ENVIRONMENTAL PRODUCT DECLARATION

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

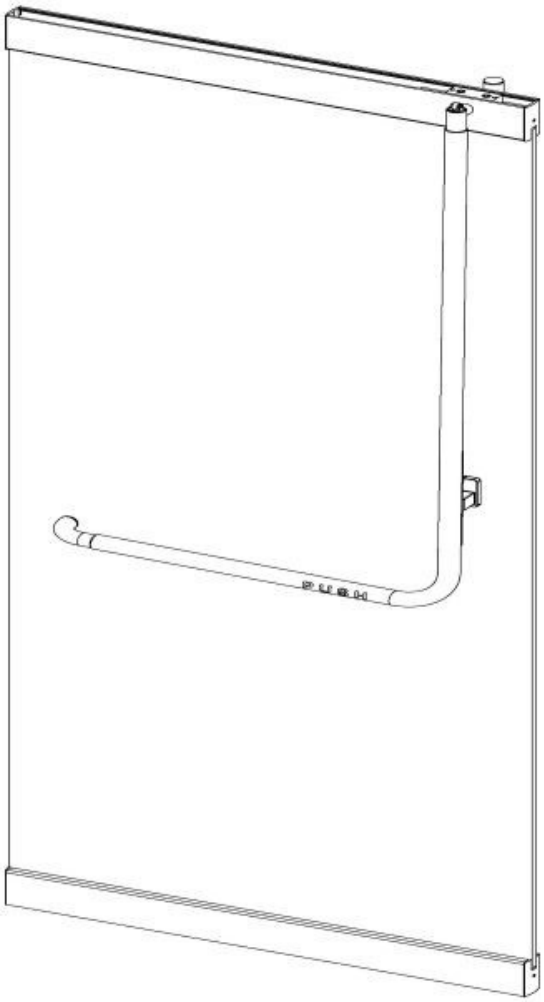
Owner of the Declaration	dormakaba International Holding GmbH
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DOR-20210202-CBC2-EN
Issue date	19.01.2022
Valid to	18.01.2028

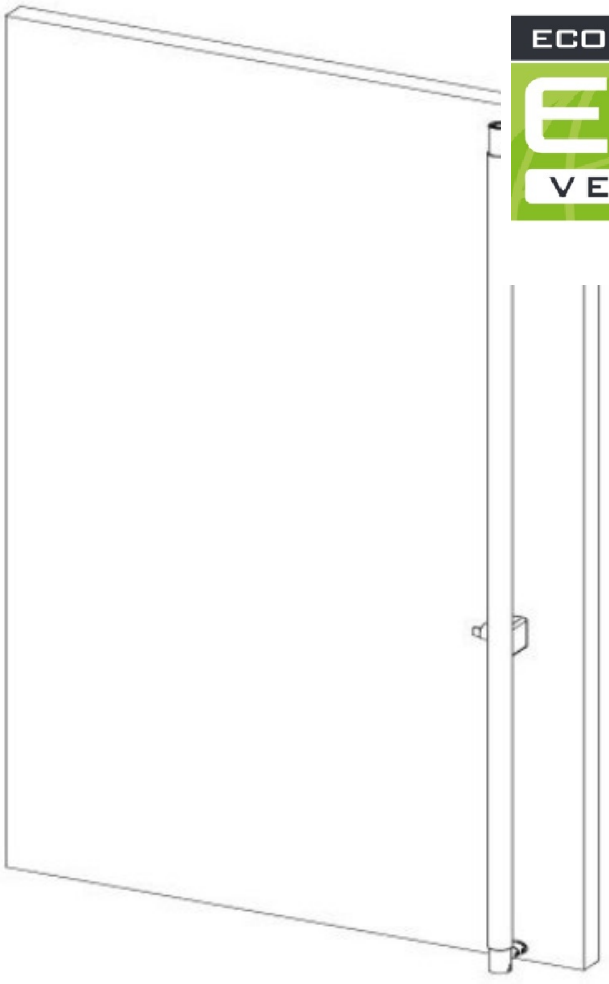
Panic and deadbolt locking device

dormakaba

Institut Bauen und Umwelt e.V.

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ECO PLATFORM EPD VERIFIED

General Information

dormakaba

Programme holder

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

Declaration number

EPD-DOR-20210202-CBC2-EN

This declaration is based on the product category rules:

Building Hardware products, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

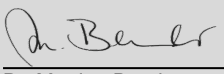
19.01.2022

Valid to

18.01.2028



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



Dr. Martina Bender
(Managing Director Institut Bauen und Umwelt e.V.)

Panic and deadbolt locking device

Owner of the declaration

dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

Declared product / declared unit

1 piece of the product: Panic and deadbolt locking device

Scope:

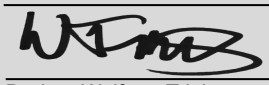
This EPD refers to a specific product manufactured by dormakaba. The production site is located in Reamstown (USA).

The data represents the dormakaba financial year 2020/21.
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
This EPD report covers the Glass Pull (GP) Series panic and deadbolt locking device.

