

Environmental Product Declaration

Corbin Russwin CLX3300 Cylindrical Lock with EcoFlex

Door Hardware



EcoFlex® technology, now available with Corbin Russwin CLX3300 Series cylindrical locks, represents a significant advancement in sustainability for electrified door openings. With 92% energy savings, the electrified CLX3300 Series cylindrical lock is ideal for electromechanical applications, whether it's used with a Wave to Open, Request to Exit, or Door Position Switches.



ASSA ABLOY is committed to providing products and services that are environmentally sound throughout the entire production process and the product lifecycle. Our unconditional aim is to make sustainability a central part of our business philosophy and culture, but even more important is the job of integrating sustainability into our business strategy. The employment of EPDs will help architects, designers and LEED-APs select environmentally preferable door openings.

ASSA ABLOY will continue our efforts to protect the environment and health of our customers/end users and will utilize the EPD as one means to document those efforts.



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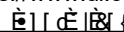


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According to
ISO 14025, EN 15804,
and ISO 21930:2017

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Environment 333 Pfingsten Road Northbrook, IL 60611 	https://www.ul.com/
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	General Program Instruction, v2.7 March 2022	
MANUFACTURER NAME AND ADDRESS	ASSA ABLOY 110 Sargent Drive, New Haven, CT 06511	
DECLARATION NUMBER	4790336162.144.1	
DECLARED PRODUCT & FUNCTIONAL UNIT OF DECLARED UNIT	Corbin Russwin CLX3300 Cylindrical Lock with EcoFlex Functional Unit = 1 piece over 75 year building lifetime	
REFERENCE PCR AND VERSION NUMBER	Part B: Builders Hardware EPD Requirements, Version 1.0, UL Environment, Published November 2019.	
DESCRIPTION OF PRODUCT APPLICATION/USE	ASSA ABLOY products are primarily used in commercial, residential, and educational settings.	
PRODUCT RSL DESCRIPTION	25 Years	
MARKETS OF APPLICABILITY	Global	
DATE OF ISSUE	October 16, 2023	
PERIOD OF VALIDITY	5 Years	
EPD TYPE	Product Specific	
RANGE OF DATASET VARIABILITY	N/A	
EPD SCOPE	Cradle to Grave	
YEAR(S) OF REPORTED PRIMARY DATA	2018	
LCA SOFTWARE & VERSION NUMBER	LCA for Experts	
LCI DATABASE(S) & VERSION NUMBER	LCA for Experts Sphera database, Service Pack 35	
LCIA METHODOLOGY & VERSION NUMBER	TRACI 2.1; CML 4.1	
The sub-category PCR review was conducted by:		UL Environment - PCR Review Panel - epd@ul.com
This declaration was independently verified in accordance with ISO 14025: 2006. The UL Environment "Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report," v3.2 (Dec 2018), based on ISO 21930:2017, serves as the core PCR, with additional considerations from CEN Norm EN 15804 (2013) and the USGBC/UL Environment Part A Enhancement (2017)		 Cooper McCollum, UL Environment
<input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL		
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:		Sustainable Solutions Corporation
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:		Thomas P. Gloria, Industrial Ecology Consultants 

¹ **Exclusions:** EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds, e.g., Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. **Accuracy of Results:** EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. **Comparability:** EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.



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General Information

Description of Company/Organization

Products are manufactured by ASSA ABLOY. The manufacturing facility is located in Berlin, CT and has an ISO 14001 certified environmental management system in place.

ASSA ABLOY remains committed to the principles of the UN Global Compact in the areas of human rights, labor, the environment and anti-corruption.

