

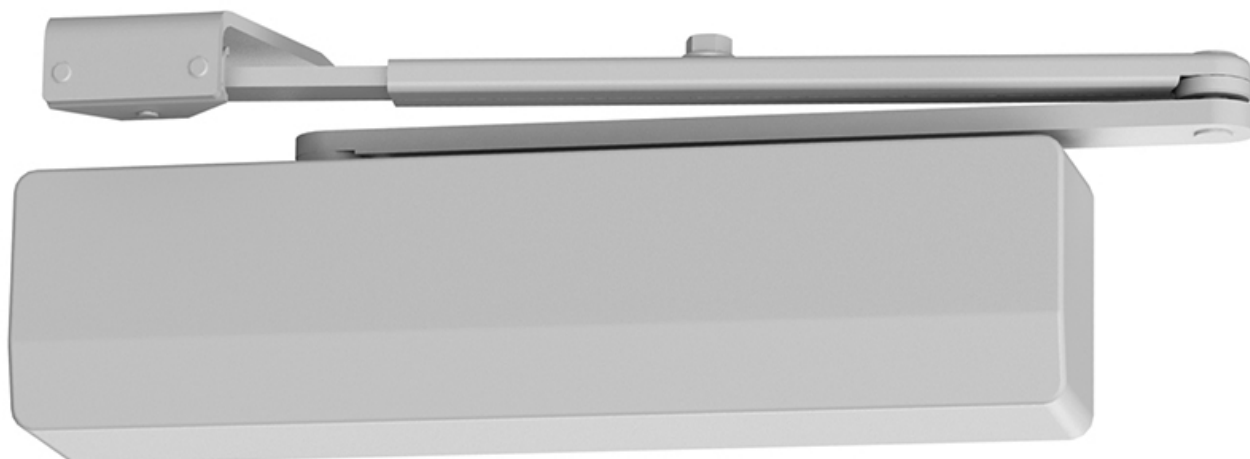
# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804




Owner of the Declaration	dormakaba International Holding AG
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DOR-20200113-CBA1-EN
Issue date	24.08.2020
Valid to	23.08.2025

**BEST HD8000**  
**dormakaba**

[www.ibu-epd.com](http://www.ibu-epd.com) | <https://epd-online.com>



## General Information

<p><b>dormakaba</b></p> <hr/> <p><b>Programme holder</b>          IBU – Institut Bauen und Umwelt e.V.          Panoramastr. 1          10178 Berlin          Germany</p> <hr/> <p><b>Declaration number</b>          EPD-DOR-20200113-CBA1-EN</p> <hr/> <p><b>This declaration is based on the product category rules:</b>          Building Hardware products, 02.2016          (PCR checked and approved by the SVR)</p> <hr/> <p><b>Issue date</b>          24.08.2020</p> <hr/> <p><b>Valid to</b>          23.08.2025</p> <hr/> <p></p> <hr/> <p>Dipl. Ing. Hans Peters          (chairman of Institut Bauen und Umwelt e.V.)</p> <hr/> <p></p> <hr/> <p>Dr. Alexander Röder          (Managing Director Institut Bauen und Umwelt e.V.)</p>	<p><b>BEST HD8000</b></p> <hr/> <p><b>Owner of the declaration</b>          dormakaba International Holding AG          Hofwisenstr. 24          CH-8153 Rümlang          Switzerland</p> <hr/> <p><b>Declared product / declared unit</b>          1 door closer (1 piece) of the BEST HD8000 series</p> <hr/> <p><b>Scope:</b>          This EPD refers to a specific door closer manufactured by dormakaba Production GmbH &amp; Co. KG. The production site is located in Singapore. The LCA results are valid for the variants HD8016 and HD8056.</p> <p>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.</p> <p>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.</p> <hr/> <p><b>Verification</b></p> <p>The standard <i>EN 15804</i> serves as the core PCR</p> <p>Independent verification of the declaration and data according to <i>ISO 14025:2010</i></p> <p><input type="checkbox"/> internally      <input checked="" type="checkbox"/> externally</p> <hr/> <p></p> <hr/> <p>Dr.-Ing. Wolfram Trinius          (Independent verifier appointed by SVR)</p>
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## Product

### Product description/Product definition

The HD8000 series are non-handed surface applied door closers with adjustable spring power (size 1-6 and size 5-6) and backcheck that controls opening motion during abusive or abrupt opening. Supported by a full complement of optional arms, plates, and brackets, the door closers provide the flexibility needed to meet the demands of commercial and institutional applications, including Americans with Disabilities Act (ADA) barrierfree accessibility requirements (only size 1-6). The door closers are available with plastic and metal cover.

