Environmental Product Declaration

THE INTERNATIONAL EPD® SYSTEM

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Sterling Lock

from

ASSA ABLOY

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-12601
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	An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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Accountabilities for PCR, LCA and independent, third-party verification

Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): PCR 2019:14 Construction products, version 1.3.1

c-PCR to PCR 2019:14 Building hardware (EN 17610:2022) Version: 2022-11-04

PCR review was conducted by: PCR Committee: IVL Swedish Environmental Research Institute, Swedish Environmental Protection Agency, SP Trä, Swedish Wood Preservation Institute, Swedisol, SCDA, Svenskt Limträ AB, SSAB

Life Cycle Assessment (LCA)

LCA accountability: Marquis Miller - Sustainable Solutions Corporation

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

☒ EPD verification by individual verifier

Third-party verifier: Jane Anderson, Ph.D Jane Anderson

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company Information

Owner of the EPD:	ASSA ABLOY Cheltenham (UK) Kingsmead Ind. Est. Princess Elizabeth Way Cheltenham, Glos. GL51 7RE, UK
Contact:	Olympia Dolla olympia.dolla@assaabloy.com
Description of the organisation:	ASSA ABLOY remains committed to the principles of the UN Global Compact in the areas of human rights, labor, the environment, and anti-
Product-related or management system-related 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/
Name and location of production site:	Roto China

Product Information

Product name:	Sterling Lock
Product identification:	Securistyle Sterling Lock gearbox for perimeter locking systems.
Product description:	Product Name: Sterling Lock Product Characteristic: Lock, Exit Device, etc. The Sterling Lock is a single gearbox, which consists of a number of patented unique features that include a cam-action retaining system, bi-directional drive, interchangeable connection system and a stainlesss steel housing. Additional features include: - The gearbox provides bi-directional drive for a perimeter locking system with multiple locking points - The product is produced from Austentic grade 304 stainless steel for corrosion resistance & strength - The gearbox can be retained in position without the need to fit the handle, which prevents damage to the handle during transportation of the window
UN CPC code:	42992
Geographical scope:	Europe, Middle East, India, and Africa

LCA Information

Functional unit / declared unit:

The declaration refers to the declared unit of 1 kilogram of Window Locks and Systems, as specified in the Builders Hardware PCR. 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 ±10% in any impact category.

Name	Value	Unit
Declared unit	1	kg
Mass Per Product	0.160	kg
Products Required to Achieve Declared Unit	6.24	-

Reference service life:

The reference service life of the Sterling Lock is estimated to be 30 years. The 30 years is based on the support, accelerated testing, & service life of the Sterling Lock and neither factual nor estimated life time.

Time representativeness:

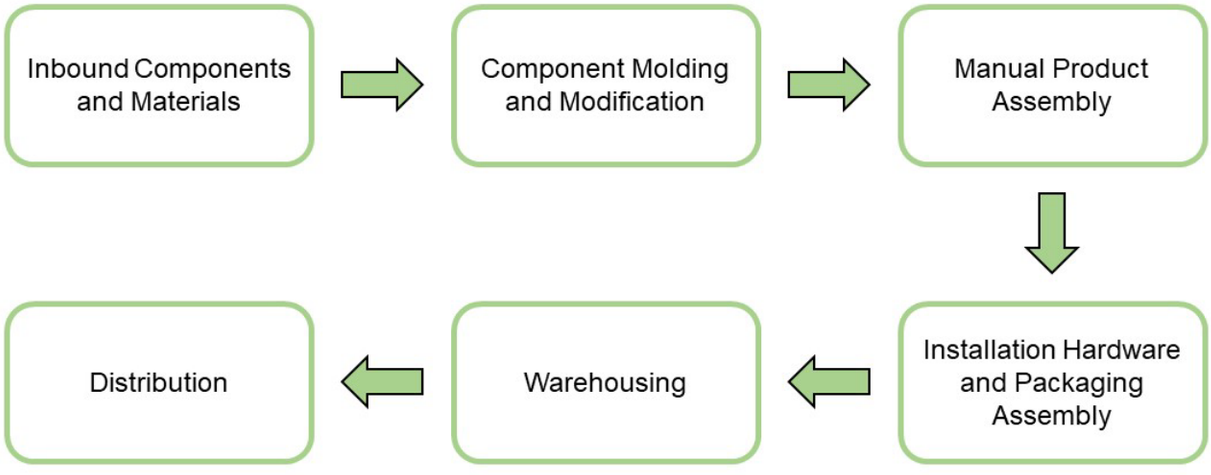
The period under review is the full calendar year of 2022.

