

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-20190139-IBC1-EN
Issue date	29.01.2020
Valid to	28.01.2025

Slide Channel System for TS 98 XEA and TS 93
dormakaba

www.ibu-epd.com / <https://epd-online.com>



1. General Information

<p>dormakaba</p>	<p>Slide channel system for TS 98 XEA and TS 93</p>						
<p>Programme holder IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany</p>	<p>Owner of the declaration dormakaba International Holding AG Hofwissenstraße 24 CH- 8153 Rümlang Switzerland</p>						
<p>Declaration number EPD-DOR-20190139-IBC1-EN</p>	<p>Declared product / declared unit The declaration represents 1 slide channel GSR-EMR 2 XEA, consisting of the following items: - A slide channel - An integrated door coordinator - An electro-mechanical hold open device - An integrated smoke detector and power pack</p>						
<p>This declaration is based on the product category rules: Building Hardware products, 02.2016 (PCR checked and approved by the SVR)</p>	<p>Scope: This EPD follows a worst-case approach to cover all slide channel versions for the door closer TS 98 XEA and TS 93. With the declared slide channel GSR - EMR 2 XEA the following slide channel versions will be included in the scope of validity: - G-EMF XEA - G-EMR XEA - GSR XEA - GSR-EMF 2 XEA</p>						
<p>Issue date 29.01.2020</p>	<p>All the result tables of above mentioned slide channels can be viewed in the attachment to this EPD. The slide channel versions are manufactured by dormakaba. The various technical features are outlined in chapter 2. The products are manufactured at the dormakaba production facility in Ennepetal, Germany.</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>Valid to 28.01.2025</p>	<p>Verification</p> <table border="1"> <tr> <td colspan="2">The standard /EN 15804/ serves as the core PCR</td> </tr> <tr> <td colspan="2">Independent verification of the declaration and data according to /ISO 14025:2010/</td> </tr> <tr> <td><input type="checkbox"/> internally</td> <td><input checked="" type="checkbox"/> externally</td> </tr> </table> <p> Dipl. Ing. Hans Peters (President of Institut Bauen und Umwelt e.V.)</p> <p> Dr. Alexander Röder (Managing Director IBU)</p> <p> Dr.-Ing. Wolfram Trinius (Independent verifier appointed by SVR)</p>	The standard /EN 15804/ serves as the core PCR		Independent verification of the declaration and data according to /ISO 14025:2010/		<input type="checkbox"/> internally	<input checked="" type="checkbox"/> externally
The standard /EN 15804/ serves as the core PCR							
Independent verification of the declaration and data according to /ISO 14025:2010/							
<input type="checkbox"/> internally	<input checked="" type="checkbox"/> externally						

2. Product

2.1 Product description / Product definition

This EPD follows a worst-case approach and covers the slide channel GSR - EMR 2 XEA.

TS 98 XEA GSR-EMR 2 with electromechanical hold-open unit and smoke detector for double leaf doors.

The GSR-EMR XEA ensures that the 2-leaf doors close in the correct order, it also allows for fire and smoke control doors to be equipped in such a manner that they can be precisely held open and fully monitored and controlled independently of other systems. In case of alarm or power outage, the hold-open unit is disabled and the door is closed by the door closer. Thanks to the adjustable release force (no

tools required), the hold-open unit can also be effortlessly released by hand. The hold-open position is also the maximum door opening angle. To prevent damage to the door and door closer, a door stop is recommended.

There are also connectors for additional detectors, an external manual release, along with potential-free alarm contact. For exceptionally large and heavy doors (over 1250 mm) or doors where the hold-open position is supposed to be above 130°, using EM electromagnets is recommended—in lieu of the G-EMR XEA. The device has two separate LEDs that serve as an operation and maintenance indicator.

dormakaba offers comprehensive accessories for all applications.

The following slide channel versions are included in the scope of validity:

Slide channels for 1-leaf doors:

TS 98 XEA EMF

Solution with electromechanical hold-open unit (EMF).

