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-20250614-CBA1-EN
Issue date	03.02.2026
Valid to	02.02.2031

Door Closer TS 99 FL Series

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-20250614-CBA1-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

03.02.2026

Valid to

02.02.2031

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

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

Door Closer TS 99 FL Series

Owner of the declaration

dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

Declared product / declared unit

1 piece of the product: Door Closer TS 99 FL Series consisting of the following items:

- Door closer
- Accessories cover
- Mounting plate
- Product packaging

Scope:

This Environmental Product Declaration refers to a specific Door Closer TS 99 FL Series manufactured by dormakaba. The production site is located in Ennepetal (Germany).

This EPD is representative for the dormakaba's TS 99 FL / TS 99 FLR / TS 99 FLR-K Door Closer Series. The declared results are based on the TS 99 FLR-K, which represents the worst-case scenario.

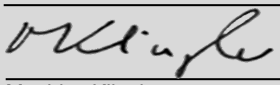
Green electricity with Guarantee of Origin (GoO) is being used at this production site.

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



Matthias Klingler,
(Independent verifier)

Product

Product description/Product definition

The TS 99 FL is a door closer with an integrated free-swing function, allowing doors to move freely from an opening angle greater than 0°. When used in combination with a compatible smoke detection system (e.g., RMZ), it functions as part of a hold-open system suitable for fire-rated doors.
Variants such as the TS 99 FLR and TS 99 FLR-K offer an integrated configuration that combines the hold-open device, free-swing function, and a built-in smoke detector. During normal operation, the free-swing function enables low-resistance movement of the door. In the case of an alarm or power failure, the closing mechanism is automatically activated to ensure the door returns to the closed position.

For the Door Closer TS 99 FL Series the standards which can be applied are the following:

- *EN 1154*
- *EN 1155*
- *ISO 9001 certified*
- *2011/65/EU (RoHS)*

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

Application

The Door Closer TS 99 FL Series can be used universally. Examples of use are:

- Hospitals
- Homes for the elderly and care facilities
- Childcare centres
- Schools

Technical Data

The Door Closer TS 99 FL Series has following technical properties:

Data and features	TS 99 FL	TS 99 FLR	TS 99 FLR-K
Adjustable spring strength setting		EN 2-5	
Standard doors 1250 mm		•	
Fire and smoke check doors ≤ 1250 mm		•	
Non-handed		•	
Slide channel		•	
Closing speed adjustable at valve		•	
Latching action adjustable at valve		•	
Cushioned limit stay, mechanical		○	
Free-swing function from a door opening angle of > 0°		•	
Input voltage	24 V AC ± 15%	230 V AC +10% / -15%	
Output voltage	-	24 V DC	

•yes – no ○ optional
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	39	%
Aluminium	37	%
Packaging	13	%
Plastics	6	%
Others	3	%
Electronics	2	%

The product includes partial articles which contain substances listed in the Candidate List of REACH Regulation *1907/2006/EC* (date: 05.11.2025) 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 3.5% (by mass).

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

Manufacture

The door closer consists mainly of metal components (housing, cam, shaft, springs) combined with functional plastic parts and hydraulic oil for damping. It is manufactured and assembled in dormakaba production facilities in Ennepetal, Germany.The specific manufacturing steps and processes may vary depending on the product type and configuration.

Reference service life

The reference service life of the Door Closer TS 99 FL Series is about 20 years, depending on the application and frequency of use. For repairs and renewals, suitable spare parts are available. The door closer is tested and certified to *EN 1154*, meaning they are designed to withstand a minimum of 500,000 cycles.

LCA: Calculation rules

Declared Unit

The declared unit is 1 piece of the product: Door Closer TS 99 FL Series including packaging

Name	Value	Unit
Declared unit	1	piece/product
Mass of declared product without packaging	5.5	kg
Mass of packaging	0.8	kg
Total Mass of declared product	6.3	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 + B6)

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 green electricity with Guarantee of Origin (GoO), as well as waste processing up to the end-of-waste state. The electricity used corresponds to an average emission factor of 0.00725 kg CO_2 equivalent per kWh.

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, green electricity with Guarantee of Origin (GoO) 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: Germany

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, CUP 2024.2.

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	0.29	kg C

Ennepetal (Germany) 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	100	km
Capacity utilisation (including empty runs)	55	%

The product is transported via truck. The product is stored in the dormakaba logistic center in Wuppertal. The main distribution region is Europe. 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)	0.8	kg

Reference service life

Name	Value	Unit
Life Span according to the manufacturer	20	a

Operational energy use (B6)

Name	Value	Unit
Days per year in use	365	days
Electricity consumption for 1 year	37.95	kWh
On mode power	4.52	w
On mode per day	23	hrs
Idle mode power	1.68	w
Idle mode per day	01	hrs

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	5.48	kg
Recycling	4.89	kg
Energy recovery	0.54	kg
Landfilling	0.05	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 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	MND	MNR	MNR	MNR	X	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 piece TS 99 FL Series