Database(s) and LCA software used:

LCA for Experts developed by Sphera was the LCA software used for the study. 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.

Description of system boundaries:

Cradle to grave and module D (A + B + C + D)



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 and by 5% of the considered impact categories for each module. For that a documented assumption is admissible. The below activities were cut off as they met the above criteria.

- Human Activity
- Capital Equipment

	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
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	X	X*	X*	X*	X*	X	X*	X*	X	X	X	X
Geography	Asia	Asia	Asia	Europe	Europe	EMEIA	EMEIA	EMEIA	EMEIA	EMEIA	EMEIA	EMEIA	EMEIA	EMEIA	EMEIA	EMEIA	EMEIA
Specific data used	9%																
Variation - Products	Not Relevant																
Variation - sites	Not Relevant																

(X = Included; MND = Module Not Declared)

* These phases are zero and may be removed from tables for formatting.

† 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.

Content Information

The LCI method principle for the processes used in this study was attributional and no impact has been assigned to pre- or post-consumer recycled materials entering or leaving the system.

Product Components	Weight, kg	Post-consumer material, weight-%	Pre-consumer material, weight-%	Total secondary material, weight-%	Biogenic material, kg C/kg
Brass	0.00E+00	74.0%	16.0%	90.0%	-
Stainless Steel	8.36E-01	42.0%	20.0%	62.0%	-
Steel	0.00E+00	3.0%	10.0%	13.0%	-
Aluminum	0.00E+00	-	56.0%	56.0%	-
Copper	0.00E+00	-	2.0%	2.0%	
Glass	0.00E+00	-	25.0%	25.0%	
Electronics/Mechanics	0.00E+00	-	-	-	-
Plastics	1.64E-01	-	-	-	-
Other	0.00E+00	-	-	-	-
Total	1.00E+00	-	-	-	-
Packaging Materials	**Weight, kg**	**Post-consumer material, weight-%**	**Pre-consumer material, weight-%**	**Total secondary material, weight-%**	**Biogenic material, kg C/kg**
Cardboard	2.12E-02	Not Specified	Not Specified	27.3%	7.13E-03
Paper	0.00E+00	-	-	-	0.00E+00
Plastics	0.00E+00	-	-	-	-
Total	2.12E-02	-	-	-	7.13E-03

The product do not contain substances which exceed the limits for registration with the European Chemicals Agency regarding the “Candidate List of Substances of Very High Concern for Authorisation”.

Additional Environmental Information

Transportation

ASSA ABLOY EMEIA products are sold globally. The assumptions used are based off of major product markets and the PCR. End users may need to adapt impacts based on their location.

Transport to Building Site (A4)		
Name	**Value**	**Unit**
Liters of fuel	0.16	l/100km per kg
Transport distance (Truck)	400	km
Capacity utilization (including empty runs)	36	%
Gross density of products transported	-	kg/m^3
Capacity utilization volume factor	1.00	-

Product Installation

Sterling Lock 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	0.00	kWh
Other energy carriers	-	MJ
Waste materials at construction site	0.02	kg
Output substance (recycle)	0.01	kg
Output substance (landfill)	0.00	kg
Output substance (incineration)	0.00	kg
Direct emissions to ambient air*, soil, and water	0.03	kg CO_2

*CO2 emissions to air from disposal of packaging

Reference Service Life		
Name	**Value**	**Unit**
Reference Service Life	30	years

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	0.0	kWh
Other energy carriers	-	MJ
Equipment output	-	kW
Direct emissions to ambient air, soil, and water	-	kg

Disposal

The product can be mechanically dissembled to separate the different materials. For applicable products, 95% of the metal materials used are recyclable, 42.5% of the electronics are recyclable, and 30% of the glass is recyclable. The remainder of components are disposed by sending to landfill.

Disclaimer: The results of Module A should not be used without considering the results of Module C.

End of life (C1-C4)		
Name	**Value**	**Unit**
Collected separately	0.79	kg
Collected as mixed construction waste	0.21	kg
Reuse	0.00	kg
Recycling	0.79	kg
Energy recovery	0.00	kg
Landfilling	0.21	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. Module D is modelled to reflect the offset of virgin material production in the next product life by calculating the net benefit of the primary material process and the point of substitution recycling process.