Product Description

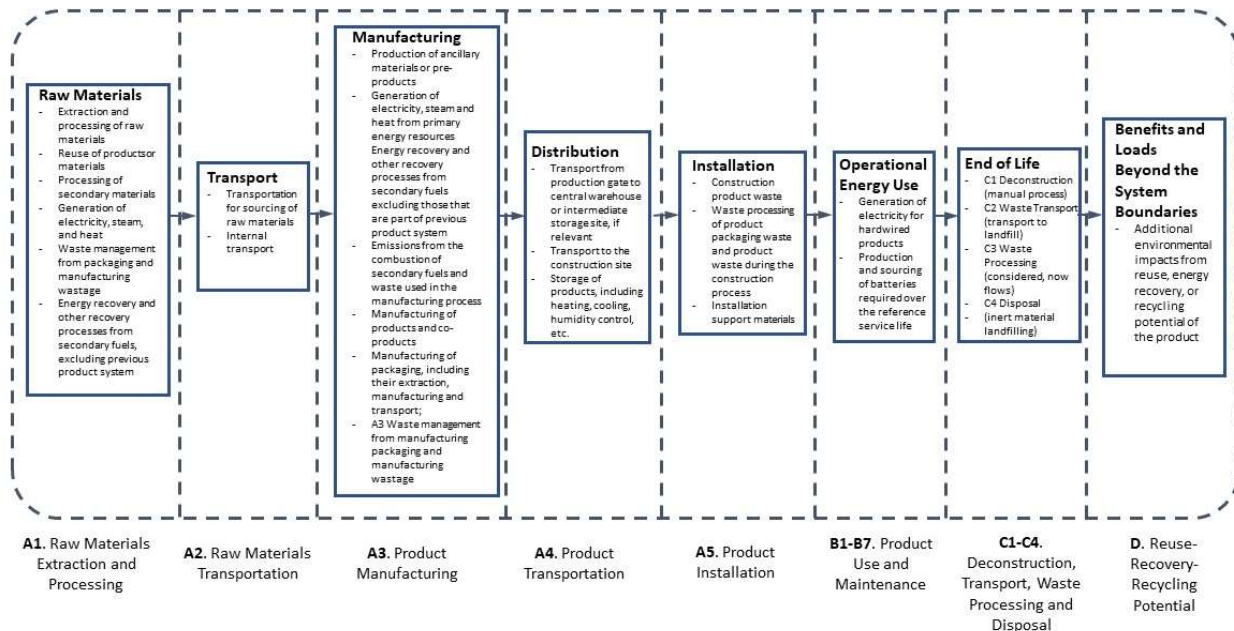
The Corbin Russwin CLX3300 Series Cylindrical Lock with EcoFlex, is an ANSI/BHMA A156.2 Series 4000 Grade 1 certified cylindrical lock.

The CLX3300 Series is available with 26 different mechanical locking functions and 2 electrical functions, 14 Architectural grade finishes and 7 lever options.

- ANSI/BHMA A156.2 Series 4000 Grade 1 Certified
- Meets A117.1 Accessibility Code.
- UL-cUL Listed for use on 3 hr Fire Doors
- Windstorm/Hurricane Certified (refer to local codes)
- Up to 92% energy savings, as certified by Green Circle

Corbin Russwin's products meet building codes that require hurricane, windstorm and FEMA certifications, including some of the most stringent building codes as specified in the Florida Building Code, Miami Dade Code and the International Building Code. Refer to the Corbin Russwin Website (www.corbinrusswin.com) for specific code compliance listings for both the lock hardware and other door components.

Flow Diagram



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Manufacturer Specific EPD

This product-specific EPD was developed based on the cradle-to-grave (modules A1-D) Life Cycle Assessment. The EPD accounts for raw material extraction and processing, transport, product manufacturing, distribution, installation, use, maintenance, disposal, and potential benefits and loads following the end of life disposal. Manufacturing data were gathered directly from company personnel. When updated company-specific data were not available the ratio of production units, between the 2018 calendar year and 2015 baseline year, was used as a proxy. For any product group EPDs, an impact assessment was completed for each product and the highest impacts were reported as conservative representations of the product group. Product grouping was considered appropriate if the individual product impacts differed by no more than $\pm 10\%$ in any impact category.

