

# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	<b>ASSA ABLOY Sicherheitstechnik GmbH</b>
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASA-20150096-IBA1-EN
Issue date	30.04.2015
Valid to	29.04.2020

**Electric Strike – 351M Series**

**ASSA ABLOY Sicherheitstechnik GmbH**

[www.bau-umwelt.com](http://www.bau-umwelt.com) / <https://epd-online.com>



## 1. General Information

### ASSA ABLOY Sicherheitstechnik GmbH

#### Programme holder

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

#### Declaration number

EPD-ASA-20150096-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 (SVA))

#### Issue date

30.04.2015

#### Valid to

29.04.2020



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



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

### Electric Strike – 351M Series

#### Owner of the Declaration

ASSA ABLOY Sicherheitstechnik GmbH  
Bildstockstrasse 20  
72458 Albstadt, Germany

#### Declared product / Declared unit

The declaration represents 1 electric strike – 351M Series consisting of the following items:  
- 351M.80-----N91

#### Scope:

This declaration and its LCA study are relevant to the 351M Series electric strike.

The primary manufacturing processes are done by external suppliers. 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 SVA)

## 2. Product

### 2.1 Product description

Product name: Electric Strike - 351M Series

Product characteristic: Electric Strike

The 351M Series is an electric strike, designed for double and single acting swing doors. All major components are completely encased within its 135mm x 24.3mm x 39mm steel housing. Product is equipped with faceplate 200 mm x 25 mm x 3 mm and spare strike plate 150 mm x 25 mm x 3 mm. The operation mode is fail safe. Suitable for concealed mounting in door leaf or door frame. Can be mounted vertically or horizontally. The voltage range is 12-48 V DC.

### 2.2 Application

351M Series electric strikes are ideal for a wide range of applications – mainly for commercial and public sectors:

- For single and double acting swing doors used as main locking or auxiliary locking element.

Depending on national standards it may be used for fire rated or smoke resistant doors as well.

### 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	5,000	Newton
Endurance	500,000	Cycles
Multi voltage	12 - 48	V DC

Note: tested according factory standard

### 2.4 Placing on the market / Application rules

The standards that can be applied for 351M Series electric strikes are:

- NFS 61937

## 2.5 DIN EN 61000-6-2 Delivery status

Electric strikes are delivered as in a box size - 212 mm x 60 mm x 37 mm containing installation instructions.

## 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 351M Series is as following:

Component	Percentage in mass (%)
Brass	0.1
Steel	49.7
Stainless Steel	48.8
Plastic	0.1
Electronic	0.5
Electro mechanics	0.8
Total	100.0

## 2.7 Manufacture

The primary manufacturing processes are carried out by an external supplier in Prutting, Germany. The final manufacturing processes occur at the factory in Albstadt, Germany. The electric coil is produced in Albstadt. The components come from processes like stamped steel, plastic molding, milling, turning and zinc casting. Final assembly takes place in Albstadt.

The factory in Albstadt and our suppliers are certified in accordance with DIN EN ISO 9001:2008 Quality Management system

## 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 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 to ensure Environmental Management program effectiveness.

- 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 Albstadt has certification of Environmental Management to DIN EN ISO 14001:2009 and Occupational Health and Safety to OHSAS 18001:2007.

- Manufacturing waste is minimised and treated appropriately to ensure minimal environmental impact

## 2.9 Product processing / Installation

351M Series electric strikes are distributed through and installed by door manufacturers, trained installation technicians, such as locksmiths, carpenters etc. adhering to local/national standards and

requirements. Electric strikes can be installed by end users, but it is recommended to install using a trained professional.

## 2.10 Packaging

351M Series 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	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 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.

## 2.14 Extraordinary effects

### Fire

Depending on national standards may be suitable for use in fire and smoke doors.

### 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 product is possible to re-use during the reference service life and be moved from one door to another. The majority, of components are brass and steel, which can be recycled. The locks can be mechanically disassembled to separate the different materials. 100% of the materials used are recyclable.

## 2.16 Disposal

All parts of product can be recycled.

## 2.17 Further information

Assa Abloy Sicherheitstechnik  
Bildstockstrasse 20  
72458 Albstadt, Germany  
Tel: +49 7431 123-0  
www.assaabloy.de

### 3. LCA: Calculation rules

#### 3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of 351M Series 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	0.462 Kg	1 piece of electric strike
Conversion factor to 1 kg	2.16	-

#### 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:

- A5 – Packaging waste processing

Use stage related to the operation of the building includes:

- B6 – Operational energy use (Energy consumption for sectional door operation)

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 European Union, thus an European electricity grid mix is considered within this stage.

##### EoL:

In the End-of-Life, for all the materials which can be recycled, phase a recycling scenario with 100% collection rate was assumed.

