# 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-20240565-CBA1-EN |
| Issue date | 20.12.2024 |
| Valid to | 19.12.2029 |

## Lock Series Confidant

## dormakaba

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

**www.ibu-epd.com | https://epd-online.com**

## General Information

### dormakaba

**Programme holder**

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

**Declaration number**

EPD-DOR-20240565-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**

20.12.2024

**Valid to**

19.12.2029

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

### Lock Series Confidant

**Owner of the declaration**

dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

**Declared product / declared unit**

1 piece of the product: Confidant lock consisting of the following items:

- Lock Confidant
- Lever handle
- Fixing materials
- Product packaging

**Scope:**

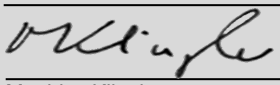
This Environmental Product Declaration refers to a specific electronic lock manufactured by dormakaba. The EPD is representative for the Confidant Lock Series. The production site is located in Montreal (Canada).

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 |



Matthias Klingler,
(Independent verifier)

## Product

### Product description/Product definition

The Lock Series Confidant combines graceful lines, clean aesthetics and contactless Near Field Communication (NFC) technology to provide an enhanced guest experience. This Bluetooth Low Energy (BLE) enabled lock can operate with dormakaba mobile access solutions, allowing guests to use their mobile devices as room keys. The modern looking Confidant lock works conveniently with dormakaba access management software and as a stand alone device.

For the Lock Series Confidant the standards which can be applied are the following:

- *EN 179*
- *EN 12209*
- *EN 1634-1*
- *EN 1363-1*
- *ÖNORM B3859*
- *2011/65/EU (RoHS)*
- *UL 10C*
- *ULC CAN - S104*

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

### Application

The Lock Series Confidant is suitable for small to very large-scale hotels. It easily replaces existing mechanical or electronic door locks. The electronic lock offers access control for guest rooms, common areas, and back-of-house. The lock is available with mortise or tubular latch applications.

### Technical Data

The Electronic Lock Confidant has following technical properties:

| Name | Value | Unit |
|---|---|---|
| Door thickness maximum | 66 | mm |
| Door thickness minimum | 35 | mm |
| Standard backset mortise and tubular latch | 70 | mm |
| Standard backset tubular latch only | 80 | mm |
| Deadbolt for ASM mortise | 25 | mm |
| Mobile access options | BLE | ready / enabled |

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 |
|---|---|---|
| Steel | 45 | % |
| Zinc | 19 | % |
| Paper | 15 | % |
| Stainless steel | 10 | % |
| Electronics | 6 | % |
| Brass | 3 | % |
| Plastics | 2 | % |

The product includes partial articles which contain substances listed in the Candidate List of REACH Regulation 1907/2006/EC (date: 23.01.2024) exceeding 0.1 percentage by mass: yes

- Lead (Pb): 7439-92-1 (CAS-No.) is included in some of the alloys used. The concentration of lead in each individual alloy does not exceed 4% (by mass).

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 Electronic Lock Series Confidant is about 10 years, depending on the application and frequency of use. For repairs and renewals, suitable spare parts are available. The electronic hotel lock series is tested and certified to *EN 179*, 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: Confidant lock including packaging

| Name | Value | Unit |
|---|---|---|
| Declared unit | 1 | piece/product |
| Mass of declared product without packaging | 2.97 | kg |
| Mass of packaging | 0,53 | kg |
| Total mass of declared product | 3,50 | 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, as well as waste processing up to the end-of-waste state.

A3 (gate) is located in Montreal, Canada.

**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.

**Maintenance – Module B2**
This module includes the production and the end of life of the batteries. The potential use of batteries is declared in module B2.

**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 | 0.2 | kg C |

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

**Transport to the building site (A4)**

| Name | Value | Unit |
|---|---|---|
| Liters of fuel | 0,00276 | l/100km |
| Transport distance | 100 | km |
| Capacity utilisation (including empty runs) | 55 | % |

The product is transported via truck. The product is stored in the dormakaba logistic center in Montreal. The main distribution region is North America. In order to allow scaling to a specific point of installation 100 km are declared.

**Installation into the building (A5)**

| Name | Value | Unit |
|---|---|---|
| Waste packaging (paper and plastic) | 0,54 | kg |

**Maintenance (B2)**

| Name | Value | Unit |
|---|---|---|
| Maintenance cycle | 5 | Number/RSL |

The electronic locks of the Confidant Series are operated using a battery and are not connected to mains electricity. The batteries are provided by dormakaba. During the operation of the product, the only energy consumption comes from the battery use. The battery must be exchanged on average 5 times over the declared service life.