Application

The locks are designed for commercial and institutional interior and exterior doors. The locks are typically installed in commercial buildings, such as

- Commercial campuses
- Colleges
- Detention centers
- Dormitories
- Hospitals
- Warehouses
- Psychiatric wards

Material Composition

Material	Percentage in mass (%)
Brass	11.68%
Stainless Steel	4.59%
Steel	53.91%
Aluminum	0.00%
Electronics/Mechanics	1.16%
Plastics	1.20%
Other	27.46%
Total	100.00%

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	
Backset	2-3/4" (70 mm) Standard 3-3/4" (95 mm), 5" (127 mm) Optional
Door Thickness	1-3/4" (44 mm) - 2" (51 mm) Standard
Door Prep	ANSI/BHMA A156.115
Handing	Non Handed
Keying	Can be masterkeyed or grand masterkeyed
Warranty	Ten-year Limited
VDC Applications	12VDC or 24VDC applications
Peak Current	500mA lock body peak current draw
Holding Current	10mA lock body holding current draw



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Placing on the Market / Application Rules

The standards that can be applied for the Corbin Russwin CLX3300 Series Cylindrical Lock with EcoFlex are:

- ANSI/BHMA A156.2 American Standard for Bored & Preassembled Locks and Latches
- ANSI/BHMA A156.41 Door Hardware Single Motion to Egress
- ADA American Disability Act, meets A117.1 Accessibility Code
- cUL Listed to US and Canadian safety standards for A label (3 hr) fire doors
- Meets California State Reference code for levers with return to 1/2" of door face
- Meets windstorm certifications (refer to local codes)
- NFPA 80 Standard for Fire Doors and Other Opening Protectives
- Meets ANSI/UL 10C, Positive Pressure Fire Test of Door Assemblies

Properties of Declared Product as Shipped

Corbin Russwin CLX3300 Cylindrical Lock with EcoFlex are delivered as a complete unit, inclusive of all installation materials and instructions.

Delivery Status

Delivered as a complete unit, inclusive of lock body, trim, strike and fasteners or as separate parts. Delivered in a box size 10" x 8" x 4.5" (254 x 203 x 114 mm).

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Methodological Framework

Functional Unit

The declaration refers to the functional unit of 1 unit (or piece) of Door Hardware, as specified in the Builders Hardware PCR.

Name	Value	Unit
Declared unit	1	1 piece of Door Hardware
Mass	2.171	kg
Conversion factor to 1 kg	0.461	-

System Boundary

This is a cradle to grave Environmental Product Declaration. The following life cycle phases were considered:

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 gate to the site	Construction/ installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction /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	X	X	X	X	X	X	X	X	X	X	X	X

Description of the System Boundary Stages Corresponding to the PCR

(X = Included; MND = Module Not Declared)

*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.

Product Maintenance

This product requires no maintenance over its reference service life.

Reference Service Life

The reference service life of the Corbin Russwin CLX3300 Cylindrical Lock with EcoFlex is 25 years, as specified in the Builders Hardware PCR.

Allocation

Allocation was determined on a per unit basis.

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Cut-off Criteria

Processes whose total contribution to the final result, with respect to their mass and in relation to all considered impact categories, is less than 1% can be neglected. The sum of the neglected processes may not exceed 5% by mass of the considered impact categories. For that a documented assumption is admissible.

For Hazardous Substances the following requirements apply:

- The Life Cycle Inventory (LCI) of hazardous substances will be included, if the inventory is available.
- If the LCI for a hazardous substance is not available, the substance will appear as an input in the LCI of the product, if its mass represents more than 0.1% of the product composition.
- If the LCI of a hazardous substance is approximated by modeling another substance, documentation will be provided.

This EPD is in compliance with the cut-off criteria. No processes were neglected or excluded. Capital items for the production processes (machine, buildings, etc.) were not taken into consideration.

