ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

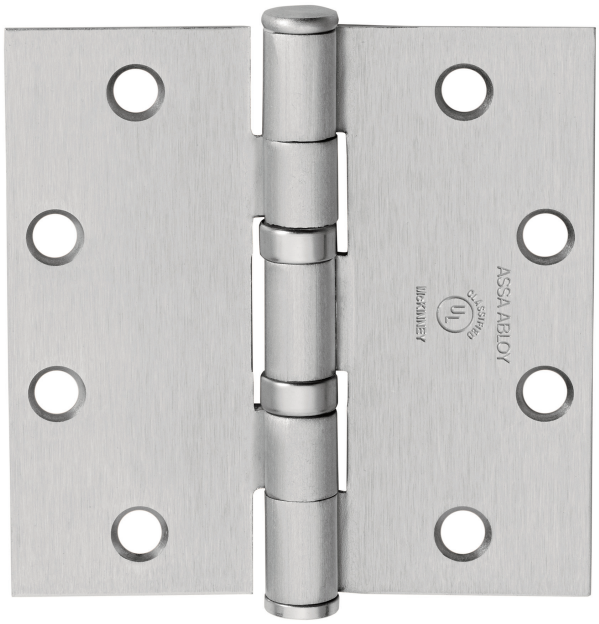
Owner of the Declaration	**ASSA ABLOY**
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASA-20150081-IBA1-EN
Issue date	10.04.2015
Valid to	09.04.2020

Hinges and Handles – McKinney Door Hinge

ASSA ABLOY

Institut Bauen und Umwelt e.V.

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



ASSA ABLOY

1. General Information

ASSA ABLOY	McKinney Door Hinge
Programme holder IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany	**Owner of the Declaration** ASSA ABLOY 225 Episcopal Road Berlin, CT 06037
Declaration number EPD-ASA-20150081-IBA1-EN	**Declared product / Declared unit** This declaration represents 1 McKinney Door Hinge 4-1/2" x 4-1/2" TA2714 US26D, consisting of the following items : -2 hinge leafs, one pin, one plug, two bearing assemblies
This Declaration is based on the Product Category Rules: Locks and fittings , 07.2014 (PCR tested and approved by the independent expert committee (SVR))	**Scope:** This declaration and its LCA study are relevant to the McKinney Door Hinge 4-1/2" x 4-1/2" TA2714 US26D in which the manufacturing of the components and final assembly take place in Taiwan.
Issue date 10.04.2015	
Valid to 09.04.2020	**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 SVR)

2. Product

2.1 Product description

Product name: McKinney Door Hinge 4-1/2" x 4-1/2" TA2714 US26D

Product characteristics:

- 5 Knuckle Full Mortise Bearing Hinge
- Standard Weight
- Steel
- 4-1/2" x 4-1/2"
- Meets or exceeds ANSI A156.1 Standard
- Used on standard weight medium frequency doors
- Used on doors with closing devices

2.2 Application

McKinney Door Hinge 4-1/2" x 4-1/2" TA2714 US26D is recommended for standard weight, medium frequency doors or doors with closing devices. Used on common flush door/ frame/ wall applications.

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
Available Finishes:	US26D
Available Sizes:	4-1/2" x 4-1/2"
Width:	4-1/2"
Height:	4-1/2"

2.4 Placing on the market / Application rules

The standards that can be applied for the McKinney Door Hinge 4-1/2" x 4-1/2" TA2714 US26D are:

- ANSI/BHMA A156.1 Butts and Hinges - Certified

- ANSI/BHMA A156.7 Template Hinge Dimensions
- ANSI/BHMA A156.18 Materials and Finishes

2.5 Delivery status
McKinney Door Hinge 4-1/2" x 4-1/2" TA2714 US26D is delivered 3 per box, 48 per carton. Machine and wood screws for installation are included in the box.

2.6 Base materials / Ancillary materials
The composition of the McKinney Door Hinge 4-1/2" x 4-1/2" TA2714 US26D is as following:

Component	Percentage in mass (%)
Brass	1.63%
Plastics	0.28%
Steel	98.09%
Total	100.0

2.7 Manufacture
The primary manufacturing processes of components and the final assembly processes occur in the factory in Taiwan. The hinge production process consists of metal stamping, machining, polishing, plating, assembly and packaging.

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 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.
• 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
McKinney Door Hinges are distributed through hardware distributors and installed by trained installation technicians, such as locksmiths, carpenters etc. adhering to local, state, and national standards and requirements.