For the use and application of the product the respective national provisions at the place of use apply. The standards which can be applied are the following:

- *ANSI/BHMA 156.4*
- *ANSI/ICC A117.1*
- *UL listed product*
- *UL 10C*
- *ADA compliant (version 1-6)*

### Application

The HD8000 series closers are designed for commercial and institutional applications, including ADA barrier-free accessibility requirements. They are suitable for use on hollow metal, aluminum and wood doors and can be used for fire doors.

## Technical Data

The door closers have following technical properties:

Data and features	1-6	5-6
Variable closing force (spring strength)	size 1-6	size 5-6 (+50%)
Standard doors	•	•
External doors, outward opening	•	•
For fire and smoke check doors	•	•
Non-handed	•	•
Arm assembly type	Scissor Arm	Scissor Arm
Closing force variable by means of adjustment screw	•	•
Closing speed adjustable by valve	•	•
Latching speed adjustable by valve	•	•
Backcheck (BC/ÖD) adjustable at valve	•	•
Delayed action (DC/SV) adjustable at valve	◦	◦
Hold-open	◦	◦
Weight in kg	4	4
Length (L) in mm	337	337
Overall depth (B) in mm	60,5	60,5
Height (H) in mm	83,5	83,5
Standard	ANSI A156.4 Grade 1	ANSI A156.4 Grade 1

• 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.

The plant in Singapore is certified to the quality management system *ISO 9001*, which ensures consistent quality of dormakaba's products.

The Environmental Management System in the Singapore production is certified to *ISO 14001* and the Energy Management to *ISO 50001*.

## Base materials/Ancillary materials

Name	Value	Unit
Steel	62	%
Aluminum	25	%
Plastic	4	%
Oil	4	%
Others (Lacquer)	4	%

The products include partial articles which contain substances listed in the *Candidate List of REACH* Regulation 1907/2006/EC (date: 16.01.2020) exceeding 0.1 percentage by mass in the alloy:

- Lead (Pb): 7439-290-1-1 (CAS-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 HD8000 Series door closers depends on the traffic pattern and degree of usage of the door. These closers are rated to ANSI Grade 1, meaning they are designed to withstand a minimum of 1,500,000 cycles. The reference service life amounts for 20 years.

## LCA: Calculation rules

### Declared Unit

The declared unit of this analysis is one door closer.

### Declared unit

Name	Value	Unit
Declared unit	1	piece/prod uct
Conversion factor to 1 kg	0.2427	-
Mass of declared Product	4.12	kg

The difference in product weight for the two-door closer types is approx. 4%. The product with the highest weight is declared in this EPD representing the entire product series.

### System boundary

Type of EPD: cradle to gate - with options.

The Environmental Product Declaration refers to the production stage (A1-A3), transport from the gate to construction site (A4), the end of life stage (C3) and indicates the recycling potential which is declared in the module "benefits and loads beyond the product system boundary" (D).

In line with the PCR, A5 is declared to ensure the export of biogenic CO<sub>2</sub> from renewable packaging materials.

Modules A1 to A3 include the provision and processing of raw materials as well as the processing of input materials, the transport to manufacturer and production site. Module C3 includes the incineration of plastics for

energy recovery. Module D comprises the recycling of metals and gives the recycling potentials as well as potential benefits from energy substitution.

A5 is declared to ensure the export of biogenic CO<sub>2</sub> that is incorporated in the used packaging materials (paper). Potential benefits from the incineration of packaging materials are also declared in module D. The incineration processes in the End-of-Life are based on European datasets. The recycling processes in the End-of-Life are based on European and Global datasets.

### 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.

The database used is *GaBi ts 9.2*, SP 39.

## LCA: Scenarios and additional technical information

Additional technical information for the declared modules.

### Transport to the building site (A4)

Name	Value	Unit
Litres of fuel truck (per piece)	0.008	l/100km
Transport distance truck	2000	km
Capacity utilisation (including empty runs)	85	%
Transport distance ship	13000	km

### Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site (packaging)	0.25	kg

### End of life (C1-C4)

Name	Value	Unit
Recycling	4.12	kg

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

Name	Value	Unit
Recycling	100	%

Collection rate is 100%.

## LCA: Results

The table below summarizes which modules are declared (as indicated by an "X"), and which are not declared (as indicated with "MND").

**DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE 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	MND	MND	X	MND	X

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 door closer (4.12kg)

Parameter	Unit	A1-A3	A4	A5	C3	D
Global warming potential	[kg CO <sub>2</sub> -Eq.]	10.40	1.21	0.35	0.69	-3.47
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	7.71E-10	9.80E-17	8.40E-17	3.74E-16	-7.72E-16
Acidification potential of land and water	[kg SO <sub>2</sub> -Eq.]	4.22E-2	2.60E-2	7.31E-5	4.57E-4	-8.42E-3
Eutrophication potential	[kg (PO <sub>4</sub> ) <sup>3</sup> -Eq.]	3.92E-3	2.99E-3	1.38E-5	7.00E-5	-7.25E-4
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	3.92E-3	6.56E-4	4.83E-6	1.85E-5	-8.91E-4
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	3.29E-4	4.01E-8	6.86E-9	5.58E-8	5.84E-6
Abiotic depletion potential for fossil resources	[MJ]	149.00	15.90	0.10	0.31	-31.50

### RESULTS OF THE LCA - RESOURCE USE: 1 door closer (4.12kg)

Parameter	Unit	A1-A3	A4	A5	C3	D
Renewable primary energy as energy carrier	[MJ]	29.70	0.06	3.72	0.07	-0.23
Renewable primary energy resources as material utilization	[MJ]	3.70	0.00	-3.70	0.00	0.00
Total use of renewable primary energy resources	[MJ]	33.40	0.06	0.02	0.07	-0.23
Non-renewable primary energy as energy carrier	[MJ]	141.10	15.90	0.00	19.24	-34.00
Non-renewable primary energy as material utilization	[MJ]	18.90	0.00	0.00	-18.90	0.00
Total use of non-renewable primary energy resources	[MJ]	160.00	15.90	0.11	0.34	-34.00
Use of secondary material	[kg]	2.61	0.00	0.00	0.00	0.00
Use of renewable secondary fuels	[MJ]	0.00	0.00	0.00	0.00	0.00
Use of non-renewable secondary fuels	[MJ]	0.00	0.00	0.00	0.00	0.00
Use of net fresh water	[m <sup>3</sup> ]	0.05	0.00	0.00	0.00	-0.01

### RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES:

#### 1 door closer (4.12kg)

Parameter	Unit	A1-A3	A4	A5	C3	D
Hazardous waste disposed	[kg]	7.23E-6	2.06E-9	2.19E-10	2.06E-9	-2.32E-9
Non-hazardous waste disposed	[kg]	0.96	0.00	0.01	0.05	-0.18
Radioactive waste disposed	[kg]	4.22E-3	5.62E-6	6.56E-6	1.43E-5	-9.89E-4
Components for re-use	[kg]	0.00	0.00	0.00	0.00	0.00
Materials for recycling	[kg]	0.00	0.00	0.00	1.62	0.00
Materials for energy recovery	[kg]	0.00	0.00	0.00	0.00	0.00
Exported electrical energy	[MJ]	0.00	0.00	0.53	1.52	0.00
Exported thermal energy	[MJ]	0.00	0.00	0.96	2.97	0.00

## References

### ADA

Americans with Disabilities Act 1990

### ANSI/ICC A117.1

ANSI/ICC A117.1 - 2009, Accessible and usable buildings and facilities

### ANSI/BHMA A156.4

ANSI/BHMA A156.4 - 2013, Door controls — Closers

**Candidate List** of REACH Regulation /1907/2006/EC (date: 16.01.2020)

### ECHA

European Chemicals Agency

### EN 15804

EN 15804:2012-04 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

### ISO 9001

Quality Management System: ISO 9001:2015

### ISO 14001

Environmental Management System: ISO 14001:2015

**ISO 50001**

Energy Management System: ISO 50001:2011

**UL 10C**

UL 10C, Positive pressure fire tests of door assemblies

**GaBi ts**

thinkstep AG, GaBi Software System and Database for Life Cycle Engineering (SP39). 1992-2019 Copyright thinkstep AG

**PCR Part A**

Institut Bauen und Umwelt e.V., Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part A: Calculation Rules for the

Life Cycle Assessment and Requirements on the Background Report

**PCR Part B**

PCR Guidance-Texts for Building-Related Products and Services. From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU). Part B: Requirements on the EPD for building hardware products

**REACH**

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Regulation (EC) No 1907/2006

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