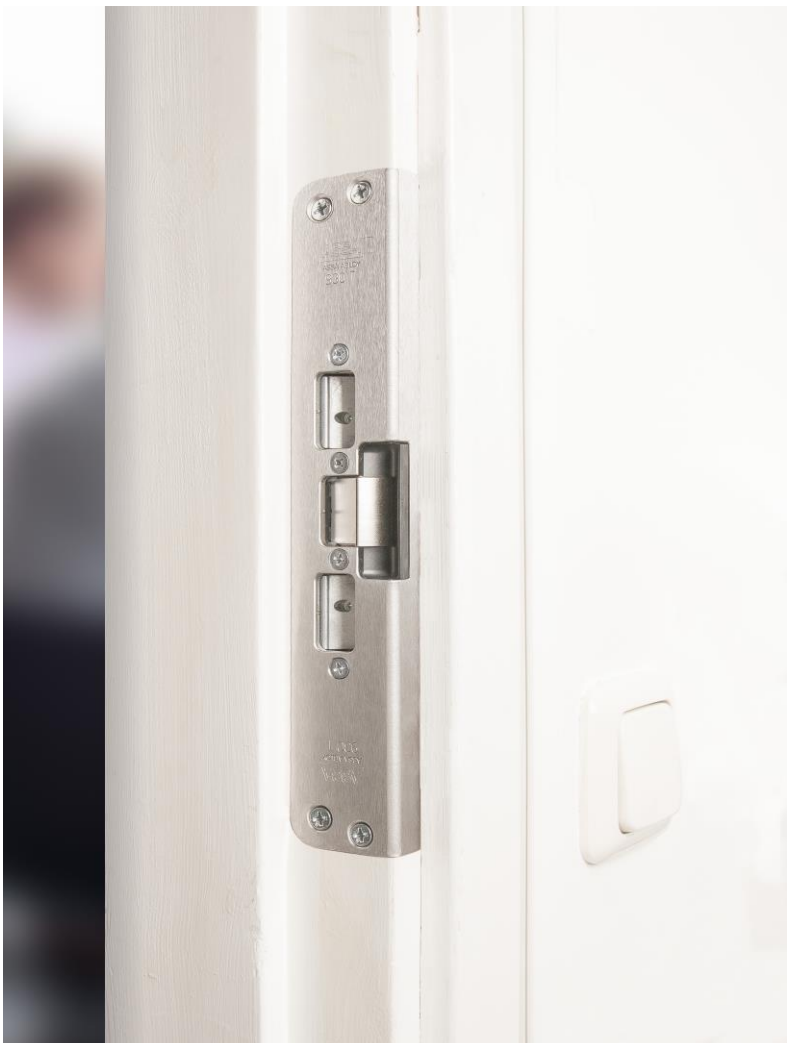
Owner of the Declaration	ASSA AB
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASA-201600249-IBA1-EN
Issue date	07.03.2017
Valid to	06.03.2022

Electric Strike 960

ASSA AB

Institut Bauen und Umwelt e.V.

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



1. General Information

ASSA AB

Programme holder

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

Declaration number

EPD-ASA-201600249-IBA1-EN

This Declaration is based on the Product Category Rules - PCR:

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

Issue date

07.03.2017

Valid to

06.03.2022

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

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

960 Series Electric Strike

Owner of the Declaration

ASSA AB
Kungsgatan 71
63105 Eskilstuna, Sweden

Declared product / Declared unit

The declaration represents 1 electric strike – 960 series.

Scope:

This declaration and its LCA study are relevant to the 960 series electric strike.

The primary manufacturing processes and the secondary manufacturing processes and assembly occur at the manufacturing factory in Albstadt, Germany. 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: 960 Series Electric Strike
Product characteristic: Electric Strike

The 960 electric strike is designed for security door, heavy duty and fire door application and to accommodate mainly Scandinavian mortise type locks. All major components are completely encased within its 140mm x 34,5mm x 25,5mm steel housing. The monitoring contact is installed in the housing. Multi-Voltage, high preload capability and high strength make this electric strike versatile. The operation mode is fail secure. The multi voltage range is 12-24 V AC/DC.

