ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	dormakaba International Holding GmbH
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DOR-20250121-CBA1-EN
Issue date	11.04.2025
Valid to	10.04.2030

skyra Key

dormakaba

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General Information

dormakaba

Programme holder

IBU – Institut Bauen und Umwelt e.V.
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10117 Berlin
Germany

Declaration number

EPD-DOR-20250121-CBA1-EN

This declaration is based on the product category rules:

Electronic and physical Access Control Systems, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

11.04.2025

Valid to

10.04.2030

Dipl.-Ing. Hans Peters
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(Managing Director Institut Bauen und Umwelt e.V.)

skyra Key

Owner of the declaration

dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
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Declared product / declared unit

1 piece of the product: skyra Key consisting of the following items:

- skyra Key 720-P1
- Quick guide
- Product packaging

Scope:

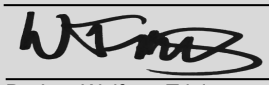
This Environmental Product Declaration refers to a specific electronic skyra Key manufactured by dormakaba. The production site is located in Wetzikon (Switzerland). Green electricity with Guarantee of Origin (GoO) is being used at this production site.

The data represents the year 2024.
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.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally



Dr.-Ing. Wolfram Trinius,
(Independent verifier)

Product

Product description/Product definition

The dormakaba Skyra Key is an electronic key used in the Skyra system to configure and operate Skyra locks and cylinders. The key communicates with the dormakaba skyra app via a Bluetooth® interface. The key contains an RFID PCBA inlay and a rechargeable lithium polymer battery. It supplies the battery-free mechatronic Skyra cylinders and lock with energy for access control, configuration and maintenance.

For the skyra Key the standards which can be applied are the following:

- *EN 15684:2021 (Mechatronic cylinders)*
- *Directive 2014/30/EU (EMC)*
- *Directive 2014/53/EU (RED)*
- *Directive 2011/65/EU (RoHS)*
- *Regulation 1907/2006/EC (REACH)*

The CE-marking takes into account the proof of conformity with the respective harmonized standards based on the legal provisions above.

Application

The skyra Key is used to operate skyra cylinders and locks. The locking devices can be installed indoor or in remote outdoor sites. The skyra system is an access control system mainly for critical infrastructure but also for commercial buildings, lockers, cabinets and gates.

Technical Data

The skyra Key 720-P1 has following technical properties:

Name	Value	Unit
Dimensions (L x W x H)	67 x 33 x 10	mm
Weight	0,028	kg
Supply voltage	LiPo battery	V
Charging USB-C	5,0 / < 100	V / mA
Minimum temperature (operation)	-25	° C
Maximum temperature (operation)	+70	° C

The products are not harmonized in accordance with the Construction Product Regulations (CPR) but in accordance with other provisions for harmonization of the EU. Performance data of the product with respect to its characteristics in accordance with the relevant technical provision which can be applied are mentioned above.

Base materials/Ancillary materials

The major material composition including the packaging of the product is listed below:

Name	Value	Unit
Stainless Steel	42	%
Paper	31	%
Electronics	15	%
Plastics	12	%

The product includes partial articles which contain substances listed in the *Candidate List of REACH Regulation 1907/2006/EC* (date: 21.01.2025) exceeding 0.1 percentage by mass: no

The *Candidate List* can be found on the *ECHA* website address: https:echa.europa.eu/de/home.

Reference service life

The reference service life of the skyra Key is about 7 years, depending on the application and frequency of use. The skyra Key is tested and certified to *EN 15684* and *VdS 2156-2 (BZ+)*, meaning they are designed to withstand a minimum of 200.000 cycles.

LCA: Calculation rules

Declared Unit

The declared unit is 1 piece of the product: skyra Key including packaging

Name	Value	Unit
Declared unit	1	piece/product
Mass of declared Product without Packaging	0.03	kg
Mass of Packaging	0.01	kg
Total mass of declared Product	0.04	kg

System boundary

The type of EPD is: cradle to gate with options, modules C1–C4, and module D (A1–A3 + C + D and additional modules: A4 + A5)

Production - Module A1-A3

The product stage includes: — A1, raw material extraction, processing and mechanical treatments, processing of secondary material input (e.g. recycling processes), — A2, transport to the manufacturer, — A3, manufacturing and assembly including provision of all materials, products and energy *(green electricity with Guarantee of Origin (GoO))*, as well as waste processing up to the end-of-waste state.

Construction stage - Modules A4-A5

The construction process stage includes:
— A4, transport to the building site; — A5, installation into the building; including provision of all materials, products and energy, as well as waste processing up to the end-of-waste state or disposal of final residues during the construction process stage.