Data Sources

Primary data were collected for every process in the product system under the control of ASSA ABLOY Corporate. Secondary data from the LCA for Experts Sphera database were utilized. These data were evaluated and have temporal, geographic, and technical coverage appropriate to the scope of the Builder's Hardware product category.

Data Quality

The data sources used are complete and representative of North America in terms of the geographic and technological coverage and are a recent vintage (i.e. less than ten years old). The data used for primary data are based on direct information sources of the manufacturer. Secondary data sets were used for raw materials extraction and processing, end of life, transportation, and energy production flows. Wherever secondary data is used, the study adopts critically reviewed data for consistency, precision, and reproducibility to limit uncertainty.

Period Under Review

The period under review is the full calendar year of 2018.

Comparability and Benchmarking

A comparison or an evaluation of EPD data is only possible if all 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. Environmental declarations from different programs may not be comparable. Full conformance with the PCR for North American Builders Hardware products allows EPD comparability only when all stages of a Builders Hardware product's life cycle have been considered. However, variations and deviations are possible.

Estimates and Assumptions

End of Life

In the End of Life phase, metal materials were assumed to have an 85% recycling rate while all other materials were assumed to have a 0% recycling rate, in accordance with the Builder's Hardware PCR.

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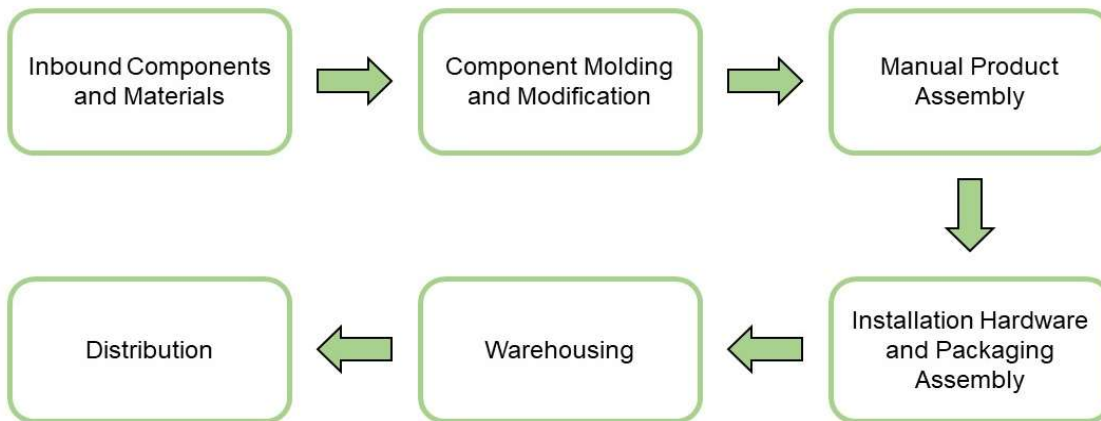
Additional Environmental Information

Background data

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

Manufacturing

The primary manufacturing processes are completed by Tier 1 suppliers and the final manufacturing processes occur in Berlin, CT.



Packaging

All packaging is fully recyclable. The packaging materials are composed by cardboard (app. 77%) and paper (app. 23%).

Material	Quantity (% By Weight)
Cardboard	77%
Paper	23%
Plastics	0%
Total	100%

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Transformation

Transport to Building Site (A4)		
Name	Value	Unit
Liters of fuel	38	l/100km
Transport distance	800	km
Capacity utilization (including empty runs)	90	%
Gross density of products transported	-	kg/m ³
Capacity utilization volume factor	1.00	-

Product Installation

Corbin Russwin CLX3300 Cylindrical Lock with EcoFlex products are distributed through and installed by trained installation technicians, such as locksmiths, carpenters etc. adhering to local/national standards and requirements.