TS 98 XEA EMR

Application consisting of an electromechanical hold-open unit (EMF) with integrated smoke detector and power pack (Rauchmeldezentrale-smoke detection panel) (RMZ).

Slide channels for 2-leaf doors:

TS 98 XEA GSR

Standard version for double-leaf doors with door coordinator in single-piece slide channel.

TS 98 XEA GSR-EMF 2

With door coordinator and electromechanical hold-open unit.

Detailed information is available in the background report.

For placing the slide channel versions for TS 98 XEA / TS 93 on the market in the European Union/European Free Trade Association EU/EFTA (with the exception of Switzerland) Regulation (EU) No. 305/2011 (CPR) applies. The product needs a declaration of performance. The accessories in form of the hold-open devices are tested according to /EN 1155:1997/A1:2002/AC:2006/ – Building hardware. The door coordinator and electro-mechanical hold-open devices according to /EN 1158:1997/A1:2002/AC:2006/ – Building hardware. The CE mark for building products is available.

2.2 Application

The door closer system can be used for interior and exterior applications. It is applicable for single- and double leaf doors, as well as fire and smoke doors. Examples of use are interior doors, public buildings and office buildings.

2.3 Technical Data

Technical data for the TS 98 XEA, GSR-EMR 1 XEA, EMR 2 XEA and EMR 1G XEA and TS 98 XEA GSR-EMR 2 XEA BG:

Technical data	
Connection voltage	230 V AC ± 10%
Operating voltage (internal)	24 V DC
max. rated power output	9.8 W
Power input EMR 1	1.4 W
EMR 2	2.8 W
Duty cycle	100% CDF
Release torque	Adjustable

The slide channel GSR-EMR 2 has the following operational energy use (B6):

	GSR-EMR 2 XEA
Electricity consumption	29.78 kWh / year
Days per year in use	365 days
Hours per day in on mode	24 h
Power consumption on mode	3.4 W

Application rules for the placing on the market:

TS 98 XEA GSR-EMR 2

Slide channel door closer according to /EN 1154/, with CE mark, in XEA design, including rapidly decreasing opening torque for easy door opening according to /DIN SPEC 1104/. Installation types: Normal installation, push side. Closing speed, 2. 15°–0° doorway, latching speed (SoftFlow), hydraulically controlled opening dampening and delayed closing can be comfortably adjusted from the front via a valve. EN 1–6 closing force can be configured from the front using a cordless screwdriver, includes visual closing force indicator. Installation console with universal hole pattern system. Suitable for DIN-L and DIN-R. Smoke detector with operation and maintenance display integrated flush in the closing sequence control's housing. Connectors are available for additional detectors, an external manual trigger, and potential-free alarm contact. Connection voltage 230 V AC, operating voltage 24 V DC. Slide channel with integrated, mechanical closing sequence control, tested according to /EN 1158/. Electromechanical hold-open device in active and inactive leaf, 24 V DC, tested according to /EN 1155/ and /EN 14637/. Hold-open position (80°–120°) and release force can be adjusted. The closing sequence is controlled via a thrust-rod clamping system, which is independent of the door closer hydraulic system, with overload protection and continuous cover, installation height 30 mm. Suitable for DIN-L and DIN-R. General building approval by Deutsches Institut für Bautechnik /DIBt/, Berlin as a hold-open system.

2.4 Delivery status

The declared slide channel GSR - EMR 2 XEA will be supplied with a weight of 4.88 kg and the following dimensions:

Dimensions	GSR-EMR 2 XEA	Packaging
Length (mm)	327	400
Width (mm)	59	195
Height (mm)	60	90

2.5 Base materials / Ancillary materials

For the declared slide channel GSR-EMR 2 XEA including packaging, the following material proportions result in mass % of the various basic materials in kg:

Constituents	GSR-EMR 2 XEA	Mass proportion
Aluminum	1.87	38.4%
Steel	1.53	31.4%
Paper/Cardboard	0.52	10.7%
Zinc Die Cast	0.47	9.6%
Plastics	0.31	6.4%
Electronics	0.14	2.9%
Other	0.04	0.8%
Oil	0.01	0.1%

The product GSR-EMR 2 XEA including:

- A slide channel
- An integrated door coordinator
- An electromechanical hold open unit
- An integrated smoke detector and power pack

Contains substances of the candidate list (date: 31.05.2019) above 0.1 mass percent 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>.