Use stage - Module B6

The use stage related to the operation of the building includes: — B6, operational energy use

End-of-life stage– Modules C1-C4 and D

The end-of-life stage includes: — C1, de-construction, demolition: — C2, transport to waste processing; — C3, waste processing for reuse, recovery and/or recycling; — C4, disposal; including provision and all transport, provision of all materials, products and related energy and water use. Module

D (Benefits and loads beyond the system boundary) includes:
— D, recycling potentials, expressed as net impacts and benefits.

Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Global

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. Background database: GaBi, SP40.

LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	0.004	kg C

Wetzikon (Switzerland) is considered for A3.

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	0.00276	l/100km
Transport distance via truck (from dormakaba to habor)	300	km
Capacity utilisation (including empty runs)	55	%
Transport distance via truck (for scaling)	100	km
Transport distance via ship (from harbor to habor)	13.000	km

The product is transported via truck and ship. The product is stored in the dormakaba plant in Wetzikon (Switzerland). The main distribution region is DACH and APAC with the calculated transport distances. In order to allow scalling to a specific point of installation 100 km are declared as well.

Installation into the building (A5)

Name	Value	Unit
Waste packaging (paper / technical documentation)	0.01	kg

Reference service life

Name	Value	Unit
Life Span according to the manufacturer	7	a

Operational energy use (B6)

Name	Value	Unit
Electricity consumption for 1 year	0,00087	kWh
Days per year in use	365	days
On mode per day	0,12	h
Standby mode per day	23,88	h
On mode power	0,012	W
Standby mode power	0,00004	W

End of life (C1-C4)

C1: The product dismantling from the building is done manually without environmental burden.
C2: Transport to waste management is 50 km.

Name	Value	Unit
Collected separately waste type	0.027	kg
Reuse	-	kg
Recycling	0.019	kg
Energy recovery	0.005	kg
Landfilling	0.003	kg

The product is disassembled in a recycling process. Material recycling is then assumed for metals and electronics. The plastic components are assumed to be incinerated with energy recovery. The batteries are landfilled. Region for the End of Life is: Global.

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

Name	Value	Unit
Recycling	100	%

The collection rate is 100 %.

LCA: Results

EF Version: 3.0.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	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	X	MNR	MNR	MNR	X	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 piece sykra Key

Parameter	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	1.25E+01	3E-03	1.7E-02	0	6E-03	0	2.85E-04	1.2E-02	4.27E-05	-2.4E+00
GWP-fossil	kg CO_2 eq	1.25E+01	3E-03	4.26E-04	0	6E-03	0	2.73E-04	1.2E-02	4.25E-05	-2.39E+00
GWP-biogenic	kg CO_2 eq	5.02E-03	6.23E-05	1.7E-02	0	8.32E-06	0	1.26E-05	2.78E-07	1.45E-07	-4E-03
GWP-luluc	kg CO_2 eq	7.03E-03	6.5E-08	2.8E-07	0	6.79E-06	0	6.48E-09	6.75E-07	1.22E-07	-8.11E-04
ODP	kg CFC11 eq	1.21E-09	2.93E-19	3.07E-18	0	6.53E-17	0	2.88E-20	6.03E-18	1.58E-19	-5.31E-15
AP	mol H^+ eq	9.2E-02	6.22E-05	4.77E-06	0	3.09E-05	0	2.73E-07	2.13E-06	3.05E-07	-3.7E-02
EP-freshwater	kg P eq	2.93E-05	6.51E-10	6E-10	0	8.27E-09	0	5.83E-11	9.61E-10	7.3E-11	-4.83E-07
EP-marine	kg N eq	1.3E-02	1.65E-05	1.72E-06	0	5.18E-06	0	8.68E-08	4.8E-07	7.84E-08	-5E-03
EP-terrestrial	mol N eq	1.36E-01	1.81E-04	2.15E-05	0	5.62E-05	0	9.65E-07	9.69E-06	8.62E-07	-4.9E-02
POCP	kg NMVOC eq	3.8E-02	4.61E-05	4.56E-06	0	1.49E-05	0	2.45E-07	1.33E-06	2.38E-07	-1.4E-02
ADPE	kg Sb eq	2E-03	8.15E-11	4.84E-11	0	9.18E-10	0	8.17E-12	8.26E-11	3.82E-12	-2E-03
ADPF	MJ	1.75E+02	3.8E-02	5E-03	0	8.1E-02	0	4E-03	6E-03	5.57E-04	-2.52E+01
WDP	m^3 world eq deprived	1.9E+00	5.52E-06	2E-03	0	2E-03	0	5.34E-07	1E-03	4.45E-06	-3.54E-01