Installation into the building (A5)		
Name	Value	Unit
Auxiliary materials	-	kg
Water consumption	-	m ³
Other resources	-	kg
Electricity consumption	0.01	kWh
Other energy carriers	-	MJ
Waste materials at construction site	0.22	kg
Output substance (recycle)	0.16	kg
Output substance (landfill)	0.04	kg
Output substance (incineration)	0.01	kg
Direct emissions to ambient air*, soil, and water	0.27	kg CO ₂

*CO₂ emissions to air from disposal of packaging

Reference Service Life		
Name	Value	Unit
Reference Service Life	25	years
Estimated Building Service Life	75	years
Number of Replacements	2	number

Product Use

No auxiliary or consumable materials are incurred for maintenance and usage of the product. Repairs or replacement are not usually necessary. No cleaning efforts need to be taken into consideration.

Operational Energy Use (B6)		
Name	Value	Unit
Water consumption (from tap, to sewer)	-	m ³
Electricity consumption	90.1	kWh
Other energy carriers	-	MJ
Equipment output	-	kW
Direct emissions to ambient air, soil, and water	-	kg

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Disposal

The product can be mechanically disassembled to separate the different materials. 85% of the metal materials used are recyclable. The remainder of components are disposed of according to standard municipal solid waste deposition.

End of life (C1-C4)		
Name	Value	Unit
Collected separately	1.80	kg
Collected as mixed construction waste	0.37	kg
Reuse	0.00	kg
Recycling	1.80	kg
Energy recovery	0.00	kg
Landfilling	0.37	kg

Re-use Phase

The product is possible to reuse during the reference service life and can be moved from one similar door opening to another. The majority, by weight, of door components is metal, which can be recycled.

Re-Use, recovery, And/Or Recycling Potential (D)		
Name	Value	Unit
Net energy benefit from energy recovery from waste treatment declared as exported energy in C3 (R>0.6)	0.00	MJ
Net energy benefit from thermal energy due to treatment of waste declared as exported energy in C4 (R<0.6)	0.00	MJ
Net energy benefit from material flow declared in C3 for energy recovery	0.00	MJ
Process and conversion efficiencies		
Further assumptions for scenario development (e.g. further processing technologies, assumptions on correction factors);		

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LCA Results per Functional Unit Over the Building Lifetime of 75 Years - Including 2 Replacements

Results shown below were calculated using TRACI 2.1 Methodology.

TRACI 2.1 Impact Assessment											
Parameter	Parameter	Unit	A1-A3	A4	A5	B4	B6	C2	C3	C4	D
GWP	Global warming potential	kg CO ₂ -Eq.	7.0E+00	1.6E-01	3.0E-02	1.5E+02	7.0E+01	1.0E-02	1.8E-01	2.0E-01	-2.1E+00
ODP	Depletion potential of the stratospheric ozone layer	kg CFC-11 Eq.	7.1E-11	6.1E-12	2.9E-14	3.1E-08	7.2E-10	3.8E-13	6.3E-12	-9.0E-16	1.5E-08
AP Air	Acidification potential for air emissions	kg SO ₂ -Eq.	3.1E-02	9.7E-04	1.8E-04	1.3E+00	6.1E-01	6.1E-05	1.1E-03	9.1E-04	-4.1E-03
EP	Eutrophication potential	kg N-Eq.	1.6E-03	5.4E-05	3.0E-05	2.1E-02	8.6E-03	3.4E-06	5.4E-05	3.4E-04	-1.7E-04
SP	Smog formation potential	kg O ₃ -Eq.	4.8E-01	2.7E-02	1.6E-03	1.0E+01	4.7E+00	1.7E-03	2.7E-02	3.6E-03	-5.9E-02
FFD	Fossil Fuel Depletion	MJ-surplus	7.7E+00	2.9E-01	1.0E-02	1.0E+02	4.3E+01	1.8E-02	3.0E-01	3.1E-02	3.0E-01

*All use phase stages have been considered and only those with non-zero values have been reported

Results shown below were calculated using CML 2001 - April 2013 Methodology.

