ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	DORMA Hüppe Raumtrennsysteme GmbH
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DHR-20260057-CBA1-EN
Issue date	06/03/2026
Valid to	05/03/2031

Movable Wall System Variflex Glass

DORMA Hüppe

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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General Information

DORMA Hüppe

Programme holder

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

Declaration number

EPD-DHR-20260057-CBA1-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

06/03/2026

Valid to

05/03/2031

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

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

Movable Wall System Variflex Glass

Owner of the declaration

DORMA Hüppe Raumtrennsysteme GmbH
Industriestraße 5
26655 Westerstede/ Ocholt
Germany

Declared product / declared unit

1 m^2 of the Movable Wall System Variflex Glass consisting of the following items:

- Wall element
- Glass panes

Scope:

This Environmental Product Declaration refers to Movable Wall System Variflex Glass manufactured by DORMA Hüppe. The production site is located in Westerstede / Ocholt (Germany).

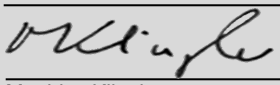
Green electricity with Guarantee of Origin (GoO) is being used at this production site.

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			
☐	internally	☒	externally



Matthias Klingler,
(Independent verifier)

Product

Product description/Product definition

Variflex Glass is a movable wall system designed to provide both transparency and sound insulation. The system enables room partitioning while achieving sound insulation values of up to R_w 52 dB (tested according to *EN 10140*, laboratory measurement). The system can be combined with Variflex 100 elements, ensuring compatibility and a consistent design appearance. Options such as switchable glass or integrated blinds allow adjustable levels of visual screening. The extension configuration permits an all-glass design, including corner elements. For the use and application of the product the respective national provisions at the place of use apply:

- *DIN 18032-3*
- *EN 16516*
- *ISO 6946*
- *ISO 10140*
- *ISO 22196*
- *2001/118/EC*
- *AgBB 2024*
- *WECOBIS 2012*

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

Application

Areas of application include:

- Offices
- Hotels
- Conference centers
- Trade fairs
- Schools
- Religious institutions
- Ateliers

Technical Data

The Movable Wall System Variflex Glass has following technical properties:

Name	Value	Unit
Sound reduction index to ISO 10140	52	dB

Performance data of the product with respect to its characteristics in accordance with the relevant technical provision which can be applied are mentioned above.

This EPD follows the additional requirements for construction products considered as electronic or electric equipment.

Base materials/Ancillary materials

The major material composition of the product is listed below:

Name	Value	Unit
Glass	84	%
Aluminium	12	%
Steel	2	%
Plastics	1	%
Electronics	1	%

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: no

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

Manufacture

The manufacturing process primarily consists of short-line andlong line assembly operations. Key stages include frame layup, frame assembly, trimming, inspection, and final packaging. The specific manufacturing steps and processes may vary depending on the product configuration.

Reference service life

The reference service life of the Variflex Glass is about 25 years, depending on the application and frequency of use. For repairs and renewals, suitable spare parts are available. The Variflex Glasss is designed to withstand a minimum of 1250 cycles (approx. 50 closing cycles per year).

LCA: Calculation rules

Declared Unit

The declared unit is 1 m^2 of the product: Movable Wall System Variflex Glass

Name	Value	Unit
Declared unit	1	m^2
Layer thickness	0.1	m
Grammage	49.28	kg/m^2

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 from hydropower 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, 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	0.001	kg C

Westerstede/Ocholt (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 produced project specific in the DORMA Hüppe factory in Westerstede/Ocholt in Germany. The main distribution regions are 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)	0.03	kg per sqm

Reference service life

Name	Value	Unit
Reference service life	25	a

Operational energy use (B6)

Name	Value	Unit
Electricity consumption for 1 year (per sqm)	0.002	kWh
Days per year in use	50	days
On mode power	35	W
On mode per day	0.001	hrs
Off mode per day	23.99	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	49.3	kg per sqm
Recycling	6.91	kg per sqm
Energy recovery	0.42	kg per sqm
Landfilling	42	kg per sqm

The product is disassembled in a recycling process. Material recycling is then assumed for the metals, and electronics. The plastic components are assumed to be incinerated with energy recovery. Glass and electromechanics are assumed to be 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 kg/sqm Movable Wall System Variflex Glass