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 piece sykra Key

Parameter	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	2.33E+01	1.24E-04	1.45E-01	0	2.5E-02	0	1.22E-05	1E-03	7.3E-05	-1.84E+00
PERM	MJ	1.44E-01	0	-1.44E-01	0	0	0	0	0	0	0
PERT	MJ	2.35E+01	1.24E-04	9.76E-04	0	2.5E-02	0	1.22E-05	1E-03	7.3E-05	-1.84E+00
PENRE	MJ	1.76E+02	3.8E-02	5E-03	0	8.1E-02	0	4E-03	4.29E-01	5.58E-04	-2.52E+01
PENRM	MJ	4.24E-01	0	0	0	0	0	0	-4.24E-01	0	0
PENRT	MJ	1.77E+02	3.8E-02	5E-03	0	8.1E-02	0	4E-03	6E-03	5.58E-04	-2.52E+01
SM	kg	1.2E-02	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0
FW	m^3	5.86E-02	2.24E-07	4.97E-05	0	4.09E-05	0	2.19E-08	2.92E-05	1.41E-07	-1E-02

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 resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 piece sykra Key

Parameter	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
HWD	kg	1.65E-06	3.76E-12	7.92E-12	0	3.44E-11	0	3.75E-13	2.11E-11	8.5E-12	-2.31E-08
NHWD	kg	2.41E-01	3.94E-06	5.33E-04	0	4.28E-05	0	3.95E-07	1E-03	3E-03	-5.2E-02
RWD	kg	7.01E-03	4.22E-08	2.82E-07	0	6.64E-06	0	4.15E-09	2.06E-07	6.35E-09	-3.91E-04
CRU	kg	0	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	5.8E-02	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	2.6E-02	0	0	0	0	4.4E-02	0	0

EET	MJ	0	0	4.7E-02	0	0	0	0	1.02E-01	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:
1 piece sykra Key

Parameter	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PM	Disease incidence	9E-07	1.05E-09	2.64E-11	0	4.26E-10	0	1.43E-12	2.71E-11	3.77E-12	-3.13E-07
IR	kBq U235 eq	7.01E-01	6.04E-06	4.37E-05	0	1E-03	0	5.93E-07	1.85E-05	6.53E-07	-3E-02
ETP-fw	CTUe	1.04E+02	2.7E-02	3E-03	0	2.5E-02	0	3E-03	2E-03	3.18E-04	-4.92E+00
HTP-c	CTUh	2.63E-08	5.12E-13	1.35E-13	0	1.06E-12	0	5.15E-14	1.8E-13	4.72E-14	-4.39E-10
HTP-nc	CTUh	1.99E-07	2.32E-11	5.84E-12	0	4.26E-11	0	2.2E-12	1.82E-11	5.2E-12	-1.71E-08
SQP	SQP	4.35E+01	1.01E-04	1E-03	0	1.8E-02	0	9.93E-06	2E-03	1.16E-04	-1.72E+00

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. 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 or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

This EPD was created using a software tool.

References

EN 15684
EN 15684:2021, Building hardware - Mechatronic cylinders - Requirements and test methods

EMC Directive
2014/30/EU Electromagnetic Compatibility Directive

RED Directive
2014/53/EU Radio Equipment Directive

EN 15804
EN 15804+A2:2019+AC:2021,
Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

ECHA
European Chemical Agency

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

REACH
Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

RoHS
2011/65/EU, Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Further References

IBU 2021
General Instructions for the EPD programme of Institut Bauen und Umwelt e.V. Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021. www.ibu-epd.com

GaBi
Sphera Solutions GmbH
Gabi Software System and Database for Life Cycle Engineering
19922020
Version 10.0.0.71
University of Stuttgart
Leinfelden-Echterdingen

GaBi ts documentation
GaBi life cycle inventory data documentation (https://www.gabisoftware.com/support/gabi/gabidatabase- 2020-lcidocumentation/).

LCA-tool dormakaba
Tool No.: IBU-DOR-202101-LT1-EN
Developed by Sphera Solutions GmbH

PCR Part A
PCR – Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Re-port according to EN 15804+A2:2019,
Version 1.0, 2020, Institut Bauen und Umwelt e.V., www.ibu-epd.com.

PCR Part B
PCR – Part B: Requirements on the EPD for Electronic and physical Access Control Systems, version 08/2021, Institut Bauen und Umwelt e.V., www.ibu-epd.com.

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