2.6 Manufacture

A. Slide channel

Delivery of the slide channel profile in Ennepetal, sawing and assembly of the slide channel components (slider, fixing pieces, screws)

B. Slide channel lever

Delivery of the slide channel "eye" in Ennepetal is followed by degreasing, punching, perforating, embossing, polishing, welding, galvanizing and painting the finished slide channel lever.

D. Packaging

- Packing the slide channel (grey board)
 - Packing the screws (PE pouch bag)
- The certified Quality Management system in accordance with /ISO 9001/ ensures the high quality standard of dormakaba products.

2.7 Environment and health during manufacturing

No health protection measures beyond the legally specified measures are required.

The maximum allowable concentrations are clearly complied with at each point of production.

- Air: Waste air generated during production is cleaned in accordance with statutory specifications. Emissions are significantly below the Technical Instructions on Air Quality "TA Luft".
- Water/Ground: No contamination of water or ground. Production-related wastewater is treated internally and redirected to the production process.
- Sound protection analyses have established that all values communicated inside and outside the production facilities are far below the standards applicable in Germany.

The Environment Management system in the dormakaba production facilities Ennepetal is certified to /ISO 14001/; industrial safety is certified to /OHSAS 18001/.

2.8 Product processing/Installation

dormakaba door closers are installed by independent installers.

2.9 Packaging

Packaging contains the following materials in kg:

Constituents	GSR-EMR 2 XEA	Mass proportion
Paper/Cardboard	0.521	99.8%
PE plastic	0.001	0.2%

2.10 Condition of use

Product maintenance is not required if used as designated. During the installation of a GSR-EMR 2 XEA, the standard safety regulations must be complied with and the provisions of the professional liability associations observed.

2.11 Environment and health during use

There are no known impact relations between product, environment and health during use.

2.12 Reference service life

The dormakaba GSR-EMR 2 complies with /EN 1155/ and /EN 1158/. All product components are tested according to 500.000 closing cycles. This corresponds with approx. 25,000 closing cycles per year. The typical reference service life is 20 years.

2.13 Extraordinary effects

Fire

In accordance with /EN 1154/, Annex A; /EN 1155/ and /EN 1158/ Annex B the door closer, the electrically powered hold-open device and the door coordinator complies, with the requirements for usage on fire resistance and/or smoke control door sets

Fire protection

Name	Value
Building material class	Not applicable
Burning droplets	Not applicable
Smoke gas development	Not applicable

Water

GSR-EMR 2 has an /IP/ 30 protection. This means that there is no liquid ingress protection. In the case of water ingress, the basic mechanical function is retained, but the smoke detector and the electrical hold open device are no longer functional.

Mechanical destruction

No environmental hazard is associated with mechanical destruction.

2.14 Re-use phase

With reference to the material composition of the product system following possibilities arise:

Re-use

During refurbishment or de-construction, door closers can be easily segregated and re-used for the same application.

Material recycling

The metallurgical materials contained in the materials are suitable for material recycling.

Energy recovery

The plastics contained in the materials are suitable for energetic recovery.

Landfilling

As the product contains lubricants and hydraulic oil, landfilling is not possible.

2.15 Disposal

Cuttings incurred during the manufacturing phase are directed towards metallurgical recycling and energy recovery. Cuttings are collected separately and collected by a disposal company. Following European Waste Catalogue Codes are relevant:

- /EWC/ 07 02 03 Plastic waste
- /EWC/ 12 01 01 Ferrous metal filings and turnings
- /EWC/ 12 01 03 Non-ferrous metal filings and turnings

Packaging

Packaging incurred for installation in the building is directed towards energy recovery.

