

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-20240125-CBA1-EN
Issue date	15/07/2024
Valid to	14/07/2029

Kerberos Tripod Barrier-E01 dormakaba

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EPD
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General Information

dormakaba

Programme holder

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

Declaration number

EPD-DOR-20240125-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

15/07/2024

Valid to

14/07/2029



Dipl.-Ing. Hans Peters
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Kerberos Tripod Barrier-E01

Owner of the declaration

dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

Declared product / declared unit

1 piece of the product: Kerberos Tripod Barrier-E01 consisting of the following items:

- TPB Drive Unit
- TPB Housing
- Product packaging

Scope:

This Environmental Product Declaration refers to a specific Kerberos Tripod Barrier-E01 manufactured by dormakaba. The production site is located in Bühl (Germany).

Green electricity with Guarantee of Origin (GoO) is being used at this production site.

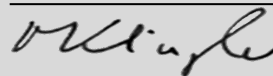
The data represents the year 2024.

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		
<input type="checkbox"/>	internally	<input checked="" type="checkbox"/> externally



Matthias Klingler,
(Independent verifier)

Product

Product description/Product definition

Kerberos Tripod barriers can be used for access control. They regulate the flow of people with ease, even during the busiest periods of the day. dormakaba tripod barriers are compatible with all types of ID readers and are available in different designs. In emergencies, designs with collapsible bars in both directions create an escape route. The tripod barrier bars can be reset automatically to the normal position by authorized personnel as soon as the emergency is over.

For the Kerberos Tripod Barriers, the standards which can be applied are the following:

- EN 17352
- EN 50581
- EN 60335-2-103
- EN 61000
- ISO 9001
- ISO 12100
- ISO 13849-1
- ISO 13849-2
- 2011/65/EU (RoHS)
- Machinery Directive 2006/42/EG

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

Application

Tripod barriers can be used for access controls and make life easier for reception staff at entrances to office and administrative buildings, industrial installations, banks, authorities and many other places.

Technical Data

The Kerberos Tripod Barrier-E01 has following technical properties:

Name	Value	Unit
Material	Stainless Steel	AISI 304
Power supply max.	240	VAC
Protection class housing	33	IP
Protection class components conduction supply voltage	43	IP

LCA: Calculation rules

Declared Unit

The declared unit is 1 piece of the product: Kerberos Tripod Barrier-E01 including packaging

Name	Value	Unit
Declared unit	1	piece/product
Mass of declared product	50.82	kg
Mass of packaging	7,25	kg

Other declared units are allowed if the conversion is shown transparently.

System boundary

The type of EPD is: cradle to gate with options, modules C1–C4, and module D (A1–A3 + B6 + C + D and additional

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	78	%
Paper	11	%
Plastics	4	%
Aluminum	4	%
Electronics	3	%

The Kerberos TPB-E01 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: 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 Kerberos Tripod Barrier-E01 amounts to 15 years, depending on the application and frequency of use. For repairs and renewals, suitable spare parts are available. The Tripod barriers are tested and certified to *EN 17352*, meaning they are designed to withstand 4 Mio. cycles.

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 accompanying packaging	2.07	kg C

Transport to the building site (A4)

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

The product is transported via truck. The main distribution region is Europe. In order to allow scaling to a specific point of installation 100 km is declared.

Installation into the building (A5)

Name	Value	Unit
Waste packaging (paper)	5,633	kg
Waste packaging (plastic)	1,616	kg

Reference service life

Name	Value	Unit
Life Span according to the manufacturer	15	a

Operational energy use (B6)

Name	Value	Unit
Electricity consumption for 1 year	74,095	kWh
Days per year in use	365	days
On mode per day	1	h
Idle mode per day	23	h
On mode power	19	W
Idle mode power	8	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 waste type	43.6	kg
Recycling	43.3	kg
Energy recovery	0.2	kg
Landfilling	0.041	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. Minor proportions of residues arising from the recycling process are landfilled. Region for the End of Life is: Europe.

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

Name	Value	Unit
Recycling	100	%

The 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	X	MNR	MNR	MNR	X	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 piece Kerberos TPB-E01