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	2.68E+01	6.48E-02	1.29E+00	2.37E+02	0	2.83E-02	1.37E+00	7.55E-04	-1.6E+01
GWP-fossil	kg CO_2 eq	2.8E+01	6.21E-02	2.64E-02	2.35E+02	0	2.71E-02	1.37E+00	7.48E-04	-1.59E+01
GWP-biogenic	kg CO_2 eq	-1.26E+00	2.7E-03	1.26E+00	2E+00	0	1.18E-03	1.33E-06	2.38E-06	-4.22E-02
GWP-luluc	kg CO_2 eq	1.21E-02	2.42E-06	1.75E-05	4.16E-02	0	1.06E-06	8.84E-05	4.49E-06	-2.34E-03
ODP	kg CFC11 eq	1.56E-10	5.41E-15	1.54E-13	5.12E-09	0	2.36E-15	5.21E-13	2.02E-15	-1.23E-10
AP	mol H^+ eq	1.27E-01	6.84E-05	3.15E-04	5.18E-01	0	2.99E-05	2.34E-04	5.31E-06	-5.8E-02
EP-freshwater	kg P eq	3.83E-05	1.58E-08	4.41E-08	9.3E-04	0	6.91E-09	1.2E-07	1.7E-09	-8.88E-06
EP-marine	kg N eq	2.57E-02	2.44E-05	1.16E-04	1.22E-01	0	1.07E-05	5.18E-05	1.37E-06	-7.74E-03
EP-terrestrial	mol N eq	2.79E-01	2.77E-04	1.44E-03	1.29E+00	0	1.21E-04	1.08E-03	1.51E-05	-8.32E-02
POCP	kg NMVOC eq	7.7E-02	7.16E-05	3.07E-04	3.27E-01	0	3.13E-05	1.44E-04	4.19E-06	-2.47E-02
ADPE	kg Sb eq	3.57E-04	1.61E-09	1.63E-09	4.22E-05	0	7.03E-10	4.69E-09	4.85E-11	-8.76E-05
ADPF	MJ	3.61E+02	8.66E-01	3.49E-01	4.81E+03	0	3.78E-01	7.03E-01	9.87E-03	-2.28E+02
WDP	m^3 world eq deprived	1.23E+01	1.25E-04	1.4E-01	6.53E+01	0	5.44E-05	1.29E-01	8.57E-05	-7.93E-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 TS 99 FL Series

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ	1.99E+02	4.17E-03	9.68E+00	3.41E+03	0	1.82E-03	2.6E-01	1.72E-03	-1.03E+02
PERM	MJ	9.59E+00	0	-9.59E+00	0	0	0	0	0	0
PERT	MJ	2.09E+02	4.17E-03	9.51E-02	3.41E+03	0	1.82E-03	2.6E-01	1.72E-03	-1.03E+02
PENRE	MJ	3.5E+02	8.66E-01	3.49E-01	4.81E+03	0	3.78E-01	1.1E+01	9.87E-03	-2.28E+02
PENRM	MJ	1.03E+01	0	0	0	0	0	-1.03E+01	0	0
PENRT	MJ	3.61E+02	8.66E-01	3.49E-01	4.81E+03	0	3.78E-01	7.03E-01	9.87E-03	-2.28E+02
SM	kg	1.97E+00	0	0	0	0	0	0	0	3.05E+00
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m^3	4.32E-01	5.08E-06	3.3E-03	2.65E+00	0	2.22E-06	3.09E-03	2.62E-06	-2.87E-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 TS 99 FL Series

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	3.16E-06	2.67E-11	1.99E-10	6.8E-06	0	1.17E-11	5.85E-10	2.46E-12	-1.86E-07
NHWD	kg	9.59E+00	8.28E-05	3.56E-02	3.9E+00	0	3.62E-05	1.37E-01	5E-02	-3.75E+00
RWD	kg	1.59E-02	9.63E-07	1.76E-05	7.47E-01	0	4.2E-07	2.47E-05	1.04E-07	-2.43E-02
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	4.84E+00	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	1.71E+00	0	0	0	2.1E+00	0	0
EET	MJ	0	0	3.11E+00	0	0	0	4.86E+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 TS 99 FL Series

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PM	Disease incidence	2.26E-06	6.27E-10	1.73E-09	4.84E-06	0	2.74E-10	2.69E-09	6.67E-11	-9.13E-07
IR	kBq U235 eq	1.78E+00	1.32E-04	2.76E-03	1.23E+02	0	5.75E-05	2.82E-03	1.2E-05	-4.87E+00
ETP-fw	CTUe	1.17E+02	6.42E-01	1.52E-01	1.4E+03	0	2.8E-01	2.67E-01	5.68E-03	-4.99E+01
HTP-c	CTUh	4.56E-08	1.16E-11	9.05E-12	7.79E-08	0	5.06E-12	2.16E-11	1.34E-13	-2.11E-07
HTP-nc	CTUh	2.63E-07	3.64E-10	1.79E-10	1.23E-06	0	1.59E-10	1.61E-09	5.19E-12	-8.23E-08
SQP	SQP	1.81E+02	2.98E-03	1.06E-01	1.98E+03	0	1.3E-03	2.33E-01	2.72E-03	-8.53E+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 1154
DIN EN 1154: 2003--04: Building hardware – Controlled door closing devices. Requirements and test methods (includes amendment A1:2002); German version / EN 1154:1996 +A1:2002

EN 1155
DIN EN 1155: 2003-04: Building hardware – Electrically powered hold-open devices for swing doors – Requirements and test methods (includes amendment A1:2002); German version /EN 1155:1997 +A1:2002

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 9001
DIN EN ISO 9001:2015-11: Quality management systems — Requirements

ISO 14025
DIN EN ISO 14025:201110, 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

SPHERA LCA FE
Sphera LCA for Experts, LCA FE,
Software system and databases,
Managed LCA content MLC (fka GaBi database),
University of Stuttgart and Sphera Solutions GmbH

MLC documentation
MLC life cycle inventory data documentation
https://lcadatabase.sphera.com/

LCA-tool dormakaba
Tool No.: IBU-DOR-202508-LT2-EN
Developed by Sphera Solutions GmbH

PCR Part A
PCR – Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report according to EN15804+A2:2019,Version 1.4, 2024, 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 08/2021, Institut Bauen und Umwelt e.V., www.ibu-epd.com.

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