CML 4.1 Impact Assessment											
Parameter	Parameter	Unit	A1-A3	A4	A5	B4	B6	C2	C3	C4	D
GWP	Global warming potential	kg CO ₂ -Eq.	7.1E+00	1.6E-01	3.3E-02	1.5E+02	7.1E+01	1.0E-02	1.8E-01	2.1E-01	-2.1E+00
ODP	Depletion potential of the stratospheric ozone layer	kg CFC-11 Eq.	6.6E-11	6.1E-12	2.9E-14	2.5E-08	6.0E-10	3.8E-13	6.3E-12	8.1E-17	1.2E-08
AP Air	Acidification potential for air emissions	kg SO ₂ -Eq.	3.0E-02	8.0E-04	1.2E-04	1.4E+00	6.6E-01	5.0E-05	9.8E-04	3.5E-04	-4.1E-03
EP	Eutrophication potential	kg(PO ₄) ³ -Eq.	2.9E-03	1.4E-04	4.2E-05	5.3E-02	2.3E-02	8.9E-06	1.4E-04	3.8E-04	-3.1E-04
POCP	Formation potential of tropospheric ozone photochemical oxidants	kg ethane-Eq.	2.8E-03	9.3E-05	2.4E-05	1.3E-01	6.5E-02	5.8E-06	1.1E-04	9.1E-05	-9.6E-04
ADPE	Abiotic depletion potential for non-fossil resources	kg Sb-Eq.	2.3E-03	6.7E-11	5.2E-09	4.6E-03	7.8E-07	4.2E-12	3.2E-10	8.9E-09	-6.0E-06
ADPF	Abiotic depletion potential for fossil resources	MJ	9.0E+01	2.1E+00	9.0E-02	2.2E+03	1.0E+03	1.3E-01	2.4E+00	2.4E-01	-2.0E+01

*All use phase stages have been considered and only those with non-zero values have been reported

Results below contain the resource use throughout the life cycle of the product.

Resource Use											
Parameter	Parameter	Unit	A1-A3	A4	A5	B4	B6	C2	C3	C4	D
RPR _E	Renewable primary energy as energy carrier	MJ	2.0E+01	0.0E+00	1.3E-02	4.2E+01	0.0E+00	0.0E+00	2.3E-02	1.3E+00	0.0E+00
RPR _M	Renewable primary energy resources as material utilization	MJ	3.8E+00	0.0E+00	0.0E+00	7.7E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NRPR _E	Nonrenewable primary energy as energy carrier	MJ	1.0E+02	2.1E+00	9.5E-02	1.8E+02	1.3E-01	2.5E+00	2.5E-01	-2.0E+01	0.0E+00
NRPR _M	Nonrenewable primary energy as material utilization	MJ	8.1E-01	0.0E+00	0.0E+00	1.6E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SM	Use of secondary material	kg	0.0E+00	0.0E+00	0.0E+00	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	4.5E-26	0.0E+00	0.0E+00	9.0E-26	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NRSF	Use of nonrenewable secondary fuels	MJ	5.3E-25	0.0E+00	0.0E+00	1.1E-24	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
RE	Energy recovered from disposed waste	MJ	0.0E+00	0.0E+00	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 ³	5.5E-02	0.0E+00	4.4E-04	1.2E-01	0.0E+00	0.0E+00	0.0E+00	3.2E-04	2.6E-03

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Results below contain the output flows and wastes throughout the life cycle of the product.

Output Flows and Waste Categories											
Parameter	Parameter	Unit	A1-A3	A4	A5	B4	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	kg	6.0E-05	0.0E+00	2.3E-10	1.2E-04	0.0E+00	0.0E+00	0.0E+00	9.6E-10	-1.4E-06
NHWD	Non-hazardous waste disposed	kg	2.4E-01	0.0E+00	4.1E-02	1.5E+00	0.0E+00	0.0E+00	0.0E+00	2.7E-01	2.2E-01
HLRW	High-level radioactive waste	kg or m ³	5.1E-03	0.0E+00	2.2E-06	1.0E-02	0.0E+00	0.0E+00	0.0E+00	4.2E-06	-1.6E-07
ILLRW	Intermediate- and low-level radioactive waste	kg or m ³	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
CRU	Components for re-use	kg	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
MR	Materials for recycling	kg	0.0E+00	0.0E+00	1.6E-01	7.5E+00	0.0E+00	0.0E+00	1.8E+00	1.8E+00	0.0E+00
MER	Materials for energy recovery	kg	0.0E+00	0.0E+00	1.1E-02	2.2E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
EE	Recovered energy exported from system	MJ	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