In order to allow scaling, the exchange of 1 battery is declared in the LCA.

**Reference service life**

| Name | Value | Unit |
|---|---|---|
| Life Span according to the manufacturer | 10 | a |

**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 | 2.96 | kg |
| Recycling | 2.77 | kg |
| Energy recovery | 0.04 | kg |
| Landfilling | 0.15 | 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 and minor proportions of residues arising from the recycling process 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 Lock Series Confidant**

| Parameter | Unit | A1-A3 | A4 | A5 | B2 | B6 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GWP-total | kg $CO_2$ eq | 3.54E+01 | 3.1E-02 | 7.77E-01 | 2.09E-01 | 0 | 0 | 1.5E-02 | 1.78E-01 | 2E-03 | -4.82E+00 |
| GWP-fossil | kg $CO_2$ eq | 3.6E+01 | 2.9E-02 | 4.4E-02 | 2.09E-01 | 0 | 0 | 1.4E-02 | 1.78E-01 | 2E-03 | -4.81E+00 |
| GWP-biogenic | kg $CO_2$ eq | -6.79E-01 | 1E-03 | 7.33E-01 | 2.88E-04 | 0 | 0 | 6.49E-04 | 4.15E-06 | 7.78E-06 | 3E-03 |
| GWP-luluc | kg $CO_2$ eq | 4.8E-02 | 6.96E-07 | 1.38E-05 | 8.67E-05 | 0 | 0 | 3.34E-07 | 1.01E-05 | 6.55E-06 | -6E-03 |
| ODP | kg CFC11 eq | 2.91E-09 | 3.09E-18 | 1.48E-16 | 7.19E-16 | 0 | 0 | 1.48E-18 | 8.97E-17 | 8.44E-18 | -1.98E-14 |
| AP | mol $H^+$ eq | 2.16E-01 | 2.93E-05 | 2.15E-04 | 2.11E-03 | 0 | 0 | 1.41E-05 | 3.17E-05 | 1.63E-05 | -3.4E-02 |
| EP-freshwater | kg P eq | 2.41E-04 | 6.26E-09 | 2.85E-08 | 1.48E-07 | 0 | 0 | 3E-09 | 1.43E-08 | 3.91E-09 | -8.65E-06 |
| EP-marine | kg N eq | 3.79E-02 | 9.32E-06 | 7.7E-05 | 2.54E-04 | 0 | 0 | 4.47E-06 | 7.14E-06 | 4.2E-06 | -4E-03 |
| EP-terrestrial | mol N eq | 4.06E-01 | 1.04E-04 | 9.68E-04 | 2.32E-03 | 0 | 0 | 4.97E-05 | 1.44E-04 | 4.62E-05 | -4.1E-02 |
| POCP | kg NMVOC eq | 1.11E-01 | 2.64E-05 | 2.04E-04 | 7.85E-04 | 0 | 0 | 1.26E-05 | 1.98E-05 | 1.27E-05 | -1.3E-02 |
| ADPE | kg Sb eq | 1.01E-02 | 8.78E-10 | 2.32E-09 | 9.05E-06 | 0 | 0 | 4.21E-10 | 1.23E-09 | 2.04E-10 | -2E-03 |
| ADPF | MJ | 4.31E+02 | 4.15E-01 | 2.49E-01 | 2.37E+00 | 0 | 0 | 1.99E-01 | 8.2E-02 | 3E-02 | -6.15E+01 |
| WDP | $m^3$ world eq deprived | 9.34E+00 | 5.73E-05 | 9.6E-02 | 2.3E-02 | 0 | 0 | 2.75E-05 | 1.8E-02 | 2.39E-04 | -1.51E+00 |

