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-20150157-IBA1-EN
Issue date	10.06.2015
Valid to	09.06.2020

Electronic cylinders – dp CLIQ

ASSA AB

Institut Bauen und Umwelt e.V.

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

1. General Information

ASSA AB	dp CLIQ
Programme holder IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany	**Owner of the Declaration** Assa Abloy ASSA AB Box 371 631 05 Eskilstuna
Declaration number	**Declared product / Declared unit** The declaration represents 1 electromechanical cylinder – dp CLIQ
This Declaration is based on the Product Category Rules: Locks and fittings , 07.2014 (PCR tested and approved by the independent expert committee)	**Scope:** This declaration and its LCA study are relevant to dp CLIQ electromechanical cylinders. The primary manufacturing processes are made by external suppliers and the final manufacturing processes and assembly occur at our manufacturing factory in Eskilstuna, Sweden. 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.
Issue date	
Valid to	**Verification** The CEN Standard EN 15804 serves as the core PCR Independent verification of the declaration according to ISO 14025 ☐ internally ☒ externally
Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)	
Dr.-Ing. Burkhart Lehmannt (Managing Director IBU)	Dr. Wolfram Trinius (Independent tester appointed by SVA)

2. Product

2.1 Product description

Product name: dp CLIQ

Product characteristic:
With patented features combined with precision engineering and cross function compatibility, the dp is unrivalled in its class.
• High security.
• Resistant to picking.
• Resistant to bumping.
• Case-hardened drill-resistant inserts.
• Patented keys and cylinder mechanism.
• Double layer of security with topcode and sidecode mechanism.
• Paracentric profile for increased anti-picking protection.
• 2.8 mm thick keys made from hard-wearing nickel silver.
• 15 billion usable differs available per key profile.
• Round cylinder with extended security against attack

2.2 Application

dp CLIQ electromechanical cylinders are ideal for a wide range of applications – all from private to commercial and public sectors, for all types of doors:
- Fits in all modern Scandinavian lockcases including Evolution- Modul- and 51-series.
- For internal and external use

2.3 Technical Data

The table presents the technical properties of CLIQ electronic cylinders:

Technical data

Parameter	Value	Unit
Dimensions (W*H*D or W*H*L)	20 x35 x31	mm
Weight	0.148	Kg
Supply voltage	Max 3.6	VAC/DC
Power consumption (Stand-by)	Max 2	mA
Power consumption (Idle)	0	mA
Power consumption (Peak)	200	mA
Temperature (Operating)	-40 to +85	°C
Temperature (Storage)	0 to 50	°C

2.4 Placing on the market / Application rules

The standards that can be applied for electromechanical cylinders are:
Cylinders are rated according Scandinavian and European standard /EN 15684:2012/. The rating for dp CLIQ cylinder are:
1 – 2 – 3 – 4 – 5 – 6 – 7 – 8
1 – 6 – 0 – 4 – F – F – 3 – 2

where:
1 - Category of use: small chance to misuse
2 - Durability: number of test cycles 100.000 (highest requirements)
3 - Fire/Smoke resistance
4 - Environmental resistance
5 - Mechanical key security
6 - Electronic key security
7 - System Management
8 - Attack resistance

2.5 Delivery status

Electromechanical cylinders are delivered as separate in a box size - 120 mm x 60 mm x 50 mm.

2.6 Base materials / Ancillary materials

The average composition for dp CLIQ is as following:

Component	Percentage in mass (%)
Brass	93.29
Plastics	0.05
Stainless Steel	2.89
Steel	1.86
Others	1.91
Total	100.0

2.7 Manufacture

The primary manufacturing processes are made by Tier 1 suppliers and the final manufacturing processes occur in factory Eskilstuna, Sweden.
The components come from processes like machined brass and hardened steel. Final assembly takes place in Sweden.

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

2.8 Environment and health during manufacturing

ASSA ABLOY is committed to producing and distributing door opening solutions with minimal environmental impact, where health & safety is the primary focus for all employees and associates.
• Environmental operations, GHG, energy, water, waste, VOC, surface treatment and H&S are being routinely monitored. Inspections, audits, and reviews are conducted periodically to ensure that applicable standards are met and environmental management program effectiveness is evaluated.
• Code of Conduct covers human rights, labor practices and decent work. Management of ASSA ABLOY is aware of their environmental roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance.
• The factory in Czech Republic and Sweden has certification of Environmental Management to /ISO 14001:2004/.

2.9 Product processing/Installation

dp CLIQ cylinders are distributed through and installed by trained installation technicians, such as locksmiths, carpenters etc. adhering to local/national standards and requirements. It can also be installed by the end user.

2.10 Packaging

dp CLIQ electromechanical cylinders are packed in a cardboard box with corrugated carton inlays. The packaging is fully recyclable. Separate package with dimensions: 120 mm x 60 mm x 50 mm

Material	Value (%)
Cardboard/paper	100
Total	100

2.11 Condition of use

To maintain low friction, bi-annual maintenance <1g of oil according to the manufacturers standard, should be added inside the cylinder through the profile. Electromechanical cylinders can be replaced or upgraded.

