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-20210279-CBA2-EN
Issue date	22/10/2021
Valid to	15/08/2027

ALT 50

dormakaba

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

www.ibu-epd.com | https://epd-online.com

General Information

dormakaba

Programme holder

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

Declaration number

EPD-DOR-20210279-CBA2-EN

This declaration is based on the product category rules:

Room partition systems, 01/08/2021
(PCR checked and approved by the SVR)

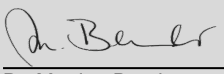
Issue date

22/10/2021

Valid to

15/08/2027

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



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

ALT 50

Owner of the declaration

dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

Declared product / declared unit

1 specific Room Partition System (1 system with a size of 9 m²)

Scope:

This EPD refers to the specific Room Partition System: ALT 50. This system is manufactured by dormakaba.

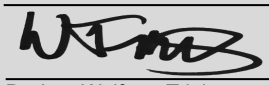
The system componets are: base profiles, seals and accessories. Panes are not included in this EPD.

The year of data collection is 2020.
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 bezeichnet*.

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

Retrofittability and deconstructability - These are just two of the convincing attributes which dormakaba's Room Partition Systems have in common. Narrow aluminum profiles frame glass panels or other partitioning material, thus creating new rooms in available space. Integrated doors, whether pivoting or sliding, provide access while locking systems ensure the desired security.

dormakaba introduces ALTERRA demountable partition systems which are versatile and opento infinite possibilities. The design flexibility of the profiling system, allows seamlessintegration with concealed hardware, electroniclocks with BLE Technology and thereby enablessmart access control within any premises. ALTERRA profile systems enable retrofitting in existing office spaces with minimal alterations. Hospitality, commercial, retail and residentialspaces also will benefit from upgraded andmodern interiors with ALTERRA profile systems. ALTERRA systems are your one-stop solution for customized interiors with end-to-end design support, a complete bouquet of all types ofdormakaba hardware and quick turnaround. The systems are produced in Chennai (India). For the use and application of ALTERRA, the following standards apply:

- *ISO 10140-2 / ASTM - E 90 ASTM E-413*
- *BS 5234-2 & EN1991-1-1*

Application

Room Partition Systems can be used for:

- Offices
- Banks
- Insurance companies
- Hotels
- Schools
- Universities
- Gyms
- Hospitals
- Nursing homes
- Residential

Technical Data

The declared product (9 m² and 23,77 m profiles) has the following technical properties:

Name	Value	Unit
Total system measurements	h = max. 3000	mm
Intermediate fixed panel	w = min. 500, max. 1200 / h = max. 3000	mm
Wall mounted fixed panel	w = min. 500, max. 1200 / h = max. 3000	mm
Panel material	Glass (TSG, LSG), timber panel (10-13.5mm)	
Sound protection test acc. to DIN EN ISO 10140	up to 31	dB
Structural analysis / Proof of stability acc. to	EN 1991-1-1:2002	
Maximum door weight including all fittings for glass doors	100	kg
Frame height	up to 3000	mm
Frame width	up to 1200	mm
Additional requirements for safety barriers with glass acc.to EN 1991-1-1:2002, BS 5234-2:1992	Category of Use II	
Airborne sound reduction	up to 31	dB
Thermal conductivity	200	W/(mK)
Maximum console load acc. to DIN 4103-1	400	N/m
Maximum horizontal load acc. to DIN 4103-1	400	N/m
Weight of wall load	0,5	KN/m2

For the Room Partition Systems, no legal provisions for harmonisation of the EU exist.

Base materials/Ancillary materials

The composition of the product is the following:

- Base profiles: 87%
- Seals: 10%
- Acessories: 3%

The product/s include/s partial articles which contain substances listed in the Candidate List of *REACH* Regulation *1907/2006/EC* (date: 08.07.2021) exceeding 0.1 percentage by mass: no

Environment and health during use

Reference service life

The reference service life amounts to 30 years (see table of *Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR)*).

LCA: Calculation rules

Declared Unit

The declared unit is 1 specific Room Partition System (9 m^2): ALT 50

Declared unit

Name	Value	Unit
Declared unit	9	m^2
Conversion factor to 1 kg	0.53	-
Declared unit	1	system
Weight per system	18,84	kg
Area	9	m²
Length of profiles	23,77	m

For IBU core EPDs (where clause 3.6 is part of the EPD): for average EPDs, an estimate of the robustness of the LCA

values must be made, e.g. concerning variability of the production process, geographical representativeness and the influence of background data and preliminary products compared to the environmental impacts caused by actual production.