- /EWC/ 15 01 01 Paper and cardboard packaging
- /EWC/ 15 01 02 Plastic packaging

End of Life

All materials are directed to energy recovery or metallurgical recycling.

- /EWC/ 17 02 03 Plastics
- /EWC/ 17 04 01 Copper, bronze, brass
- /EWC/ 17 04 02 Aluminum
- /EWC/ 17 04 05 Iron and steel

2.16 Further information

More information on dormakaba products available from:

dormakaba Deutschland GmbH
DORMA Platz 1
58256 Ennepetal
Germany
Tel.: +49 (0) 2333 793-0
Internet: www.dormakaba.com

3. LCA: Calculation rules

3.1 Declared Unit

The declaration represents 1 slide channel GSR-EMR 2, consisting of the following items:

- A slide channel
- An integrated door coordinator
- An electro-mechanical hold-open device
- An integrated smoke detector and power pack

Declared unit

Name	Value	Unit
Declared unit	1	piece/product
Mass of declared Product	4.881	kg
Conversion factor to 1 kg	0.205	-
conversion factor [Mass/Declared Unit]	4.881	-

3.2 System boundary

Type of the EPD: cradle to gate - with options

Modules A1-3, A4, and A5

The product stage (A1-3) begins with considering the production of the necessary raw materials and energies, including all corresponding upstream chains and the actual procurement transports. Furthermore, the entire manufacturing phase was mapped, including the treatment of production waste until the end-of-waste status (EoW) was reached. In addition, both the distribution transports from Ennepetal (Germany)(A4) and the packaging waste generated during installation (A5) were taken into account. Product losses, as well as power consuming tools, auxiliary materials, and installation materials were not considered in A5.

Modules C2-C3

The modules include the environmental impacts for the treatment of the waste categories until end-of-waste status (EoW) is reached, including the associated transports at the end of the product life cycle.

Module B6

Module B6 includes the operational energy use over the Reference Service Life of 20 years.

Module D

Identification of the benefits and costs of the product outside the system boundary. For plastics, these consist of energy credits from thermal utilization (C3) in the form of the average European electricity mix or thermal energy from natural gas. Recycling of metal scrap results in credits of the respective raw materials.

3.3 Estimates and assumptions

It was assumed that End of Life thermal waste incineration plants are plants with an R1 factor (energy conversion efficiency or energy efficiency of waste incineration plants according to the European Waste Framework Directive) >0.6.

3.4 Cut-off criteria

The effect associated with the neglected mass shares is less than 5% of the effect categories per module.

The minimum limit of 1% total mass and the use of renewable and non-renewable primary energy is not exceeded.

Due to the small quantity and inadequate background data, the Iglidur input (material input 0.1% in relation to the total mass input) were cut off.

3.5 Background data

The LCA software /umberto LCA+ Version 10.0/ was used to model the life cycle. The entire manufacturing process, as well as the energy consumption, were modelled on the basis of manufacturer-specific data. However, generic background datasets were used for the upstream and downstream processes. The majority of the background datasets used were taken from the current version of the /GaBi 9.2/ database. /Ecoinvent/ datasets were only used for substances which in any

case have only a very small mass fraction and could theoretically be excluded.

The datasets contained in the databases are documented online. Where possible, German datasets were used for modules A1-A3, and the corresponding European datasets for distribution transports (A4) and disposal scenarios (C modules).

3.6 Data quality

The background datasets used for accounting purposes originate from the respective updated /GaBi 9.2/ databases at the time of calculation.

The data for the examined products was captured on the basis of evaluations of internal production and environmental data, the collection of LCA-relevant data within the supply chain, as well as the evaluation of relevant data for the energy supply. The collected data were checked for plausibility and consistency. Good representativity can be assumed.

3.7 Period under review

The life cycle assessment data were collected for the 2018 observation period.

3.8 Allocation

All required energies, raw materials, and supplies could be clearly assigned to the declared product. No by-products are produced and no allocation is required.