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 Lock Series Confidant**

| Parameter | Unit | A1-A3 | A4 | A5 | B2 | B6 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PERE | MJ | 9.49E+01 | 1E-03 | 6.41E+00 | 1.97E-01 | 0 | 0 | 6.28E-04 | 2.1E-02 | 4E-03 | -1.2E+01 |
| PERM | MJ | 6.36E+00 | 0 | -6.36E+00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 1.01E+02 | 1E-03 | 4.6E-02 | 1.97E-01 | 0 | 0 | 6.28E-04 | 2.1E-02 | 4E-03 | -1.2E+01 |
| PENRE | MJ | 4.27E+02 | 4.15E-01 | 6.79E-01 | 2.37E+00 | 0 | 0 | 1.99E-01 | 4.04E+00 | 3E-02 | -6.15E+01 |
| PENRM | MJ | 4.39E+00 | 0 | -4.3E-01 | 0 | 0 | 0 | 0 | -3.96E+00 | 0 | 0 |
| PENRT | MJ | 4.31E+02 | 4.15E-01 | 2.49E-01 | 2.37E+00 | 0 | 0 | 1.99E-01 | 8.2E-02 | 3E-02 | -6.15E+01 |
| SM | kg | 1.96E+00 | 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 | $m^3$ | 2.51E-01 | 2.35E-06 | 2E-03 | 7.23E-04 | 0 | 0 | 1.13E-06 | 4.35E-04 | 7.53E-06 | -4.7E-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 Lock Series Confidant**

| Parameter | Unit | A1-A3 | A4 | A5 | B2 | B6 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 2.42E-05 | 4.03E-11 | 3.95E-10 | 1.15E-08 | 0 | 0 | 1.93E-11 | 3.14E-10 | 4.55E-10 | -9.61E-07 |
| NHWD | kg | 1.49E+00 | 4.25E-05 | 2.6E-02 | 1E+00 | 0 | 0 | 2.04E-05 | 1.8E-02 | 1.5E-01 | -2.53E-01 |
| RWD | kg | 1.3E-02 | 4.46E-07 | 1.29E-05 | 4.87E-05 | 0 | 0 | 2.14E-07 | 3.06E-06 | 3.4E-07 | -2E-03 |
| CRU | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MFR | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.14E+00 | 0 | 0 |
| MER | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EEE | MJ | 0 | 0 | 1.18E+00 | 0 | 0 | 0 | 0 | 6.58E-01 | 0 | 0 |
| EET | MJ | 0 | 0 | 2.17E+00 | 0 | 0 | 0 | 0 | 1.52E+00 | 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 Lock Series Confidant**

| Parameter | Unit | A1-A3 | A4 | A5 | B2 | B6 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PM | Disease incidence | 2.3E-06 | 1.54E-10 | 1.22E-09 | 1.52E-08 | 0 | 0 | 7.38E-11 | 4.04E-10 | 2.02E-10 | -4.03E-07 |
| IR | kBq U235 eq | 1.36E+00 | 6.37E-05 | 2E-03 | 5.24E-03 | 0 | 0 | 3.06E-05 | 2.76E-04 | 3.5E-05 | -2.34E-01 |
| ETP-fw | CTUe | 2.03E+02 | 2.94E-01 | 1.17E-01 | 6.06E-01 | 0 | 0 | 1.41E-01 | 3.1E-02 | 1.7E-02 | -2.99E+01 |
| HTP-c | CTUh | 4.97E-07 | 5.53E-12 | 6.34E-12 | 5.97E-11 | 0 | 0 | 2.65E-12 | 2.68E-12 | 2.53E-12 | 5.22E-09 |
| HTP-nc | CTUh | 8.74E-07 | 2.37E-10 | 2.97E-10 | 3.41E-09 | 0 | 0 | 1.14E-10 | 2.71E-10 | 2.79E-10 | 9.75E-07 |
| SQP | SQP | 1.71E+02 | 1E-03 | 6.6E-02 | 4.61E-01 | 0 | 0 | 5.12E-04 | 2.5E-02 | 6E-03 | -1.14E+01 |

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 12209**
EN 12209:2019-10, Building hardware - Mechanically operated locks and locking plates - Requirements and test methods

**EN 179**
EN 179:2008-04, Emergency exit devices operated by a lever handle or push pad, for useon escape routes – Requirements and test methods.

**EN 1634-1**
EN 1634-1:2018-04, Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware

**EN 1363-1**
EN 1363-1:2020-05, Fire resistance tests - Part 1: General Requirements

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

**ISO 14025**
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**
Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) Directive (EU) No 2011/65

**UL 10C**
UL 10C:2016-06, Standard for Safety Positive Pressure Fire Tests of Door Assemblies

**ULC CAN-S104**
ULC CAN-S104:2020-08, Standard Method for Fire Tests of Door Assemblies

**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**
LCA too, ESC
Tool No.: IBU-DOR-202109-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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