*All use phase stages have been considered and only those with non-zero values have been reported

Results below contain direct greenhouse gas emissions and removals throughout the life cycle of the product.

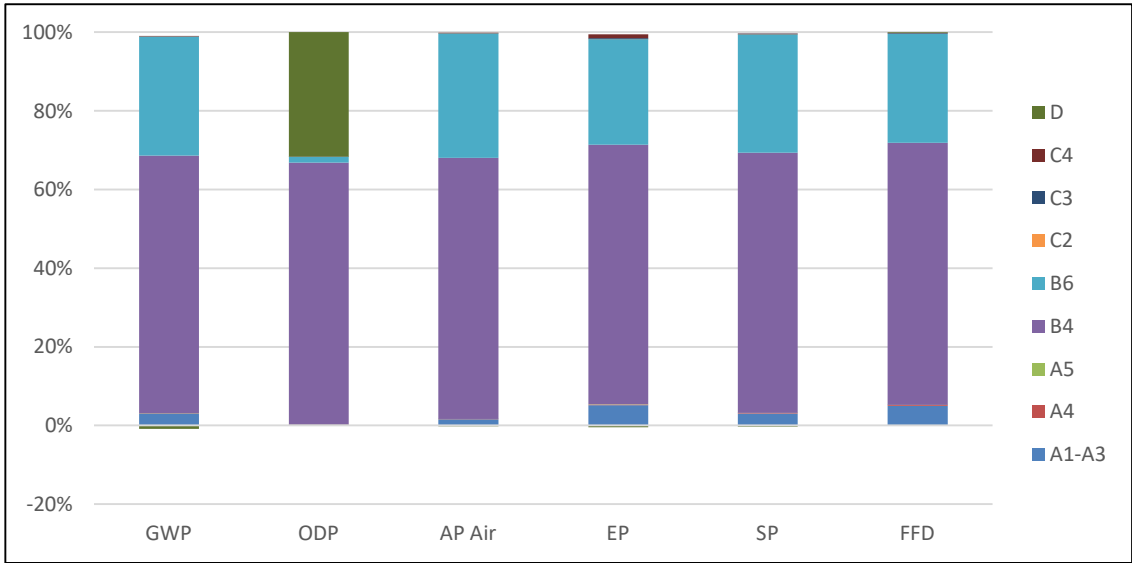
Resource Use											
Parameter	Parameter	Unit	A1-A3	A4	A5	B4	B6	C2	C3	C4	D
BCRP	Biogenic Carbon Removal from Product	kg CO ₂	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEP	Biogenic Carbon Emissions from Product	kg CO ₂	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCRK	Biogenic Carbon Removal from Packaging	kg CO ₂	2.66E-01	0.00E+00	0.00E+00	5.32E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEK	Biogenic Carbon Emissions from Packaging	kg CO ₂	0.00E+00	0.00E+00	2.66E-01	5.32E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEW	Biogenic Carbon Emissions from Combustion of Waste from Renewable Sources Used in Production Process	kg CO ₂	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CCE	Calcination Carbon Emissions	kg CO ₂	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CCR	Carbonation Carbon Removal	kg CO ₂	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CWNR	Carbon Emissions from Combustion of Waste from Non-renewable Sources Used in Production Process	kg CO ₂	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*All use phase stages have been considered and only those with non-zero values have been reported



LCA Interpretation

The use phase life cycle stage (B6) dominates the impacts across all impact categories. This is due to the energy used over the product's lifetime. With two replacements required over a life-span of a building, the replacement stage (B4) dominates from duplicating these stages.