Module D Flows		
Input	**Value**	**Unit**
Recycling potential aluminium sheet	0.00E+00	kg/kg
Recycling potential copper sheet	0.00E+00	kg/kg
Glass Cullet	0.00E+00	kg/kg
EAF Steel billet / slab / bloom	2.72E-01	kg/kg
Zinc scrap elZinc - Asturiana de Laminados (D out A5)	0.00E+00	kg/kg
Plastic granulate secondary (low metal contamination)	0.00E+00	kg/kg
Corrugated Board 2018; 84,5% recycled fiber; cut-off EoL	9.25E-03	kg/kg
Outputs	**Value**	**Unit**
Aluminium ingot mix	0.00E+00	kg/kg
Brass component (EN15804 A1-A3)	0.00E+00	kg/kg
Copper Sheet Mix (Europe 2015)	0.00E+00	kg/kg
Float flat glass (open sec. material)	0.00E+00	kg/kg
Ferro nickel (29%)	0.00E+00	kg/kg
BF Steel billet / slab / bloom	-2.72E-01	kg/kg
Zinc redistilled mix	0.00E+00	kg/kg
Electronics scrap [Waste for recovery]	0.00E+00	kg/kg
High impact polystyrene (HIPS)	0.00E+00	kg/kg
Polyethylene low density granulate (LDPE/PE-LD)	0.00E+00	kg/kg
Corrugated board excl. paper production 2015, open paper input, average composition	-9.25E-03	kg/kg

Results of the environmental performance indicators

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Results shown below were calculated using EN 15804+A2 (EF 3.1) Methodology.

EN 15804+A2 Impact Assessment

Parameter	Parameter	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-total	Climate Change - total	kg CO2-Eq.	9.84E+00	3.47E-02	1.17E-02	0.00E+00	4.24E-03	1.27E-02	1.90E-01	-4.53E-01
GWP-fossil	Climate Change, fossil	kg CO2-Eq.	9.88E+00	3.49E-02	7.60E-04	0.00E+00	4.27E-03	1.27E-02	2.31E-02	-4.55E-01
GWP-biogenic	Climate Change, biogenic	kg CO2-Eq.	-2.61E-02	0.00E+00	2.61E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	Climate Change, land use and land use change	kg CO2-Eq.	1.70E-02	3.24E-04	1.37E-06	0.00E+00	3.96E-05	6.52E-06	1.03E-05	-2.08E-04
ODP	Ozone depletion	kg CFC-11 Eq.	2.64E-11	4.55E-15	2.79E-15	0.00E+00	5.57E-16	1.42E-13	1.81E-14	1.36E-12
AP	Acidification	Mole of H+ eq.	5.00E-02	2.25E-04	5.05E-06	0.00E+00	2.75E-05	6.31E-05	5.61E-05	-1.05E-03
EP-freshwater	Eutrophication, freshwater	kg P eq.	4.22E-05	1.28E-07	3.54E-08	0.00E+00	1.57E-08	5.32E-08	4.31E-06	-2.79E-08
EP-marine	Eutrophication, marine	kg N eq.	1.05E-02	1.10E-04	2.29E-06	0.00E+00	1.35E-05	2.81E-05	4.89E-05	-2.51E-04
EP-terrestrial	Eutrophication, terrestrial	Mole of N eq.	1.14E-01	1.22E-03	2.25E-05	0.00E+00	1.49E-04	3.05E-04	2.06E-04	-2.72E-03
POCP	Photochemical ozone formation, human health	kg NMVOC eq.	2.98E-02	2.13E-04	6.68E-06	0.00E+00	2.60E-05	7.58E-05	1.17E-04	-8.38E-04
ADP-minerals&metals	Resource use, mineral and metals	kg Sb eq.	1.00E-04	2.32E-09	6.53E-11	0.00E+00	2.84E-10	1.52E-09	2.95E-10	-4.24E-09
ADP-fossil	Resource use, fossils	MJ	1.50E+02	4.76E-01	1.13E-02	0.00E+00	5.83E-02	2.27E-01	1.63E-01	-3.40E+00
WDP	Water use	m³ world equiv.	6.71E+00	4.23E-04	7.94E-04	0.00E+00	5.17E-05	2.00E-03	7.25E-04	-7.06E-03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

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

The following table contains disclaimers from EN 15804+A2 for the impact categories used above.