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)

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: India

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 ts, SP40.

LCA: Scenarios and additional technical information

Characteristic product properties
Information on biogenic carbon

The biogenic carbon content quantifies the amount of biogenic carbon in a construction product leaving the factory gate, and it shall be separately declared for the product and for any accompanying packaging.
If the total mass of biogenic carbon containing materials is less than 5 % of the total mass of the product and accompanying packaging, the declaration of biogenic carbon content may be omitted. The mass of packaging containing biogenic carbon shall always be declared.

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO2.

Information on describing the biogenic Carbon Content on biogenic Carbon

Name	Value	Unit
Biogenic Carbon Content in accompanying packaging	0,80	kg C

The following technical scenario information is required for the declared modules

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	0.057	l/100km
Transport distance	100	km
Capacity utilisation (including empty runs)	55	%

Installation into the building (A5)

Name	Value	Unit
Waste packaging (Paper)	2,2	kg
Waste packaging (Plastic)	0,02	kg

In case a **reference service life** according to applicable ISO standards is declared then the assumptions and in-use conditions underlying the determined RSL shall be declared. In addition, it shall be stated that the RSL applies for the reference conditions only.

The same holds for a service life declared by the manufacturer. Corresponding information related to in-use conditions needs not be provided if a service life taken from the list on service life by BNB is declared.

End of life (C1-C4)
C1: The product dismantling from the building is done manually without environmental burden.
C2: Transport to waste treatment at end of life is 50km.

Name	Value	Unit
Recycling	16.89	kg
Energy recovery	2.13	kg
Transportation	50	km

Reuse, recovery and/or recycling potentials (D), relevant scenario information
Collection rate is 100%.

LCA: Results

Disclaimer:
EP-freshwater: This indicator has been calculated as 'kg P eq' as required in the characterization model (EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe; http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml).

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = 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 Room Partition System - ALT 50 (9 m²)

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	3.99E+02	1.8E-01	3.17E+00	0	8.3E-02	5.42E+00	1.82E-05	-1.02E+02
GWP-fossil	kg CO_2 eq	4.01E+02	1.72E-01	1.29E-01	0	7.94E-02	5.42E+00	1.81E-05	-1.01E+02
GWP-biogenic	kg CO_2 eq	-3.53E+00	7.96E-03	3.04E+00	0	3.67E-03	1.26E-04	6.18E-08	-3.18E-01
GWP-luluc	kg CO_2 eq	5.79E-01	4.1E-06	5.42E-05	0	1.86E-06	3.06E-04	5.21E-08	-1.9E-02
ODP	kg CFC11 eq	2.53E-11	1.82E-17	5.88E-16	0	8.38E-18	2.73E-15	6.71E-20	-8.07E-10
AP	mol H^+ eq	4.25E+00	1.72E-04	8.83E-04	0	7.94E-05	9.65E-04	1.3E-07	-3.83E-01
EP-freshwater	kg P eq	3.54E-04	3.68E-08	1.14E-07	0	1.7E-08	4.36E-07	3.11E-11	-5.25E-05
EP-marine	kg N eq	5.18E-01	5.48E-05	3.17E-04	0	2.53E-05	2.18E-04	3.34E-08	-5.03E-02
EP-terrestrial	mol N eq	5.68E+00	6.1E-04	3.97E-03	0	2.81E-04	4.4E-03	3.67E-07	-5.47E-01
POCP	kg NMVOC eq	1.58E+00	1.55E-04	8.42E-04	0	7.15E-05	6.02E-04	1.01E-07	-1.58E-01
ADPE	kg Sb eq	1.24E-04	5.16E-09	9.23E-09	0	2.38E-09	3.75E-08	1.62E-12	-7.04E-05
ADPF	MJ	4.33E+03	2.44E+00	1.01E+00	0	1.13E+00	2.51E+00	2.37E-04	-1.47E+03
WDP	m^3 world eq deprived	3.54E+01	3.37E-04	3.92E-01	0	1.56E-04	5.54E-01	1.9E-06	-5E+00

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 Room Partition System - ALT 50 (9 m²)