GP Series panic and deadbolt locking device accentuates glass entrance doors with its sleek minimal tubular housing while preserving a glass door's aesthetics. Versatile, durable, and handsomely styled to accommodate sophisticated architectural designs. dormakaba offers a complete glass exit device line manufactured on the east coast. The GP Series panic and deadbolt locking device includes:

Panic device

- GP 1000 Series top latching bolt with manual and electric strikes (fail safe or fail secure)
- GP 1100 Series bottom latching panic with manual strikes

Deadbolt

- GP 1000 Series top locking deadbolt
- GP 1100 Series bottom locking deadbolt
- GP 1300 Series vertical deadbolt with top or bottom or both top and bottom locking bolt options
- Interchangeable core cylinders or cylinder and thumbturn

For the use and application of the product, the respective national provisions at the place of use apply:

- *ANSI/BHMA A156.3-2014, Grade 1*
- *UL305:2012*
- *ULC-S132-07:2016*

Application
The panic and deadbolt locking device can be used for:

- Entrances
- Secure areas

and following verticals:

- Commercial
- Retail
- Hospitality
- Entertainment
- Education

Technical Data

GP Series panic and deadbolt locking device:

- For 3/8' through 7/8' glass doors
- Supports up to 120' tall doors
- +/- 1/2' adjustability height and width to accommodate opening variances
- 316 stainless steel
- Full range of exterior pull options
- Dogging functionality
- Placeholder: Cylinder options/std.
- 3-year warranty

The product with respect to its characteristics are in accordance with the relevant technical provisions (no CE-marking):

- *Underwriter Laboratories (UL)*
- *Americans with Disabilities Act (ADA)*

Base materials/Ancillary materials
The composition of the product is the following:

Name	Value	Unit
Stainless Steel	81.7	%
Aluminium	10.4	%
Brass	3.2	%
Steel	3.1	%
Zinc	1.5	%
Plastics	0.1	%

The product/s include/s partial articles which contain substances listed in *the Candidate List* of *REACH* Regulation *1907/2006/EC* (date: 19.01.2021) exceeding 0.1 percentage by mass: No.

Reference service life
The reference service life of the declared product is 10 years. This corresponds to approx.. 150.000 closing cycles per year, depending on the traffic pattern and frequency of usage.

LCA: Calculation rules

Declared Unit
The declared unit is 1 piece of the product: Panic device (GP1000, GP1100 and GP1300).

Declared unit

Name	Value	Unit
Declared unit	1	piece/product
Weight of declared unit	12.92	kg
Conversion factor to 1 kg (kg per declared unit)	12.92	-

System boundary
The type of EPD is according to EN 15804: "cradle to gate with options, modules C1–C4, and module D".
The following modules are declared: A1-A3, C, D and additional modules: A4 + A5

Production - Module A1-A3
The product stage includes:
— A1, raw material extraction, processing of secondary material input (e.g. recycling processes),
— A2, transport to the manufacturer,
— A3, manufacturing and assembly, processing and mechanical treatments, including provision of all materials, products and energy, 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, treatment of waste packaging materials arising during installation into the building.

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: North America

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

Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	9.07	kg C

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

The following technical scenario information is required for the declared modules and optional for non-declared modules.

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	0.105	l/100km
Transport distance	100	km
Capacity utilisation (including empty runs)	55	%

Truck transport to the construction site declared for 100 km. If necessary, the transport distance can be adjusted at building level.

Installation into the building (A5)

Name	Value	Unit
Waste packaging (wood)	25	kg

Reference service life

Name	Value	Unit
Life Span according to the manufacturer	10	a

End of life (C1-C4)

Name	Value	Unit
Recycling	12.91	kg
Energy recovery	0.01	kg
Transportation to waste management	50	km

The product is disassembled in a recycling process.Material recycling is then assumed for the metals. The plastic components are assumed to be incinerated with energy recovery. Minor proportions of residues arising from the recycling process are landfilled (1%). Region for the End of Life is: Global.

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

Collection rate is 100%

LCA: Results

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	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 piece panic and deadbolt locking device (GP1000, GP1100 and GP 1300)