ILCD classification	Indicator	Disclaimer
ILCD Type 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD Type 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD Type 3	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2
Disclaimer 1 – This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.		
Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.		

Results shown below were calculated using EN 15804+A2 (EF 3.1) Methodology.

Additional Mandatory Impact Assessment

Parameter	Parameter	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	Climate Change - GHG	kg CO2-Eq.	9.89E+00	3.52E-02	7.61E-04	0.00E+00	4.31E-03	1.27E-02	2.31E-02	-4.55E-01
PM	Particulate matter	Disease incidences	7.73E-07	8.34E-10	3.58E-11	0.00E+00	1.02E-10	5.21E-10	5.62E-10	-1.53E-08
IR-human health	Ionising radiation, human health	kBq U235 eq.	5.31E-01	1.33E-04	8.42E-05	0.00E+00	1.63E-05	4.30E-03	2.82E-04	6.65E-03
Ecotox	Ecotoxicity, freshwater	CTUe	4.64E+01	3.41E-01	6.36E-03	0.00E+00	4.18E-02	9.98E-02	1.95E-01	-5.30E-01
HT-cancer	Human toxicity, cancer	CTUh	4.33E-07	6.93E-12	3.49E-13	0.00E+00	8.48E-13	3.39E-12	8.64E-12	-7.14E-10
HT-non cancer	Human toxicity, non-cancer	CTUh	1.06E-07	3.08E-10	2.42E-11	0.00E+00	3.77E-11	5.85E-11	7.95E-10	5.70E-10
LU	Land Use	Pt	3.08E+01	1.99E-01	2.74E-03	0.00E+00	2.44E-02	7.58E-02	1.52E-02	-1.14E+00

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

Results shown below were calculated using EN 15804+A2 (EF 3.1) Methodology.

Additional Mandatory Impact Assessment

Manufacturing Country	Electricity Source	GWP-GHG	Unit
Czech Republic	CZ: Residual grid mix Sphera	6.02E-01	kg CO2-Eq./kWh

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

Resource Use

Parameter	Parameter	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	MJ	2.48E+01	3.47E-02	5.13E-02	0.00E+00	4.24E-03	9.95E-02	1.47E-02	4.65E-01
PERM	Renewable primary energy resources as material utilization	MJ	4.06E-01	0.00E+00	-4.06E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	Renewable primary energy resources as material utilization	MJ	2.52E+01	3.47E-02	-3.55E-01	0.00E+00	4.24E-03	9.95E-02	1.47E-02	4.65E-01
PENRE	Nonrenewable primary energy as energy carrier	MJ	1.50E+02	4.78E-01	1.14E-02	0.00E+00	5.85E-02	2.32E-01	1.63E-01	-3.44E+00
PENRM	Nonrenewable primary energy as material utilization	MJ	3.77E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.77E+00	0.00E+00
PENRT	Total non-renewable primary energy	MJ	1.54E+02	4.78E-01	1.14E-02	0.00E+00	5.85E-02	2.32E-01	-3.60E+00	-3.44E+00
SM	Use of secondary material	kg	5.24E-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 nonrenewable 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	1.86E-01	3.80E-05	1.96E-05	0.00E+00	4.65E-06	8.77E-05	2.21E-05	-2.63E-04
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

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

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	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	kg	3.81E-04	1.48E-12	4.56E-12	0.00E+00	1.81E-13	-1.25E-11	1.36E-11	-1.04E-10
NHWD	Non-hazardous waste disposed	kg	2.23E-01	7.29E-05	3.26E-03	0.00E+00	8.92E-06	1.25E-04	1.66E-01	-6.95E-03
HLRW	High-level radioactive waste	kg or m^3	3.55E-03	8.95E-07	5.44E-07	0.00E+00	1.10E-07	2.59E-05	1.91E-06	6.04E-05
ILLRW	Intermediate- and low-level radioactive waste	kg or m^3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CRU	Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR	Materials for recycling	kg	0.00E+00	0.00E+00	1.27E-02	0.00E+00	0.00E+00	7.94E-01	0.00E+00	0.00E+00
MER	Materials for energy recovery	kg	0.00E+00	0.00E+00	4.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	Recovered energy exported from system	MJ	0.00E+00	0.00E+00	4.87E-02	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*