In module A1-A3, credits are issued for recycling of metallurgical waste. Packaging materials and the combustible product parts are incinerated at the end of life in a waste incineration plant. Metallurgical parts are recycled. Any emissions that occur are taken into account in the model. Depending on their elementary composition and the resulting heating values, credits for recycling are taken into account in module D

3.9 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 background database used is /GaBi 9.2/ Service Pack 39.

4. LCA: Scenarios and additional technical information

Transport to the building site (A4)

Name	Value	Unit
Transport distance (Lorry)	631	km
Capacity utilization (including empty runs)	61	%
Transport distance (Container Ship)	214	km

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site	0.522	kg

Reference service life

Name	Value	Unit
Reference service life (according to /BNB/)	20	a

Operational energy use (B6) and Operational water use (B7)

Name	Value	Unit
Electricity consumption (year)	29.78	kWh

End of life (C1-C4)

Name	Value	Unit
Collected separately	4.352	kg
Recycling	3.935	kg
Energy recovery	0.417	kg

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

Metals are used for recycling, plastics and packaging for energy recovery. The resulting credits are allocated in Module D.

Name	Value	Unit
Materials for energy recovery	0.411	kg
R1-factor	>60	%
Lower calorific value	43	MJ/kg

5. LCA: Results

The following table declares the results of the LCA for 1 piece slide channel GSR-EMR 2. The results of the LCA for the variants (G-EMR, GSR, G-EMR, GSR-EMF 2) can be found in the attachment.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

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	MND	X	X	MND	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 piece slide channel GSR-EMR 2

Parameter	Unit	A1-A3	A4	A5	B6	C2	C3	D
GWP	[kg CO ₂ -Eq.]	1.07E+1	2.51E-1	7.47E-1	2.50E+2	4.00E-2	1.10E+0	-2.49E+0
ODP	[kg CFC11-Eq.]	8.81E-8	4.08E-17	1.79E-16	6.94E-12	9.98E-18	1.99E-11	-1.30E-14
AP	[kg SO ₂ -Eq.]	4.02E-2	1.42E-3	1.75E-4	7.03E-1	1.72E-4	2.91E-4	-5.33E-3
EP	[kg (PO ₄) ³⁻ -Eq.]	4.81E-3	2.98E-4	3.44E-5	6.58E-2	4.34E-5	6.45E-5	-4.36E-4
POCP	[kg ethene-Eq.]	3.34E-3	-3.87E-4	2.66E-6	4.47E-2	-6.32E-5	1.68E-5	-7.95E-4
ADPE	[kg Sb-Eq.]	1.06E-3	1.87E-8	1.37E-8	7.90E-5	3.54E-9	4.50E-8	-6.14E-4
ADPF	[MJ]	1.45E+2	3.38E+0	2.70E-1	2.66E+3	5.44E-1	2.97E-1	-2.78E+1

Caption: 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

RESULTS OF THE LCA - RESOURCE USE: 1 piece slide channel GSR-EMR 2

Parameter	Unit	A1-A3	A4	A5	B6	C2	C3	D
PERE	[MJ]	2.24E+1	1.87E-1	1.89E+1	1.80E+3	3.25E-2	6.10E-2	-4.58E+0
PERM	[MJ]	1.89E+1	0.00E+0	-1.89E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	[MJ]	4.13E+1	1.87E-1	4.49E-2	1.80E+3	3.25E-2	6.10E-2	-4.58E+0
PENRE	[MJ]	1.44E+2	3.39E+0	3.57E-1	4.48E+3	5.46E-1	1.55E+1	-3.21E+1
PENRM	[MJ]	1.52E+1	0.00E+0	-5.16E-2	0.00E+0	0.00E+0	-1.51E+1	0.00E+0
PENRT	[MJ]	1.59E+2	3.39E+0	3.05E-1	4.48E+3	5.46E-1	3.34E-1	-3.21E+1
SM	[kg]	3.40E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
RSF	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	[m ³]	8.01E-2	3.16E-4	2.17E-3	2.13E+0	5.47E-5	2.54E-3	-9.85E-3