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	6.54E+02	7.7E-03	2.66E+01	0	3.55E-03	6.68E-01	3.11E-05	-6.98E+02
PERM	MJ	2.64E+01	0	-2.64E+01	0	0	-1.43E-02	0	0
PERT	MJ	6.8E+02	7.7E-03	1.85E-01	0	3.55E-03	6.54E-01	3.11E-05	-6.98E+02
PENRE	MJ	4.31E+03	2.44E+00	1.87E+00	0	1.13E+00	1.55E+01	2.37E-04	-1.47E+03
PENRM	MJ	1.39E+01	0	-8.6E-01	0	0	-1.3E+01	0	0
PENRT	MJ	4.33E+03	2.44E+00	1.01E+00	0	1.13E+00	2.51E+00	2.37E-04	-1.47E+03
SM	kg	3.38E-01	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	1.51E+00	1.38E-05	9.23E-03	0	6.37E-06	1.33E-02	5.98E-08	-1.22E+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 Room Partition System - ALT 50 (9 m²)

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	4.74E-05	2.37E-10	1.54E-09	0	1.09E-10	9.58E-09	3.62E-12	-8.35E-07
NHWD	kg	7.12E+01	2.5E-04	1.03E-01	0	1.15E-04	5.63E-01	1.19E-03	-2.71E+01
RWD	kg	5.73E-02	2.62E-06	5.26E-05	0	1.21E-06	9.33E-05	2.7E-09	-1.65E-01
CRU	kg	0	0	0	0	0	0	0	0

MFR	kg	0	0	0	0	0	1.69E+01	0	0
MER	kg	0	0	0	0	0	0	0	0
EEE	MJ	0	0	4.81E+00	0	0	0	0	0
EET	MJ	0	0	8.77E+00	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 Room Partition System - ALT 50 (9 m²)

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	6.94E-05	9.06E-10	4.95E-09	0	4.18E-10	1.23E-08	1.61E-12	-6.21E-06
IR	kBq U235 eq	7.47E+00	3.75E-04	8.09E-03	0	1.73E-04	8.4E-03	2.78E-07	-3.34E+01
ETP-fw	CTUe	1.06E+03	1.73E+00	4.76E-01	0	7.98E-01	9.43E-01	1.36E-04	-5.54E+02
HTP-c	CTUh	6.66E-07	3.26E-11	2.55E-11	0	1.5E-11	8.16E-11	2.01E-14	-2.93E-08
HTP-nc	CTUh	3.36E-06	1.39E-09	1.15E-09	0	6.42E-10	8.27E-09	2.21E-12	-7.26E-07
SQP	SQP	1.15E+03	6.27E-03	2.68E-01	0	2.89E-03	7.53E-01	4.95E-05	-4.87E+01

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 nor 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 fossil resources', 'abiotic depletion potential for non-fossil resources', 'water (user) deprivation potential', 'deprivation-weighted water consumption', 'potential comparative toxic unit for ecosystems', 'potential comparative toxic unit for humans - cancer effects', 'potential comparative toxic unit for humans – non-cancer effects', 'potential soil quality index'.
The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

References

Standards

EN 15804

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

EN 15804

EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

ISO 14025

EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

Further References

Title of the software/database

Title of the software/database. Addition to the title, version. Place: Publisher, Date of publication [Access on access date].

IBU 2021

Institut Bauen und Umwelt e.V.: 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

ASTM - E 90 ASTM E-413
Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

BBSR
Nutzungsdauern von Bauteilen für Lebenszyklusanalysen nach Bewertungssystem Nachhaltiges Bauen (BNB), 24.02.2017, www.nachhaltigesbauen.de.

BS 5234-2:1992
Specification for performance requirements for strength and robustness of Partitions.

EN 1191:2013/2002
Windows and doors - Resistance to repeated opening and closing - Test method.

EN 15804:2019+A2
EN 15804:2019+A2 (in press), Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
Regulation (EC) No 1907/2006 (date: 19.01.2021) of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Further References

European Chemicals Agency (ECHA)
https://echa.europa.eu/de/

GaBi ts documentation
GaBi life cycle inventory data documentation (https://www.gabisoftware.com/support/gabi/gabidatabase- 2020-lci-documentation/).

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.

IBU
Institut Bauen und Umwelt e.V.: General Programme Instructions for the Preparation of EPDs at the Institut Bauen und Umwelt e.V. Version 1., Berlin: Institut Bauen und Umwelt e.V., 2016. www.ibu-epd.com.

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, 2019.

Publisher

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

+49 (0)30 3087748- 0
info@ibu-epd.com
www.ibu-epd.com

Programme holder

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

+49 (0)30 3087748- 0
info@ibu-epd.com
www.ibu-epd.com

Author of the Life Cycle Assessment

Sphera Solutions GmbH
Hauptstraße 111- 113
70771 Leinfelden-Echterdingen
Germany

+49 711 341817-0
info@sphera.com
www.sphera.com

Owner of the Declaration

dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

+49 2333 793-0
info.de@dormakaba.com
www.dormakaba.com