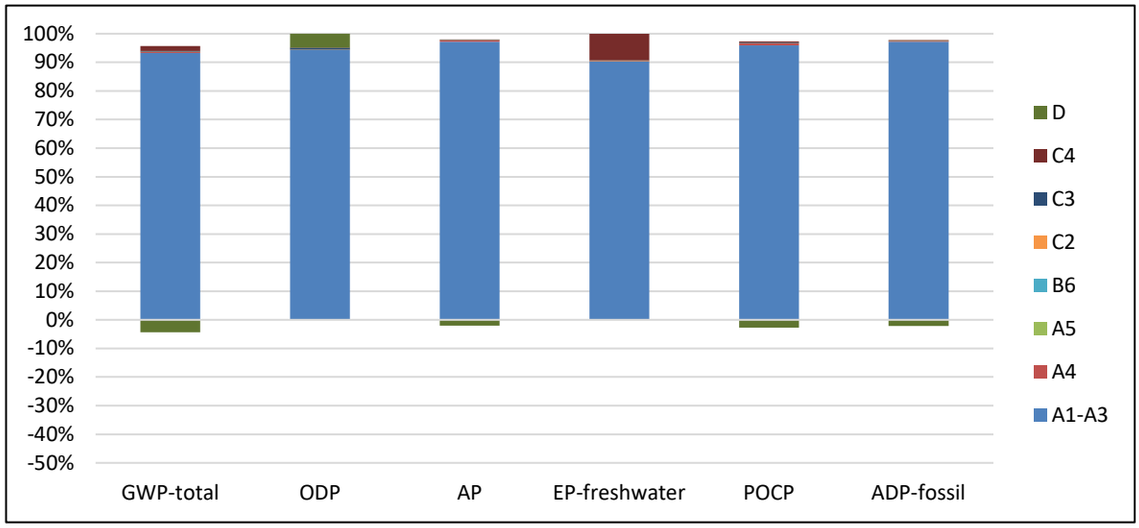
Results below contain direct greenhouse gas emissions and removals throughout the life cycle of the product.

Resource Use										
Parameter	**Parameter**	**Unit**	**A1-A3**	**A4**	**A5**	**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
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
BCRK	Biogenic Carbon Removal from Packaging	kg CO_2	2.61E-02	0.00E+00	0.00E+00	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	2.61E-02	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
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
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
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

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

LCA Interpretation

The raw materials, raw material transportation, and production (A1-A3) phases were the most impactful stages in the cradle-to-grave impacts for the Sterling Lock. These results were influenced by the energy and resources needed to create the raw materials, electricity during manufacturing, and fuel processing. Benefits from the Sterling Lock were achieved in Module D from the recycling of metals.



Additional Environmental Information

Environmental and Health During Manufacturing:	ASSA ABLOY is committed to producing and distributing 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.
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.
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/
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Differences Versus Previous Versions

February 26, 2024: Updated specific data used percentages in the system boundary table and PCR references in the general information section.

References

- LCA for Experts 10.6 — thinkstep.one. LCA for Experts Life Cycle Assessment version 10.6 (software).
- ISO 14025 — ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.
- ISO 14040 — ISO 14040:2006-07, Environmental management — Life cycle assessment — Principles and framework.
- ISO 14044 — ISO 14044:2006-10, Environmental management — Life cycle assessment — Requirements and guidelines.
- PCR — PCR 2019:14 Construction products, version 1.3.1
- EN 15804 — EN 15804+A2:2019: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction product.
- EPD International 2021 — EPD International (2021) General Programme Instructions for the International EPD® System. Version 4.0.
- EN 17610 — EN 17610:2022, Building Hardware - Environmental product declarations - Product category rules complementary to EN15804 for building hardware.
- CEN/TR 16970 — CEN/TR 16970:2016, Sustainability of construction works - Guidance for the implementation of EN 15804.
- EN 17213 — EN 17213:2020, Windows and doors - Environmental Product Declarations - Product category rules for windows and pedestrian doorsets.
- PCR 2019:14 — c-PCR to PCR 2019:14 BUILDING HARDWARE (EN 17610:2022) VERSION: 2022-11-04
- Sphera Database — Sphera, Search Life Cycle Assessment Datasets (fka GaBi), 2023 Dataset Documentation. https://sphera.com/product-sustainability-gabi-data-search/

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