Caption: 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

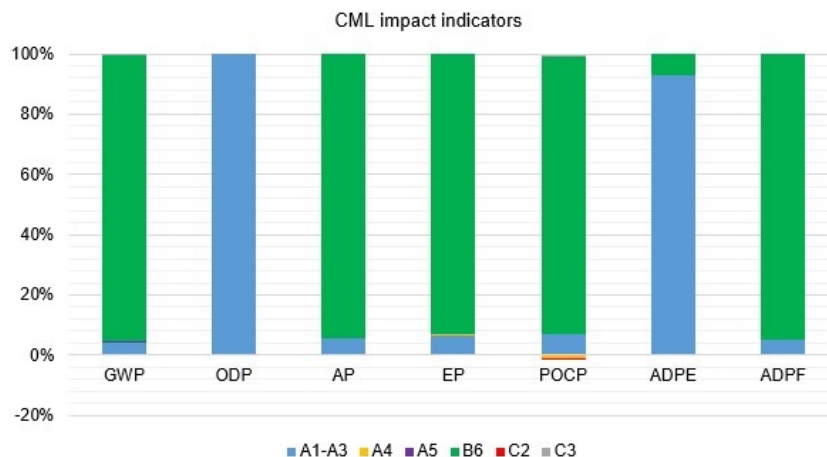
RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES:

1 piece slide channel GSR-EMR 2

Parameter	Unit	A1-A3	A4	A5	B6	C2	C3	D
HWD	[kg]	1.93E-4	1.79E-7	4.10E-9	2.14E-6	3.03E-8	1.15E-9	-1.49E-6
NHWD	[kg]	1.10E+0	2.62E-4	2.32E-2	3.26E+0	4.60E-5	5.22E-2	1.12E-1
RWD	[kg]	4.24E-3	4.57E-6	1.40E-5	7.22E-1	1.12E-6	1.47E-5	-1.87E-3
CRU	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	[kg]	9.59E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.93E+0	0.00E+0
MER	[kg]	0.00E+0	0.00E+0	5.22E-1	0.00E+0	0.00E+0	4.17E-1	0.00E+0
EEE	[MJ]	0.00E+0	0.00E+0	1.13E+0	0.00E+0	0.00E+0	2.23E+0	0.00E+0
EET	[MJ]	0.00E+0	0.00E+0	2.04E+0	0.00E+0	0.00E+0	4.26E+0	0.00E+0

Caption: 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; EEE = Exported thermal energy

6. LCA: Interpretation



Apart from ODP and ADPE, all /CML/ indicators are significantly dominated by Module B6. This is due to the electricity mix used for the operation of the slide channel.

In A1-A3, **GWP** is dominated by steel (37 %) and aluminum (33 %).

ODP is dominated by the paper required for packaging.

AP from the module A1-A3 is dominated by steel (31 %), aluminum (27 %) and electronics (21 %).

Paper dominates the **EP** in module A1-A3 (48 %), followed by steel (21 %), aluminum (16 %) and electronics (11 %).

POCP in module A1-A3 is dominated by steel (41 %), aluminum (32 %) and the electronics (17 %).

ADPE is dominated by zinc (58 %), electronics (26 %) and steel (11 %).

ADPF in A1-A3 is dominated by aluminum (30 %), steel (25 %), plastics and rubber (20 %) and electronics (10 %).

7. Requisite evidence

This Environmental Product Declaration does not require any evidence relating to the material composition of the product and its area of applicability.