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	6.95E+01	3.32E-01	4.07E+01	0	5.69E-02	2.8E-02	1.53E-03	-6.81E+01
GWP-fossil	kg CO_2 eq	1.02E+02	3.17E-01	7.53E-01	0	5.44E-02	2.8E-02	1.52E-03	-6.81E+01
GWP-biogenic	kg CO_2 eq	-3.27E+01	1.47E-02	3.99E+01	0	2.52E-03	6.51E-07	5.18E-06	1.83E-01
GWP-luluc	kg CO_2 eq	1.51E-01	7.54E-06	5.22E-04	0	1.3E-06	1.58E-06	4.37E-06	-1.04E-01
ODP	kg CFC11 eq	3.21E-11	3.35E-17	5.94E-15	0	5.75E-18	1.41E-17	5.62E-18	-6.63E-11
AP	mol H^+ eq	5.75E-01	3.17E-04	6.83E-03	0	5.45E-05	4.98E-06	1.09E-05	-2.62E-01
EP-freshwater	kg P eq	1.11E-04	6.78E-08	1.04E-06	0	1.16E-08	2.25E-09	2.61E-09	-6.34E-05
EP-marine	kg N eq	8.71E-02	1.01E-04	1.94E-03	0	1.73E-05	1.12E-06	2.8E-06	-4.19E-02
EP-terrestrial	mol N eq	9.5E-01	1.12E-03	2.79E-02	0	1.93E-04	2.27E-05	3.08E-05	-4.54E-01
POCP	kg NMVOC eq	2.61E-01	2.85E-04	5.34E-03	0	4.9E-05	3.11E-06	8.48E-06	-1.24E-01
ADPE	kg Sb eq	3.47E-03	9.51E-09	9.4E-08	0	1.63E-09	1.93E-10	1.36E-10	-1.66E-03
ADPF	MJ	1.18E+03	4.5E+00	1.03E+01	0	7.72E-01	1.3E-02	1.99E-02	-9.11E+02
WDP	m^3 world eq deprived	3.11E+01	6.21E-04	4.47E+00	0	1.07E-04	2.86E-03	1.59E-04	-2.11E+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 panic and deadbolt locking device (GP1000, GP1100 and GP 1300)

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2.54E+02	1.42E-02	3.27E+02	0	2.43E-03	3.37E-03	2.61E-03	-2.27E+02
PERM	MJ	3.25E+02	0	-3.25E+02	0	0	0	0	0
PERT	MJ	5.79E+02	1.42E-02	1.93E+00	0	2.43E-03	3.37E-03	2.61E-03	-2.27E+02
PENRE	MJ	1.18E+03	4.5E+00	1.03E+01	0	7.73E-01	4.42E-01	1.99E-02	-9.12E+02
PENRM	MJ	4.29E-01	0	0	0	0	-4.29E-01	0	0
PENRT	MJ	1.18E+03	4.5E+00	1.03E+01	0	7.73E-01	1.3E-02	1.99E-02	-9.12E+02
SM	kg	5.75E+00	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	1.1E+00	2.54E-05	1.05E-01	0	4.37E-06	6.84E-05	5.02E-06	-9.16E-01

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 panic and deadbolt locking device (GP1000, GP1100 and GP 1300)

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	5.96E-06	4.36E-10	1.24E-08	0	7.49E-11	4.94E-11	3.03E-10	-2.8E-07
NHWD	kg	1.16E+01	4.6E-04	7.98E-01	0	7.9E-05	2.9E-03	1E-01	-6.91E+00
RWD	kg	1.66E-02	4.83E-06	5.73E-04	0	8.29E-07	4.81E-07	2.27E-07	-3.29E-02
CRU	kg	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	1.29E+01	0	0
MER	kg	0	0	0	0	0	0	0	0
EEE	MJ	0	0	5.66E+01	0	0	0	0	0
EET	MJ	0	0	1.02E+02	0	0	0	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 panic and deadbolt locking device (GP1000, GP1100 and GP 1300)

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	1.51E-05	1.67E-09	4.63E-08	0	2.86E-10	6.35E-11	1.35E-10	-4.93E-06
IR	kBq U235 eq	1.62E+00	6.9E-04	8.96E-02	0	1.18E-04	4.33E-05	2.33E-05	-5.79E+00
ETP-fw	CTUe	5.53E+02	3.19E+00	4.86E+00	0	5.47E-01	4.86E-03	1.14E-02	-3.99E+02
HTP-c	CTUh	1.51E-05	5.99E-11	3.73E-10	0	1.03E-11	4.21E-13	1.69E-12	-1E-07
HTP-nc	CTUh	1.72E-06	2.56E-09	2.33E-08	0	4.4E-10	4.26E-11	1.86E-10	-6.13E-08
SQP	SQP	4.41E+03	1.16E-02	2.85E+00	0	1.98E-03	3.88E-03	4.15E-03	-1.22E+02

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.

References

Standards

ANSI/BHMA A156.3-2014
Revision of ANSI/BHMA A156.3 – 2008
AMERICAN NATIONAL STANDARD FOR EXIT DEVICES.

EN 15804
EN 15804:2019+A2, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.ISO 14025DIN EN ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

ISO 14025
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Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

UL 305:2012
UL Standard for Safety Panic Hardware.

ULC-S132-07:2016
STANDARD METHOD OF TESTS FOR EMERGENCY EXIT AND EMERGENCY FIRE EXIT HARDWARE.

Further References

Americans with Disabilities Act
https://www.ada.gov/.

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

GaBi ts software
Sphera Solutions GmbH Gabi Software System and Database for Life Cycle Engineering 1992-2020 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-lci-documentation/).

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

PCR Part B
PCR – Part B: Requirements on the EPD for Building Hardware product, version 1.2, Institut Bauen und Umwelt e.V., www.ibu-epd.com, 2017.

Underwriters Laboratories
https://ulstandards.ul.com/.

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