Environmental Product Declaration

Corbin Russwin CLX3300 Cylindrical Lock with EcoFlex

Door Hardware



According to
ISO 14025, EN 15804,
and ISO 21930:2017

Additional Environmental Information

Environmental 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.
- The factories in Berlin, CT have certification of Environmental Management to ISO 14001:2004 and Occupational Health and Safety to OHSAS 18001:2007.

Environmental and Health During Installation

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.

Extraordinary Effects

Fire

Suitable for use in fire and smoke doors: (listed by Underwriters Laboratories)

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.

Delayed Emissions

Global warming potential is calculated using the TRACI 2.1 and CML 4.1 impact assessment methodologies. Delayed emissions are not considered.

Environmental Activities and Certifications

ASSA ABLOY works hard to minimize the environmental impacts of its business activities through various corporate-wide sustainability initiatives. To learn more, please visit: <https://www.assaabloy.com/sv/com/sustainability/sustainability-report/>

Many ASSA ABLOY Group Brands now offer a free Product End-of-Life Recycling program that accepts each brand's products that have reached the end of their life cycle and are beyond the product's warranty period, disposing them in an environmentally-responsible manner.

Further Information

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References

- PCR Part A UL Environment: Product Category Rules for Building-Related Products and Services in North America, Part A: Life Cycle Assessment Calculation Rules and Report Requirements, v.3.2, December 2018.
- PCR Part B UL Environment: Product Category Rules Part B: Requirements on the Environmental Product Declaration for Builders Hardware, v.1.0, November 2019.
- GaBi 8.7 thinkstep.one. GaBi Life Cycle Assessment version 8.7 (software).
- ISO 14025 ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.
- ISO 14040 ISO 14040:2009-11, Environmental management — Life cycle assessment — Principles and framework.
- ISO 14044 ISO 14044:2006-10, Environmental management — Life cycle assessment — Requirements and guidelines.
- EN 15804 EN 15804:2012-04: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction product
- ULE 2013 UL Environment, General Program Instructions, 2013.
- ADAAG-1998 Americans with Disabilities Act Accessibility Guidelines
- ANSI A117.1 Accessible and Usable Buildings and Facilities
- CBC, Title 24 Barrier Free guidelines
- ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building
- ASTM E283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls,
- BHMA A156.2 Bored and Preassembled Locks and Latches
- UL 10(b) Gasketing Material for Fire Doors
- UL 10(c) Positive Pressure Gasketing Material for Fire Doors
- UL 2818 GREENGUARD Certification Program for Chemical Emissions for Building Materials, Finishes and Furnishings
- ISO 21930: 2017 ISO 21930:2017, Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services.
- Characterization Method IPCC. 2014. Climate Change 2013. The Physical Science Basis. Cambridge University Press. (<http://www.ipcc.ch/report/ar5/wg1/>).
- Characterization Method Hauschild M.Z., & Wenzel H. Environmental Assessment of Products. Springer, US, Vol. 2, 1998.
- Characterization Method Heijungs R., Guinée J.B., Huppes G., Lankreijer R.M., Udo de Haes H.A., Wegener Sleeswijk A. Environmental Life Cycle Assessment of Products: Guide and Backgrounds. CML. Leiden University, Leiden, 1992.
- Characterization Method Jenkin M.E., & Hayman G.D. Photochemical ozone creation potentials for oxygenated volatile organic compounds: sensitivity to variations in kinetic and mechanistic parameters. Atmospheric Environment. 1999, 33 (8) pp. 1275-1293.
- Characterization Method WMO. 1999. Scientific Assessment of Ozone Depletion: 1998, World Meteorological Organization Global Ozone Research and Monitoring Project - Report No. 44, WMO, Geneva.
- Characterization Method Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers- version 1.2, January 2017.



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