8. References

/IBU 2016/

IBU (2016): General Programme Instructions for the Preparation of EPDs at the Institut Bauen und Umwelt e.V., Version 1.1 Institut Bauen und Umwelt e.V., Berlin.
www.ibu-epd.de

/ISO 14025/

DIN EN /ISO 14025:2011-10/, Environmental labels and declarations — Type III environmental declarations — Principles and procedures

/EN 15804/

/EN 15804:2012-04+A1 2013/, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

/DIN SPEC 1104/

2009-12: Building hardware - Door fittings for use by children, elderly and disabled people in domestic and public buildings - A guide for specifiers; German version CEN/TR 15894:2009

/EN 1154/

DIN EN 1155: 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 1158/

DIN EN 1158: 2003-04: Building hardware – Door coordinator devices – Requirements and test methods (includes amendment A1:2002); German version /EN 1158:1997 + A1:2002/

/EN 14637/

DIN EN 14637: 2008-01: Building hardware - Electrically controlled hold-open systems for fire/smoke door assemblies - Requirements, test methods, application and maintenance; German version /EN 14637:2007/

/ISO 9001/

DIN EN ISO 9001: 2015-11: Quality Management

Systems – Requirements; German version
EN ISO 9001:2015

/ISO 14001/

DIN EN ISO 14001: 2015-11: Environmental management systems – Requirements with guidance for use; German version EN ISO 14001:2015

/BNB/

Nutzungsdauern von Bauteilen für Lebenszyklusanalysen nach Bewertungssystem Nachhaltiges Bauen (BNB), https://www.nachhaltigesbauen.de/fileadmin/pdf/baustoff_gebauededaten/BNB_Nutzungsdauern_von_Bauteilen_2017-02-24.pdf (as of 24.02.2017)

/CML/

Impact indicators of the Centrum voor Milieukunde (CML) of the University of Leiden

/DIBt/

Deutsches Institut für Bautechnik, <https://www.dibt.de>

/ECHA/

Candidate List of Substances of Very High Concern for Authorisation (ECHA Candidate List), 16.07.2019, published in accordance with Article 59(10) of the REACH Regulation Helsinki: European Chemicals Agency, <https://echa.europa.eu/de/home>.

/Ecoinvent/

Database for life cycle assessment (life cycle inventory data), Version 2.2 Swiss Centre for Life Cycle Inventories, St. Gallen, 2010.

/EWC/

European Waste Catalogue (EWC). Commission Decision on the European List of Waste (COM 2000/532/EC)

/GaBi 9.2/

Life cycle engineering (GaBi) software and database. LBP, University of Stuttgart and thinkstep AG, Documentation of GaBi 9.2 data sets <http://documentation.gabi-software.com/>, 2019.

/IP/

Ingress Protection Rating. DIN EN 60529; VDE 0470-1:2014-09: Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989 + A1:1999 + A2:2013); German version EN 60529:1991 + A1:2000 + A2:2013

/Product Category Rules Part A/

Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report. Version 1.8 (04.07.2019)

/Product Category Rules Part B/

PCR Guidance-Texts for Building-Related Products and Services; Part B: Requirements on the EPD for Building Hardware Products, 2016-02

/OHSAS 18001/

2007: Occupational health and safety – Management systems – Requirements

/umberto LCA+ Version 10.0/

ifu Hamburg GmbH, <https://www.ifu.com>, 2019.

**Publisher**

Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Tel +49 (0)30 3087748- 0
Fax +49 (0)30 3087748- 29
Mail info@ibu-epd.com
Web www.ibu-epd.com

**Programme holder**

Institut Bauen und Umwelt e.V.
Panoramastr 1
10178 Berlin
Germany

Tel +49 (0)30 - 3087748- 0
Fax +49 (0)30 - 3087748 - 29
Mail info@ibu-epd.com
Web www.ibu-epd.com

brands & values[®]
sustainability consultants

**Author of the Life Cycle
Assessment**

brands & values GmbH
Vagtstr. 48/49
28203 Bremen
Germany

Tel +49 421 696867 15
Fax +49 421 696867 16
Mail info@brandsandvalues.com
Web www.brandsandvalues.com

dormakaba

Owner of the Declaration

dormakaba International Holding AG
Hofwissenstr. 24
8153 Rümlang
Switzerland

Tel +41 44 818 90 11
Fax +41 44 818 90 18
Mail info@dormakaba.com
Web www.dormakaba.com