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 installation and use of the product.

2.13 Reference service life

Approved for 100.000 cycles under normal working conditions.

2.14 Extraordinary effects

Fire
Suitable for use in fire and smoke doors (/EN 14846:2008/).

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 Disposal

The locks 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.

2.16 Further information

ASSA AB
Kungsgatan 71
Postadress: Box 371, 631 05 Eskilstuna
Telefon: 016-17 70 00
www.assa.se

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of dp CLIQ 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	1	piece of electronic cylinder
Mass (without packaging)	0,148	kg
Conversion factor to 1 kg	6,76	-

3.2 System boundary

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

Production stage:

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

Construction stage:

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

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

Use phase:
For the use phase, it is assumed that the lock is used in European Union, thus an EU electricity grid mix is considered within this stage.

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

3.4 Cut-off criteria

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

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

3.5 Background data

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

3.6 Data quality

The requirements for data quality and background data correspond to the specifications of the /IBU PCR PART A/.
PE INTERNATIONAL performed a variety of tests and 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 2012/13 (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 from packaging
Waste incineration of paper from packaging
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)	0.026	kg

Reference service life

Name	Value	Unit
Reference service life	15	a

Operational energy use (B6)

Name	Value	Unit
Electricity consumption	1.261	kWh
Days per year in use	365	d
Hours per day in different modes	24	h
Power consumption on mode	0.0144	W
Power consumption stand-by mode	0.0084	W

End of life (C1-C4)

Name	Value	Unit
Collected separately Brass, Plastic Parts, Stainless Steel, Steel	0.153	kg
Collected as mixed construction waste others	0.0029	kg
Reuse Plastic Parts	0.0001	kg
Recycling Brass	0.1432	kg
Recycling Stainless Steel	0.0044	kg
Recycling Steel	0.00286	kg
Landfilling others	0.00292	kg

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

Name	Value	Unit
Collected separately waste type (including packaging)	0.1795	kg
Recycling Brass	79.78	%
Recycling Stainless Steel	2.47	%
Recycling Steel	1.59	%
Reuse Plastic Parts	0.04	%
Reuse Paper packaging (from A5)	14.49	%
Loss Construction waste for landfilling (no recycling potential)	1.63	%

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 of CLIQ dp

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	1.02E+00	4.27E-03	3.68E-02	5.99E-01	4.27E-03	3.36E-04	4.82E-04	-2.69E-01
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.19E-10	2.04E-14	1.68E-13	4.10E-10	2.04E-14	2.30E-13	1.60E-15	-1.43E-11
AP	Acidification potential of land and water	[kg SO_2-Eq.]	6.93E-03	1.95E-05	8.39E-06	2.82E-03	1.95E-05	1.58E-06	3.09E-07	-2.67E-03
EP	Eutrophication potential	[kg $(PO_4)^{3-}$- Eq.]	5.26E-04	4.46E-06	1.47E-06	1.59E-04	4.46E-06	8.91E-08	5.34E-08	-1.73E-04
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	4.07E-04	-6.30E-06	5.96E-07	1.68E-04	-6.30E-06	9.40E-08	2.45E-08	-1.45E-04
ADPE	Abiotic depletion potential for non fossil resources	[kg Sb Eq.]	3.43E-04	1.61E-10	6.65E-10	8.29E-08	1.61E-10	4.65E-11	1.07E-10	-2.43E-04
ADPF	Abiotic depletion potential for fossil resources	[MJ]	1.30E+01	5.89E-02	1.03E-02	6.80E+00	5.89E-02	3.81E-03	5.67E-04	-2.88E+00

RESULTS OF THE LCA - RESOURCE USE: One piece of CLIQ dp

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	1.71E+00	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	1.71E+00	2.32E-03	9.62E-04	1.95E+00	2.32E-03	1.09E-03	5.88E-05	-1.23E-01
PENRE	Non-renewable primary energy as energy carrier	[MJ]	1.51E+01	-	-	-	-	-	-	-
PENRM	Non-renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non-renewable primary energy resources	[MJ]	1.51E+01	5.91E-02	1.21E-02	1.07E+01	5.91E-02	5.97E-03	6.33E-04	-3.02E+00
SM	Use of secondary material	[kg]	2.40E-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]	4.93E-03	1.64E-06	1.07E-04	4.81E-03	1.64E-06	2.69E-06	1.06E-06	-1.32E-03

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece of CLIQ dp

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	7.84E-04	1.35E-07	8.31E-07	1.48E-03	1.35E-07	8.28E-07	6.54E-08	-2.41E-05
NHWD	Non hazardous waste disposed	[kg]	4.87E-02	7.43E-06	9.25E-04	3.44E-03	7.43E-06	1.93E-06	1.58E-03	7.95E-03
RWD	Radioactive waste disposed	[kg]	8.19E-04	7.74E-08	7.07E-07	1.54E-03	7.74E-08	8.60E-07	2.59E-08	-5.51E-05
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	2.60E-02	0.00E+00	0.00E+00	1.53E-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	4.66E-02	0.00E+00	0.00E+00	0.00E+00	3.48E-04	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	1.31E-01	0.00E+00	0.00E+00	0.00E+00	9.54E-04	-