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	9.72E+01	5.09E-01	4.84E-03	1.51E-02	0	2.54E-01	1.06E+00	6.34E-01	-3.01E+01
GWP-fossil	kg CO_2 eq	9.64E+01	4.88E-01	9.9E-05	1.49E-02	0	2.44E-01	1.06E+00	6.28E-01	-3E+01
GWP-biogenic	kg CO_2 eq	7.44E-01	2.12E-02	4.74E-03	1.34E-04	0	1.06E-02	-5.73E-06	2E-03	-9.72E-02
GWP-luluc	kg CO_2 eq	3.15E-02	1.9E-05	6.58E-08	2.27E-06	0	9.51E-06	6.82E-05	3.77E-03	-4.71E-03
ODP	kg CFC11 eq	2.56E-10	4.25E-14	5.8E-16	3.39E-13	0	2.12E-14	3.85E-13	1.69E-12	-2.52E-10
AP	mol H^+ eq	7.03E-01	5.37E-04	1.18E-06	2.89E-05	0	2.68E-04	1.79E-04	4.46E-03	-1.15E-01
EP-freshwater	kg P eq	5.34E-05	1.24E-07	1.65E-10	6.2E-08	0	6.21E-08	8.95E-08	1.43E-06	-1.7E-05
EP-marine	kg N eq	1.51E-01	1.92E-04	4.35E-07	7.21E-06	0	9.59E-05	3.95E-05	1.15E-03	-1.5E-02
EP-terrestrial	mol N eq	1.71E+00	2.18E-03	5.42E-06	7.54E-05	0	1.09E-03	8.3E-04	1.26E-02	-1.63E-01
POCP	kg NMVOC eq	3.5E-01	5.62E-04	1.15E-06	1.91E-05	0	2.81E-04	1.1E-04	3.51E-03	-4.75E-02
ADPE	kg Sb eq	1.21E-03	1.26E-08	6.13E-12	2.8E-09	0	6.32E-09	3.48E-09	4.07E-08	-2.35E-04
ADPF	MJ	1.19E+03	6.8E+00	1.31E-03	3.14E-01	0	3.4E+00	5.27E-01	8.28E+00	-4.37E+02
WDP	m^3 world eq deprived	3.3E+01	9.78E-04	5.27E-04	4.13E-03	0	4.89E-04	9.93E-02	7.19E-02	-1.46E+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 kg/sqm Movable Wall System Variflex Glass

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ	4.28E+02	3.27E-02	3.64E-02	2.27E-01	0	1.64E-02	1.9E-01	1.45E+00	-2.11E+02
PERM	MJ	3.6E-02	0	-3.6E-02	0	0	0	0	0	0
PERT	MJ	4.28E+02	3.27E-02	3.57E-04	2.27E-01	0	1.64E-02	1.9E-01	1.45E+00	-2.11E+02
PENRE	MJ	1.18E+03	6.8E+00	1.31E-03	3.14E-01	0	3.4E+00	1.13E+01	8.28E+00	-4.37E+02
PENRM	MJ	1.08E+01	0	0	0	0	0	-1.08E+01	0	0
PENRT	MJ	1.19E+03	6.8E+00	1.31E-03	3.14E-01	0	3.4E+00	5.27E-01	8.28E+00	-4.37E+02
SM	kg	1.89E+00	0	0	0	0	0	0	0	5.09E+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	1.1E+00	3.99E-05	1.24E-05	1.73E-04	0	1.99E-05	2.38E-03	2.19E-03	-3.62E-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 kg/sqm Movable Wall System Variflex Glass

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	3.12E-06	2.1E-10	7.46E-13	4.53E-10	0	1.05E-10	4.29E-10	2.06E-09	-2.05E-07
NHWD	kg	2.63E+01	6.5E-04	1.34E-04	2.59E-04	0	3.25E-04	1.06E-01	4.2E+01	-8.09E+00
RWD	kg	3.84E-02	7.56E-06	6.59E-08	5.01E-05	0	3.78E-06	1.66E-05	8.7E-05	-4.95E-02
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	5.54E+00	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EEE	MJ	1.85E+00	0	6.43E-03	0	0	0	1.59E+00	0	0
EET	MJ	3.34E+00	0	1.17E-02	0	0	0	3.68E+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 kg/sqm Movable Wall System Variflex Glass

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PM	Disease incidence	7.07E-06	4.92E-09	6.51E-12	2.41E-10	0	2.46E-09	2.06E-09	5.59E-08	-1.86E-06
IR	kBq U235 eq	4.71E+00	1.03E-03	1.04E-05	8.25E-03	0	5.17E-04	1.76E-03	1.01E-02	-9.99E+00
ETP-fw	CTUe	1.14E+03	5.04E+00	5.72E-04	9.08E-02	0	2.52E+00	2.02E-01	4.77E+00	-1.02E+02
HTP-c	CTUh	1.26E-07	9.1E-11	3.4E-14	5.1E-12	0	4.55E-11	1.64E-11	1.13E-10	-6.59E-07
HTP-nc	CTUh	7.53E-07	2.86E-09	6.71E-13	7.82E-11	0	1.43E-09	1.24E-09	4.35E-09	-1.71E-07
SQP	SQP	9.37E+01	2.34E-02	3.99E-04	1.32E-01	0	1.17E-02	1.73E-01	2.28E+00	-1.44E+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 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

ECHA
European Chemical Agency

DIN 18032
DIN 18032-3:1997-04, Testing of safety against ball throwing

EN 16516
EN 16516 - 2020-10 Construction products: Testing and evaluation of the release of dangerous substances Determination of emissions into indoor air

ISO 6946
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ISO 10140
ISO 10140-2:2010-12, Acoustics -Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation

ISO 22196
ISO 22196:2011-08 Measurement of anti-bacterial activity on plastic and other non--porous surfaces

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WECOBIS 2012
WECOBIS 2012 Ecological building material information system, German Ministry of Transport, Building and Urban Affairs

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

IBU 2022
General Instructions for the EPD programme of Institut Bauen und Umwelt e.V. Version 2.1, Berlin: Institut Bauen und Umwelt e.V., 2022. 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
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PCR Part A
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Bauen und Umwelt e.V., www.ibu--epd.com.

PCR Part B
PCR – Part B: Requirements on the EPD for Room partition systems, version 08/2021, Institut Bauen und Umwelt e.V., www.ibu--epd.com.

The literature referred to in the Environmental Product Declaration must be listed in full.Standards already fully quoted in the EPD do not need to be listed here again.
The current version of PCR Part A and PCR Part B of the PCR document on which they are based must be referenced.

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