2.10 Packaging
McKinney Door Hinges are packed in a cardboard box and a cardboard carton. The packaging is fully recyclable.
Box – 5-5/8" L x 2-1/2" H x 3" W
Carton – 12-1/2" L x 7" H x 10-3/4" W

Material	Value (%)
Cardboard/paper	100
Total	100.0

2.11 Condition of use
Hinges must be free swinging without any binding. To align the hinges to prevent binding the use of shims is recommended, if required. If the hinges begin to make noise, remove any binding conditions, grease or lubricate all moving parts, re-mount the hinge and re-adjust the hinge with the proper shims.
McKinney hinges come “greased” from the factory, but should be checked on a regular basis for lubrication. McKinney recommends that hinges used in commercial, high frequency applications or in extreme environmental conditions be lubricated annually to ensure long life and quiet operation.

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
McKinney Door Hinge 4-1/2" x 4-1/2" TA2714 is made to comply to and is BHMA Certified to ANSI/BHMA A156.1. If installed properly it can last 30 years or longer.

2.14 Extraordinary effects
Fire
Meets NFPA 80 Requirements for fire rated doors. Suitable for use on Fire Rated Doors, up to 3 hours.

Water
Contain no substances that have any impact on water in case of flood. Steel hinges subjected to unforeseeable flooding conditions will increase the potential for the hinge to rust.

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

2.15 Re-use phase
It is possible to reuse the product during the reference service life and be moved from one similar door opening to another. The majority, by weight, of the hinge is steel which can be recycled.

The hinges can be mechanically dissembled to separate the different materials. 100% of the materials used are recyclable.

2.16 Disposal
No disposal is foreseen for the hinges nor for the corresponding packaging.

2.17 Further information
ASSA ABLOY
225 Episcopal Road
Berlin, CT 06037

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of Hinge 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	1 piece of Hinge
Packaging	kg	0.005
Conversion factor to 1 kg	2.01	-

3.2 System boundary

Type of the EPD: cradle to grave - 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

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 End-of-Life 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

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.

ASSA ABLOY

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)	0.0052	kg

Reference service life

Name	Value	Unit
Reference service life	30	a

End of life (C1-C4)

Name	Value	Unit
Collected separately Steel, Brass, plastics	0.4924	kg

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

Name	Value	Unit
Collected separately waste type (including packaging)	0.4976	kg
Recycling Brass	1.61	%
Recycling Steel	97.07	%
Thermal treatment Plastics	0.28	%
Reuse Paper packaging (from A5)	1.04	%

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	MND	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 piece of Hinge McKinney TA2714

Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
Global warming potential	[kg CO_2-Eq.]	1.25E+00	1.53E-01	7.34E-03	1.17E-02	0.00E+00	3.50E-03	-7.02E-01
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	8.83E-11	5.47E-13	3.36E-14	5.58E-14	0.00E+00	1.05E-14	6.23E-12
Acidification potential of land and water	[kg SO_2-Eq.]	8.75E-03	4.47E-03	1.67E-06	5.33E-05	0.00E+00	8.91E-07	-2.63E-03
Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	8.08E-04	4.55E-04	2.92E-07	1.22E-05	0.00E+00	6.74E-08	-2.20E-04
Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	8.08E-04	2.54E-04	1.19E-07	-1.72E-05	0.00E+00	4.33E-08	-4.05E-04
Abiotic depletion potential for non fossil resources	[kg Sb Eq.]	1.14E-05	3.98E-09	1.32E-10	4.39E-10	0.00E+00	2.31E-10	3.76E-05
Abiotic depletion potential for fossil resources	[MJ]	1.42E+01	1.88E+00	2.06E-03	1.61E-01	0.00E+00	1.48E-03	-6.46E+00

RESULTS OF THE LCA - RESOURCE USE: 1 piece of Hinge McKinney TA2714

Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
Renewable primary energy as energy carrier	[MJ]	8.73E-01	-	-	-	-	-	-
Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
Total use of renewable primary energy resources	[MJ]	8.73E-01	6.63E-03	1.92E-04	6.34E-03	0.00E+00	1.08E-04	1.75E-01
Non renewable primary energy as energy carrier	[MJ]	1.52E+01	-	-	-	-	-	-
Non renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
Total use of non renewable primary energy resources	[MJ]	1.52E+01	1.89E+00	2.41E-03	1.61E-01	0.00E+00	1.64E-03	-6.01E+00
Use of secondary material	[kg]	8.33E-02	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
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
Use of net fresh water	[m^3]	4.73E-03	1.33E-05	2.14E-05	4.47E-06	0.00E+00	8.54E-06	-1.03E-04

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 piece of Hinge McKinney TA2714

Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
Hazardous waste disposed	[kg]	4.79E-04	2.22E-06	1.66E-07	3.67E-07	0.00E+00	1.15E-07	5.21E-04
Non hazardous waste disposed	[kg]	2.03E-02	1.74E-05	1.84E-04	2.03E-05	0.00E+00	3.26E-04	-1.62E-02
Radioactive waste disposed	[kg]	3.95E-04	2.32E-06	1.41E-07	2.11E-07	0.00E+00	6.55E-08	1.82E-04
Components for re-use	[kg]	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	4.96E-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	-
Exported electrical energy	[MJ]	0.00E+00	0.00E+00	9.28E-03	0.00E+00	0.00E+00	6.69E-03	-
Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.62E-02	0.00E+00	0.00E+00	1.83E-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).

Production phase (module A1-A3) contributes between 63 and 100% to total impact assessment. This stage is dominated by upstream emissions associated with steel- and secondary aluminum manufacturing processes.
Steel accounts with app. 98% 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.

Transport to the installation site (Module A4) contributes between 11 and 36% to total impact assessment for all considered impact categories beside the ODP and ADPE (< 1%).

In module D the benefits (negative values) and loads beyond the system boundary are declared for the recycling potential of the metals and for the credits from the incineration process (energy substitution) within A5.

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

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

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)

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

ANSI A250.13-2003
ANSI A250.13-2003: Testing and Rating of Severe Windstorm Resistant Components for Swinging Door Assemblies

ANSI /BHMA 156.1
ANSI /BHMA 156.1: Butts and Hinges

ANSI/BHMA 156.7
ANSI/BHMA 156.7: Template Hinge Dimensions

ANSI/BHMA 156.18
ANSI/BHMA 156.18: Materials and Finishes

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	MND	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 piece of Hinge McKinney TA2714

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	1.25E+00	1.53E-01	7.34E-03	1.17E-02	0.00E+00	3.50E-03	-7.02E-01
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	9.39E-11	5.81E-13	3.57E-14	5.93E-14	0.00E+00	1.12E-14	6.62E-12
AP	Acidification potential of land and water	[kg SO_2-Eq.]	9.02E-03	4.72E-03	2.03E-06	6.97E-05	0.00E+00	1.04E-06	-2.68E-03
EP	Eutrophication potential	[kg N-eq.]	4.18E-04	1.56E-04	1.17E-07	4.92E-06	0.00E+00	3.18E-08	-1.64E-04
Smog	Ground-level smog formation potential	[kg O_3-eq.]	1.47E-01	8.64E-02	4.73E-05	1.43E-03	0.00E+00	8.21E-06	-4.03E-02
Resources		[MJ]	6.35E-01	2.71E-01	2.41E-04	2.31E-02	0.00E+00	1.52E-04	1.22E-01

RESULTS OF THE LCA - RESOURCE USE: 1 piece of Hinge McKinney TA2714

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	8.73E-01	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	8.73E-01	6.63E-03	1.92E-04	6.34E-03	0.00E+00	1.08E-04	1.75E-01
PENRE	Non renewable primary energy as energy carrier	[MJ]	1.52E+01	-	-	-	-	-	-
PENRM	Non renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
PENRT	Total use of non renewable primary energy resources	[MJ]	1.52E+01	1.89E+00	2.41E-03	1.61E-01	0.00E+00	1.64E-03	-6.01E+00
SM	Use of secondary material	[kg]	8.33E-02	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
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
FW	Use of net fresh water	[m^3]	4.73E-03	1.33E-05	2.14E-05	4.47E-06	0.00E+00	8.54E-06	-1.03E-04

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 piece of Hinge McKinney TA2714

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	4.79E-04	2.22E-06	1.66E-07	3.67E-07	0.00E+00	1.15E-07	5.21E-04
NHWD	Non hazardous waste disposed	[kg]	2.03E-02	1.74E-05	1.84E-04	2.03E-05	0.00E+00	3.26E-04	-1.62E-02
RWD	Radioactive waste disposed	[kg]	3.95E-04	2.32E-06	1.41E-07	2.11E-07	0.00E+00	6.55E-08	1.82E-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	-
MFR	Materials for recycling	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.96E-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	-
EEE	Exported electrical energy	[MJ]	0.00E+00	0.00E+00	9.28E-03	0.00E+00	0.00E+00	6.69E-03	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.62E-02	0.00E+00	0.00E+00	1.83E-02	-

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 ABLOY
225 Episcopal Road
Berlin, CT 06037

Tel +001 1-800-346-7707
Fax +001 1-800-541-1073
Mail customerservice@mckinneyhinge.com
Web www.mckinneyhinge.com
www.assaabloydss.com