2.2 Application

960 Series electric strikes are ideal for a wide range of applications – mainly for commercial and public sectors:

- 960 Series suits fire rated or smoke resistant doors

2.3 Technical Data

The technical data with respect to the Declaration of Performance (see chapter 2.4) apply.
The table presents the technical properties of 960 series electric strike:

Technical data

Item	Value
Static strength	15000 Newton (testing according to factory standard)
Dynamic strength	95 Joule (factory tested according to UL 1034 standard)
Endurance	500000 cycles
Multi voltage	12 – 24 V (AC/DC)

2.4 Placing on the market / Application rules

For the placing on the market in the EU/EFTA (with the exception of Switzerland) the Regulation (EU) No. 305/2011 (/CPR/) and the Directive 2014/30/EG (/EMC/) apply. The product needs a Declaration of Performance taking into consideration /EN 14846:2008 Building hardware - Locks and latches - Electromechanically operated locks and striking plates

- Requirements and test methods/ and the CE-marking.
The CE-marking for the product takes into account the Declaration of Performance in accordance with the CPR and the proof of conformity with the harmonised norms based on the Directive 2014/30/EG:

• EN 61000-6-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8.

For the application and use the respective national provisions apply.

2.5 Delivery status
Packed in a box 270mm x 113mm x 55mm including connecting cable and installation instructions.

2.6 Base materials / Ancillary materials
The average composition for 960 Series is as following:

Component	Percentage in mass (%)
Brass	0.16
Plastics	0.33
Stainless Steel	5.53
Steel	56.94
Zinc	4.43
Electro mechanics	32.61
Total	**100.0**

2.7 Manufacture
The primary manufacturing processes and the final manufacturing processes occur at the ASSA ABLOY factory in Albstadt, Germany. The electric coil is produced in Albstadt. The components come from processes like stamped steel, plastic moulding, milling, turning and zinc casting. Final assembly takes place in Albstadt.

The factory of Albstadt has a quality management system certified according to ISO 9001:2008.

2.8 Environment and health during manufacturing
- Environmental operations, Greenhouse Gas Emissions, 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 to evaluate the effectiveness of the environmental management program.
- The factory of Albstadt has an environmental management system certified according to ISO 14001:2009 and an occupational health and safety system certified according to OHSAS 18001:2007.
- Manufacturing waste is minimised and treated appropriately to ensure minimal environmental impact.

2.9 Product processing/Installation
960 electric strikes are distributed through and installed by door manufacturers, trained installation technicians, such as locksmiths, system integrators etc. adhering to local/national standards and requirements.

2.10 Packaging
960 electric strikes are packed in a cardboard box. The packaging is fully recyclable. Material composition of packaging in % of total packaging mass is as following:

Material	Percentage in mass (%)
Cardboard/paper	100
Total	**100.0**

2.11 Condition of use
To maintain low friction and secure latching, annual maintenance <1g of grease on contact surfaces of electric strike 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 500.000 cycles under normal working conditions, 12 years depending on cycle frequency. Approved according DIN EN 14846:2008, System 1.

2.14 Extraordinary effects
Fire
The electric strike itself is not fire proof, but it is suitable for use in fire and smoke doors (EN 14846).

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

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

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

2.16 Disposal
The product can be mechanically dissembled to separate the different materials. The majority, of components is steel, iron and zinc which can be recycled. The plastic components can be used for energy recovery in an incineration plant. No disposal is foreseen for the product nor for the corresponding packaging.

2.17 Further information
ASSA AB
Kungsgatan 71
63105 Eskilstuna, Sweden
Phone: +46 1617 7000
www.assa.se

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of 960 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	0.736 kg	1 piece of electric strike
Conversion factor to 1 kg	1.36	-

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. In case of unknown transport distances for parts and materials, contributing less than 2% to the total product mass, transport by road over an average distance of 500 km was assumed.

Use phase: For the use phase, it is assumed that the electric strike is used in the European Union, thus a European electricity grid mix is considered within this phase. According to the most representative scenario, the operating hours of the product are accounted for 90 hours per year; the power consumption throughout the whole life-cycle is 4.53 kWh

EoL: In the End-of-Life stage, 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 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 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 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 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)	0.097	kg

Reference service life

Name	Value	Unit
Reference service life	12	a

Operational energy use (B6)

Name	Value	Unit
Electricity consumption*	4.53	kWh
Days per year in use (for 12 years)	300	d
Hours per day in on mode	0.3	h
Hours per day in off mode	23.7	h
Power consumption on mode	4.2	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 in hours
- 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-by mode 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
- 0.001 - Conversion factor from Wh to kWh.