#### 3.4 Cut-off criteria

In the assessment, all available data from 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 for:

- Waste incineration of paper from packaging
- Waste incineration of plastics
- Waste incineration of electronic waste

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)	0.09	kg

### Reference service life

Name	Value	Unit
Reference service life (200,000 cycles)	12	a

### Operational energy use (B6)

Name	Value	Unit
Electricity consumption	270.43	kWh
Days per year in use	300	d
Hours per day in on mode	12	h
Power consumption in on mode in W	5.76	W
Hours per day in stand-by mode	12	h
Power consumption in stand-by mode in W	0.5	W

### End of life (C1-C4)

Name	Value	Unit
Collected separately Brass, Copper, Steel, Stainless Steel, Plastic, Electronic, Electro mechanics	0.461	kg
Reuse plastic parts	0.001	kg
Recycling Zinc, Brass, Copper, Steel, Stainless Steel, Electro mechanics	0.460	kg

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

Name	Value	Unit
Collected separately waste type (without packaging)	0.461	kg
Recycling Brass	0.1	%
Recycling Steel	49.7	%
Recycling Stainless steel	48.9	%
Recycling Electronic	0.5	%
Recycling Electro mechanics	0.8	%
Reuse plastic parts	0.1	%

## 5. LCA: Results

Results shown below were calculated using CML2001 – Apr. 2013 Methodology. The values for operational energy use (module B6) are presented per reference service life (12 years).

### 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 BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement <sup>1)</sup>	Refurbishment <sup>1)</sup>	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	MND	X	MND	MND	MND	MND	MND	X	MND	MND	X	X	X	X

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 piece of electric strike – 351M Series

Parameter	Parameter	Unit	A1-A3	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO <sub>2</sub> -Eq.]	3.8E+00	1.3E-01	1.3E+02	1.3E-03	4.4E-04	1.7E-03	-2.0E+00
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	8.2E-10	5.9E-13	8.8E-08	6.3E-15	3.0E-13	6.6E-15	-4.4E-11
AP	Acidification potential of land and water	[kg SO <sub>2</sub> -Eq.]	2.4E-02	2.9E-05	6.1E-01	6.0E-06	2.1E-06	1.5E-06	-1.4E-02
EP	Eutrophication potential	[kg (PO <sub>4</sub> ) <sub>3</sub> - Eq.]	1.6E-03	5.1E-06	3.4E-02	1.4E-06	1.2E-07	2.4E-07	-8.3E-04
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	1.6E-03	2.1E-06	3.6E-02	-1.9E-06	1.2E-07	1.3E-07	-9.9E-04
ADPE	Abiotic depletion potential for non fossil resources	[kg Sb Eq.]	3.2E-04	2.3E-09	1.8E-05	5.0E-11	6.0E-11	3.6E-10	-2.9E-04
ADPF	Abiotic depletion potential for fossil resources	[MJ]	4.3E+01	3.6E-02	1.5E+03	1.8E-02	4.9E-03	2.9E-03	-2.2E+01

### RESULTS OF THE LCA - RESOURCE USE: 1 piece of electric strike – 351M Series

Parameter	Parameter	Unit	A1-A3	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	6.4E+00	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.0E+00	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	6.4E+00	3.4E-03	4.2E+02	7.1E-04	1.4E-03	2.8E-04	-6.6E-01
PENRE	Non renewable primary energy as energy carrier	[MJ]	5.0E+01	-	-	-	-	-	-
PENRM	Non renewable primary energy as material utilization	[MJ]	0.0E+00	-	-	-	-	-	-
PENRT	Total use of non renewable primary energy resources	[MJ]	5.0E+01	4.2E-02	2.3E+03	1.8E-02	7.8E-03	3.2E-03	-2.3E+01
SM	Use of secondary material	[kg]	8.7E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
RSF	Use of renewable secondary fuels	[MJ]	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NRSF	Use of non renewable secondary fuels	[MJ]	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
FW	Use of net fresh water	[m <sup>3</sup> ]	1.8E-02	3.7E-04	1.0E+00	5.0E-07	3.5E-06	-1.7E-07	-5.6E-03

### RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 piece of electric strike – 351M Series

Parameter	Parameter	Unit	A1-A3	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	3.1E-03	2.9E-06	3.2E-01	4.1E-08	1.1E-06	2.5E-07	-6.2E-05
NHWD	Non hazardous waste disposed	[kg]	2.9E-01	3.2E-03	7.4E-01	2.3E-06	2.5E-06	1.1E-02	-2.0E-01
RWD	Radioactive waste disposed	[kg]	2.6E-03	2.5E-06	3.3E-01	2.4E-08	1.1E-06	1.0E-07	-1.7E-04
CRU	Components for re-use	[kg]	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	-
MFR	Materials for recycling	[kg]	0.0E+00	9.1E-02	0.0E+00	0.0E+00	4.6E-01	0.0E+00	-
MER	Materials for energy recovery	[kg]	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	-
EEE	Exported electrical energy	[MJ]	0.0E+00	1.6E-01	0.0E+00	0.0E+00	0.0E+00	1.5E-03	-
EET	Exported thermal energy	[MJ]	0.0E+00	4.6E-01	0.0E+00	0.0E+00	0.0E+00	4.1E-03	-

## 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 4% 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. 95% - 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). Steel accounts with app. 50% 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 during the reference service life (12 years) was calculated and included. It has a major contribution for all the impact assessment categories considered - between 96% and 99%, with the exception of ADPE (5%). This high value is due to the 12 hours per day in on mode as stated in Chapter 4.