Parameter	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq	3.14E+02	4.44E-01	1.21E+01	0	4.5E+02	0	1.85E-01	5.08E-01	6.26E-04	-1.62E+02
GWP-fossil	kg CO ₂ eq	3.2E+02	4.25E-01	4.31E+00	0	4.47E+02	0	1.77E-01	5.08E-01	6.22E-04	-1.63E+02
GWP-biogenic	kg CO ₂ eq	-6.19E+00	2E-02	7.79E+00	0	1.49E+00	0	8E-03	1.18E-05	2.13E-06	7.09E-01
GWP-luluc	kg CO ₂ eq	4.52E-01	1.01E-05	3.64E-04	0	6.48E-01	0	4.21E-06	2.87E-05	1.79E-06	-2.97E-01
ODP	kg CFC11 eq	5.23E-10	4.49E-17	3.51E-15	0	9.84E-12	0	1.87E-17	2.56E-16	2.31E-18	-9.92E-11
AP	mol H ⁺ eq	1.39E+00	4.25E-04	3E-03	0	9.88E-01	0	1.77E-04	9.05E-05	4.46E-06	-7.15E-01
EP-freshwater	kg P eq	5.13E-04	9.09E-08	6.12E-07	0	1E-03	0	3.78E-08	4.09E-08	1.07E-09	-1.4E-04
EP-marine	kg N eq	2.02E-01	1.35E-04	9.73E-04	0	2.19E-01	0	5.63E-05	2.04E-05	1.15E-06	-1.11E-01
EP-terrestrial	mol N eq	2.2E+00	2E-03	1.3E-02	0	2.31E+00	0	6.25E-04	4.12E-04	1.26E-05	-1.2E+00
POCP	kg NMVOC eq	6.09E-01	3.83E-04	3E-03	0	6.01E-01	0	1.59E-04	5.65E-05	3.48E-06	-3.28E-01
ADPE	kg Sb eq	1.33E-02	1.27E-08	5.12E-08	0	1.3E-04	0	5.3E-09	3.52E-09	5.59E-11	-5E-03
ADPF	MJ	4.19E+03	6.02E+00	4.43E+00	0	7.87E+03	0	2.51E+00	2.36E-01	8E-03	-2.03E+03
WDP	m ³ world eq deprived	8.82E+01	8.32E-04	1.41E+00	0	9.75E+01	0	3.46E-04	5.2E-02	6.52E-05	-6.17E+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 Kerberos TPB-E01

Parameter	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	9.86E+02	1.9E-02	6.85E+01	0	3.49E+03	0	8E-03	6.1E-02	1E-03	-4.8E+02
PERM	MJ	6.76E+01	0	-6.76E+01	0	0	0	0	0	0	0
PERT	MJ	1.05E+03	1.9E-02	9.53E-01	0	3.49E+03	0	8E-03	6.1E-02	1E-03	-4.8E+02
PENRE	MJ	4.12E+03	6.03E+00	7.39E+01	0	7.87E+03	0	2.51E+00	7.99E+00	8E-03	-2.03E+03
PENRM	MJ	7.72E+01	0	-6.95E+01	0	0	0	0	-7.76E+00	0	0
PENRT	MJ	4.2E+03	6.03E+00	4.43E+00	0	7.87E+03	0	2.51E+00	2.36E-01	8E-03	-2.03E+03
SM	kg	2.25E+01	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	3.43E+00	3.41E-05	3.3E-02	0	4.03E+00	0	1.42E-05	1E-03	2.06E-06	-2.55E+00

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 Kerberos TPB-E01

Parameter	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
HWD	kg	2.03E-05	5.85E-10	1.1E-08	0	3.26E-06	0	2.43E-10	8.98E-10	1.24E-10	2.46E-07
NHWD	kg	2.52E+01	6.17E-04	6.77E-01	0	5.58E+00	0	2.56E-04	5.3E-02	4.1E-02	-1.79E+01
RWD	kg	6.2E-02	6.47E-06	2.03E-04	0	1.19E+00	0	2.69E-06	8.75E-06	9.29E-08	-3.4E-02
CRU	kg	0	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	4.2E+01	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	1.97E+01	0	0	0	0	1.17E+00	0	0

EET	MJ	0	0	3.94E+01	0	0	0	0	2.68E+00	0	0
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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 Kerberos TPB-E01

Parameter	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PM	Disease incidence	2.16E-05	2.24E-09	2.17E-08	0	8.29E-06	0	9.3E-10	1.16E-09	5.52E-11	-1.42E-05
IR	kBq U235 eq	7.72E+00	9.25E-04	2.7E-02	0	1.96E+02	0	3.85E-04	7.88E-04	9.56E-06	-5.96E+00
ETP-fw	CTUe	2.23E+03	4.27E+00	1.91E+00	0	3.36E+03	0	1.78E+00	8.8E-02	5E-03	-1.04E+03
HTP-c	CTUh	4.73E-05	8.03E-11	1.25E-10	0	9.29E-08	0	3.34E-11	7.66E-12	6.91E-13	-3.14E-07
HTP-nc	CTUh	5.15E-06	3.44E-09	9.01E-09	0	3.42E-06	0	1.43E-09	7.75E-10	7.62E-11	-8.44E-07
SQP	SQP	1.59E+03	1.5E-02	1.24E+00	0	2.51E+03	0	6E-03	7.1E-02	2E-03	-2.79E+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.

This EPD was created using a software tool.

References

EN 17352

EN 17352:2022

Power operated pedestrian entrance control equipment - Safety in use - Requirements

EN 50581

EN 50581:2013-02

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

EN 60335-2

EN 60335-2-103: 2016-05

Household and similar electrical appliances

ECHA

European Chemical Agency

ISO 9001

ISO 9001: 2015-09

Quality management systems requirements

ISO 12100

ISO 12100: 2010

Safety of machinery

ISO 13849-1

ISO 13849-1: 2016-06

Safety of machinery

ISO 13849-2

ISO 13849-2: 2013-02

Safety of machinery

Machinery Directive 2006/42/EC

Directive 2006/42/EC of the European Parliament and of the council of 17 May 2006 on machinery, and amending Directive 95/16/EC

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

EN 15804

EN 15804+A2:2019+AC:2021,

Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

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

ISO 14025

ISO 14025:2011-10, Environmental

labels and declarations — Type III environmental declarations — Principles and procedures

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-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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