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 61% and 99% 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 phase accounts for app. 35%. Brass and steel account in total with app. 96% 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 0.1% and 36%, with the exception of ODP (65%). In calculating the ozone depletion potential, the anthropogenically released halogenated hydrocarbons, which can destroy many ozone molecules, are recorded first, therefore, as expected, the impact is higher during the use phase of the product (B6). This is a result of long operation hours in on mode almost every day 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

ISO 14025
DIN EN ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

EN 15804
EN 15804:2012-04: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

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

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

EN 15684:2012
Building hardware - Mechatronic cylinders - Requirements and test methods; German version. EN 15684 (1, 6, B, 4, F, F, 3, 2)

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

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

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

ISO 14001: 2004
Environmental management systems - Requirements with guidance for use (ISO 14001:2004 + Cor. 1:2009); German and English version EN ISO 14001:2004 + AC: 2009

ISO 9001:2008
Health care services - Quality management systems - Requirements based on EN ISO 9001:2008; German version EN 15224:2012

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 of CLIQ dp**

Parameter	Parameter	Unit	A1-3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	1.02E+00	4.27E-03	3.68E-02	5.99E-01	4.27E-03	3.36E-04	4.82E-04	-2.69E-01
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.39E-10	2.17E-14	1.79E-13	4.36E-10	2.17E-14	2.44E-13	1.70E-15	-2.14E-11
AP	Acidification potential of land and water	[kg SO_2-Eq.]	6.88E-03	2.55E-05	1.02E-05	2.67E-03	2.55E-05	1.50E-06	3.68E-07	-2.59E-03
EP	Eutrophication potential	[kg N-eq.]	3.71E-04	1.80E-06	5.86E-07	1.14E-04	1.80E-06	6.38E-08	2.82E-08	-7.06E-05
Smog	Ground-level smog formation potential	[kg O_3-eq.]	8.67E-02	5.25E-04	2.37E-04	2.42E-02	5.25E-04	1.36E-05	8.76E-06	-3.14E-02
Resources		[MJ]	1.16E+00	8.47E-03	1.21E-03	4.85E-01	8.47E-03	2.71E-04	6.34E-05	-1.44E-01

RESULTS OF THE LCA - RESOURCE USE: One piece of CLIQ dp

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	1.71E+00	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	1.71E+00	2.32E-03	9.62E-04	1.95E+00	2.32E-03	1.09E-03	5.88E-05	-1.23E-01
PENRE	Non-renewable primary energy as energy carrier	[MJ]	1.51E+01	-	-	-	-	-	-	-
PENRM	Non-renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non-renewable primary energy resources	[MJ]	1.51E+01	5.91E-02	1.21E-02	1.07E+01	5.91E-02	5.97E-03	6.33E-04	-3.02E+00
SM	Use of secondary material	[kg]	2.40E-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]	4.93E-03	1.64E-06	1.07E-04	4.81E-03	1.64E-06	2.69E-06	1.06E-06	-1.32E-03

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece of CLIQ dp

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	7.84E-04	1.35E-07	8.31E-07	1.48E-03	1.35E-07	8.28E-07	6.54E-08	-2.41E-05
NHWD	Non hazardous waste disposed	[kg]	4.87E-02	7.43E-06	9.25E-04	3.44E-03	7.43E-06	1.93E-06	1.58E-03	7.95E-03
RWD	Radioactive waste disposed	[kg]	8.19E-04	7.74E-08	7.07E-07	1.54E-03	7.74E-08	8.60E-07	2.59E-08	-5.51E-05
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	2.60E-02	0.00E+00	0.00E+00	1.53E-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	4.66E-02	0.00E+00	0.00E+00	0.00E+00	3.48E-04	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	1.31E-01	0.00E+00	0.00E+00	0.00E+00	9.54E-04	-

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

Tel +49 (0)30 3087748- 0
Fax +49 (0)30 3087748- 29
Mail info@bau-umwelt.com
Web **www.bau-umwelt.com**

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

Tel +49 (0)30 - 3087748- 0
Fax +49 (0)30 – 3087748 - 29
Mail info@bau-umwelt.com
Web **www.bau-umwelt.com**

Author of the Life Cycle Assessment
PE INTERNATIONAL AG
Hauptstraße 111-113
70771 Leinfelden-Echterdingen
Germany

Tel +49 (0)711 341817-0
Fax +49 (0)711 341817-25
Mail info@pe-international.com
Web **www.pe-international.com**

Owner of the Declaration
ASSA AB
631 05 Eskilstuna

Tel +46 016-17 70 00
Web www.assa.se