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](http://www.bau-umwelt.de)

### IBU PCR Part A

IBU PCR Part A: Institut Bauen und Umwelt e.V., Berlin(pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report. April 2013  
[www.bau-umwelt.de](http://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](http://www.bau-umwelt.com)

### DIN EN ISO 9001

DIN EN ISO 9001:2008: Quality management systems - Requirements; Trilingual version EN ISO 9001:2008

### DIN EN ISO 14001

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

### NFS 61937

Tested in accordance to the French NFS 61937 standard

### DIN EN 61000-6-2

DIN EN 61000-6-2: Electromagnetic compatibility (EMC) Part 6-2: Generic Standards-Immunity for industrial environments

### 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, 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/>

### OHSAS 18001

OHSAS 18001: Arbeits- und Gesundheitsschutz- Managementsysteme - Leitfaden für die Implementierung von OHSAS 18001

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## 9. Annex

Results shown below were calculated using TRACI Methodology. The values for operational energy use (module B6) are presented per reference service life (12 years).

### 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 BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement <sup>(1)</sup>	Refurbishment <sup>(1)</sup>	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	MND	X	MND	MND	MND	MND	MND	X	MND	MND	X	X	X	X

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 piece of electric strike – 351M Series

Parameter	Parameter	Unit	A1-A3	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO <sub>2</sub> -Eq.]	3.8E+00	1.3E-01	1.3E+02	1.3E-03	4.4E-04	1.7E-03	-2.0E+00
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	8.6E-10	6.2E-13	9.3E-08	6.7E-15	3.2E-13	7.0E-15	-4.9E-11
AP	Acidification potential of land and water	[kg SO <sub>2</sub> -Eq.]	2.3E-02	3.5E-05	5.7E-01	7.9E-06	1.9E-06	1.8E-06	-1.3E-02
EP	Eutrophication potential	[kg N-eq.]	1.0E-03	2.0E-06	2.4E-02	5.6E-07	8.3E-08	1.4E-07	-4.3E-04
Smog	Ground-level smog formation potential	[kg O <sub>3</sub> -eq.]	2.6E-01	8.3E-04	5.2E+00	1.6E-04	1.8E-05	3.8E-05	-1.5E-01
	Resources	[MJ]	2.7E+00	4.2E-03	1.0E+02	2.6E-03	3.5E-04	3.5E-04	-1.1E+00

### RESULTS OF THE LCA - RESOURCE USE: 1 piece of electric strike – 351M Series

Parameter	Parameter	Unit	A1-A3	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	6.4E+00	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.0E+00	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	6.4E+00	3.4E-03	4.2E+02	7.1E-04	1.4E-03	2.8E-04	-6.6E-01
PENRE	Non renewable primary energy as energy carrier	[MJ]	5.0E+01	-	-	-	-	-	-
PENRM	Non renewable primary energy as material utilization	[MJ]	0.0E+00	-	-	-	-	-	-
PENRT	Total use of non renewable primary energy resources	[MJ]	5.0E+01	4.2E-02	2.3E+03	1.8E-02	7.8E-03	3.2E-03	-2.3E+01
SM	Use of secondary material	[kg]	8.7E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
RSF	Use of renewable secondary fuels	[MJ]	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NRSF	Use of non renewable secondary fuels	[MJ]	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
FW	Use of net fresh water	[m <sup>3</sup> ]	1.8E-02	3.7E-04	1.0E+00	5.0E-07	3.5E-06	-1.7E-07	-5.6E-03

### RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 piece of electric strike – 351M Series

Parameter	Parameter	Unit	A1-A3	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	3.1E-03	2.9E-06	3.2E-01	4.1E-08	1.1E-06	2.5E-07	-6.2E-05
NHWD	Non hazardous waste disposed	[kg]	2.9E-01	3.2E-03	7.4E-01	2.3E-06	2.5E-06	1.1E-02	-2.0E-01
RWD	Radioactive waste disposed	[kg]	2.6E-03	2.5E-06	3.3E-01	2.4E-08	1.1E-06	1.0E-07	-1.7E-04
CRU	Components for re-use	[kg]	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	-
MFR	Materials for recycling	[kg]	0.0E+00	9.1E-02	0.0E+00	0.0E+00	4.6E-01	0.0E+00	-
MER	Materials for energy recovery	[kg]	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	-
EEE	Exported electrical energy	[MJ]	0.0E+00	1.6E-01	0.0E+00	0.0E+00	0.0E+00	1.5E-03	-
EET	Exported thermal energy	[MJ]	0.0E+00	4.6E-01	0.0E+00	0.0E+00	0.0E+00	4.1E-03	-