End of life (C2-C4)

Name	Value	Unit
Collected separately Brass, Stainless Steel, Steel, Zinc, Electro mechanics, Plastics	0.7359	kg
Recycling Brass	0.0012	kg
Recycling Stainless Steel	0.0407	kg
Recycling Steel	0.419	kg
Recycling Zinc	0.0326	kg
Recycling Electro mechanics	0.24	kg
Reuse Plastic Parts	0.0024	kg
Reuse Paper	0.097	kg

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

Name	Value	Unit
Collected separately waste type (including packaging)	0.8329	kg
Recycling Brass	0.14	%
Recycling Stainless Steel	4.89	%
Recycling Steel	50.31	%
Recycling Zinc	3.91	%
Recycling Electro mechanics	28.81	%
Reuse Plastic Parts	0.29	%
Reuse Paper packaging (from A5)	11.65	%

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: One piece Electric Strike 960

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	4.07E+00	1.98E-02	1.37E-01	2.15E+00	1.98E-03	3.96E-02	1.86E-01	-4.35E-01
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	6.75E-10	9.48E-14	6.28E-13	1.47E-09	9.48E-15	2.71E-11	5.15E-13	-8.89E-11
AP	Acidification potential of land and water	[kg SO_2-Eq.]	2.32E-02	9.07E-05	3.13E-05	1.02E-02	9.07E-06	1.87E-04	8.76E-05	-1.80E-03
EP	Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	1.79E-03	2.07E-05	5.47E-06	5.72E-04	2.07E-06	1.05E-05	2.08E-05	-1.20E-04
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	1.62E-03	-2.92E-05	2.22E-06	6.04E-04	-2.92E-06	1.11E-05	6.60E-06	-1.51E-04
ADPE	Abiotic depletion potential for non-fossil resources	[kg Sb Eq.]	6.65E-04	7.47E-10	2.48E-09	2.98E-07	7.47E-11	5.48E-09	5.65E-08	-2.03E-04
ADPF	Abiotic depletion potential for fossil resources	[MJ]	5.25E+01	2.73E-01	3.85E-02	2.45E+01	2.73E-02	4.49E-01	1.46E-01	-5.34E+00

RESULTS OF THE LCA - RESOURCE USE: One piece Electric Strike 960

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	9.12E+00	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	9.12E+00	1.08E-02	3.59E-03	7.01E+00	1.08E-03	1.29E-01	1.96E-02	-7.96E-01
PENRE	Non-renewable primary energy as energy carrier	[MJ]	6.20E+01	-	-	-	-	-	-	-
PENRM	Non-renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non-renewable primary energy resources	[MJ]	6.20E+01	2.74E-01	4.51E-02	3.83E+01	2.74E-02	7.04E-01	1.75E-01	-6.31E+00
SM	Use of secondary material	[kg]	5.89E-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]	2.66E-02	7.60E-06	4.00E-04	1.73E-02	7.60E-07	3.18E-04	9.52E-04	-2.73E-03

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece Electric Strike 960

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	5.69E-03	6.25E-07	3.10E-06	5.31E-03	6.25E-08	9.76E-05	3.03E-05	-3.00E-04
NHWD	Non-hazardous waste disposed	[kg]	2.40E-01	3.45E-05	3.45E-03	1.24E-02	3.45E-06	2.27E-04	3.95E-02	-4.65E-03
RWD	Radioactive waste disposed	[kg]	3.80E-03	3.59E-07	2.64E-06	5.52E-03	3.59E-08	1.01E-04	1.15E-05	-3.91E-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	9.70E-02	0.00E+00	0.00E+00	4.60E-01	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	1.74E-01	0.00E+00	0.00E+00	0.00E+00	1.15E-02	0.00E+00
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	4.90E-01	0.00E+00	0.00E+00	0.00E+00	3.15E-02	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 31% and 100% to the overall results for all the environmental impact assessment categories hereby considered. Steel accounts in total with a majority of 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 stage (module B6), the energy consumption was included and it has a major contribution for all the impact assessment categories considered - between 23% and 32%, with the exception of ODP (67%). In calculating the ozone depletion potential, the anthropogenic released halogenated hydrocarbons, which can destroy many ozone molecules, are recorded first, therefore, as expected; the impact is higher during the use stage of the product (B6). This is a result of 0.3 hours in on mode per day and per 300 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
ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

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

ISO 9001:2008
Quality management systems - Requirements

EN 15804
EN 15804: 2012+A1:2014: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

EN 14846:2008
Building hardware - Locks and latches - Electromechanically operated locks and striking plates - Requirements and test methods

EN 61000-6-2
Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments (IEC 61000-6-2:2005)

EN 61000-4-2
Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test (IEC 61000-4-2:2008)

EN 61000-4-3
Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3:2006 + A1:2007 + A2:2010)

EN 61000-4-4
Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test (IEC 61000-4-4:2012)

EN 61000-4-5
Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test (IEC 61000-4-5:2014)

EN 61000-4-6
Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields (IEC 61000-4-6:2013)

EN 61000-4-8
Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test (IEC 61000-4-8:2009)

OHSAS 18001:2007
Occupational Health and Safety Assessment Series

CPR
REGULATION (EU) No 305/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC

EMC
DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility

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/

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: One piece Electric Strike 960

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	4.07E+00	1.98E-02	1.37E-01	2.15E+00	1.98E-03	3.96E-02	1.86E-01	-4.35E-01
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	7.22E-10	1.01E-13	6.68E-13	1.57E-09	1.01E-14	2.88E-11	5.47E-13	-9.46E-11
AP	Acidification potential of land and water	[kg SO_2-Eq.]	2.27E-02	1.18E-04	3.79E-05	9.62E-03	1.18E-05	1.77E-04	1.12E-04	-1.75E-03
EP	Eutrophication potential	[kg N-eq.]	1.43E-03	8.37E-06	2.19E-06	4.09E-04	8.37E-07	7.52E-06	9.15E-06	-7.19E-05
Smog	Ground-level smog formation potential	[kg O_3-eq.]	2.63E-01	2.44E-03	8.86E-04	8.71E-02	2.44E-04	1.60E-03	3.56E-03	-2.03E-02
Resources	Resources – resources fossil	[MJ]	4.51E+00	3.93E-02	4.52E-03	1.74E+00	3.93E-03	3.20E-02	1.41E-02	-4.44E-01

RESULTS OF THE LCA - RESOURCE USE: One piece Electric Strike 960

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	9.12E+00	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	9.12E+00	1.08E-02	3.59E-03	7.01E+00	1.08E-03	1.29E-01	1.96E-02	-7.96E-01
PENRE	Non-renewable primary energy as energy carrier	[MJ]	6.20E+01	-	-	-	-	-	-	-
PENRM	Non-renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non-renewable primary energy resources	[MJ]	6.20E+01	2.74E-01	4.51E-02	3.83E+01	2.74E-02	7.04E-01	2E-01	-6.31E+00
SM	Use of secondary material	[kg]	5.89E-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]	2.66E-02	7.60E-06	4.00E-04	1.73E-02	7.60E-07	3.18E-04	9.52E-04	-2.73E-03

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece Electric Strike 960

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	5.69E-03	6.25E-07	3.10E-06	5.31E-03	6.25E-08	9.76E-05	3.03E-05	-3.00E-04
NHWD	Non-hazardous waste disposed	[kg]	2.40E-01	3.45E-05	3.45E-03	1.24E-02	3.45E-06	2.27E-04	3.95E-02	-4.65E-03
RWD	Radioactive waste disposed	[kg]	3.80E-03	3.59E-07	2.64E-06	5.52E-03	3.59E-08	1.01E-04	1.15E-05	-3.91E-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	9.70E-02	0.00E+00	0.00E+00	4.60E-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	1.74E-01	0.00E+00	0.00E+00	0.00E+00	1.15E-02	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	4.90E-01	0.00E+00	0.00E+00	0.00E+00	3.15E-02	-

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