ENVIRONMENTAL PRODUCT DECLARATION

as per /ISO 14025/ and /EN 15804/

Owner of the Declaration	**DORMA Hüppe Raumtrennsysteme + Co. KG**
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DHR-20170168-IBA2-EN
Issue date	12.12.2017
Valid to	11.12.2023

VARIFLEX 88/100 room partition system
Full-wall element variant
DORMA Hüppe Raumtrennsysteme + Co. KG

Institut Bauen und Umwelt e.V.

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

1. General Information

DORMA Hüppe Raumtrennsysteme + Co. KG	VARIFLEX 88/100 full-wall element
Programme holder IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany	**Owner of the Declaration** DORMA Hüppe Raumtrennsysteme + Co. KG Industriestr. 5 26655 Westerstede/Ocholt Germany
Declaration number EPD-DHR-20170168-IBA2-EN	**Declared product / Declared unit** The declared unit is 1m² of the VARIFLEX full-wall element room partition system including packaging materials and excluding the respective edge fasteners and sealants for walls, floors, and ceilings. The variant on which it is based is a full-wall element with direct coating on particle board.
This Declaration is based on the Product Category Rules: Room partition systems, 07.2014 (PCR tested and approved by the SVR)	**Scope:** This Environmental Product Declaration pursues a worst-case approach based on the VARIFLEX 100 variant. Data records are based on the comprehensive financial years of 2016 and 2017 at the production facility in Westerstede/Ocholt in Germany. This document is translated from the German Environmental Product Declaration into English. It is based on the German original version EPD-DHR-20170168-DE. The verifier has no influence on the quality of the translation. 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.
Issue date 12.12.2017	
Valid to 11.12.2023	
Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)	**Verification** The CEN Norm /EN 15804/ serves as the core PCR Independent verification of the declaration according to /ISO 14025/ ☐ internally ☒ externally
Dr. Burkhart Lehmann (Managing Director IBU)	Dr.-Ing. Wolfram Trinius (Independent verifier appointed by SVR)

2. Product

2.1 Product description / Product definition

The VARIFLEX 88/100 room partition system is a horizontally movable sound-insulated partition wall system made of steel and aluminium, comprising individual elements which can be moved independently and display the following features:

- wide variety of design options,
- cover panels suspended acoustically cantilevered,
- element heights of up to 14.5 metres.

The product is not subject to any EU harmonisation guidelines. Application of the products is subject to the respective national guidelines at the place of use.

2.2 Application

The individual elements which can be moved independently are moved to the desired position in ceiling rails. The elements are braced using a spindle mechanism for sound-insulating and stable sealing of the elements towards the floor, wall and ceiling rail. The room partition system offers flexible room utilisation by means of multifunctional and open room design:

- Areas and rooms are partitioned using mobile VARIFLEX 88/100 partition walls.
- Room sizes can be adapted to the respective group size.

- The high degree of sound insulation makes it possible for events to be held in parallel.
- Areas and rooms are utilised more efficiently.

Areas of application include: offices, hotels, conference centres, trade fairs, schools, religious institutions and Ateliers.

2.3 Technical Data

The following table depicts the technical data for the mobile Variflex 88/100 partition walls.

Constructional data

Name	Value	Unit
Sound reduction index to /DIN EN ISO 10140:2010/	39-59	dB
Heat transition coefficient to /DIN EN ISO 6946/	0.4 - 0.59	W/(m²K)
Load from wall weight	0.36-0.59	kN/m²

The product is not subject to any EU harmonisation guidelines.

2.4 Delivery status

The VARIFLEX 88/100 room partition system is manufactured individually to customer demands. The variant on which the EPD is based concerns the following Details:

	VARIFLEX 88	VARIFLEX 100
Element width	1,100 mm	1,100 mm
Element height	3,000 mm	3,000 mm
Element thickness	88 mm	100 mm
Surface area	3.3 m²	3.3 m²
Product weight	113.7 kg	134.6 kg
Packaging	26 kg	26 kg
Product weight per m²	34.5 kg	40.8 kg
Packaging per m²	7.9 kg	7.9 kg

2.5 Base materials / Ancillary materials

The VARIFLEX 100 full element, which was regarded as a worst-case scenario, comprises the following (excluding production waste and packaging):

Component	Percentage
Particle board*	50.3%
Bitumen foil	21.0%
Steel	17.1%
Aluminium	4.7%
Glass wool	1.7%
Plastics	3.6%
Cast zinc	0.9%
Paper	0.7%
Copper	< 0.1 %
TOTAL	**100%**

*MDF board for VARIFLEX 88

None of the raw materials and ancillaries contain chemical compounds classified as substances of very high concern (SVHC).

2.6 Manufacture

The element frame requires vertical aluminium profiles and horizontal/vertical steel profiles. The vertical aluminium profiles are cut to size and the ends have cut-outs for the PU end pieces of the sealing strips. Notches are punched into the positions of the vertical steel profiles. The horizontal steel profiles are also punched.
Sealing profiles and optional magnetic bands are drawn through the chambers of the vertical profiles. Cut aluminium profiles and moulded PU parts are merged as sealing strips for the top and bottom sealing.
Pressure tubes comprising steel tubes and pressure springs are prefabricated by compressing the individual parts for later operation of these sealing strips.
The horizontal and vertical steel profiles and the vertical aluminium profiles are fixed in place on an assembly bench. The horizontal and vertical steel profiles are positively connected to the perforations. The aluminium vertical profiles are fastened using the steel profiles, giving rise to the element frames of the partition wall element.
An extension unit (prefabricated by the supplier) is secured in the centre of the frame (spindle system along the principle of a car jack). The prefabricated pressure tubes and an operating tube are welded to this extension unit. The prefabricated sealing strips are fastened to the top and bottom ends of the pressure tubes.
Mineral wool is inserted into the cavities of the ensuing element frame. This mineral wool is covered on both sides of the element frame using glued Kraft paper. Finished cover panels are sawn to the specified size for the cover panels on both sides. Chips and leftovers are suctioned off and collected.
On the back of the cover panels, suspension plates are screwed at designated positions for securing to the element frame at a later stage.
The cover panels and element frames are packed on pallets. On account of their high weights, the individual parts/assemblies are transported separately to and from the site.
The frame and cover panel are assembled by simply suspending and clamping the cover panels on site. Offcuts are directed to recycling by a disposal company.
Permanent measurement and continuous improvement of the production processes are ensured by the Quality Management system in accordance with /DIN EN ISO 9001/.

2.7 Environment and health during manufacturing

Within the framework of production, environmental and occupational safety aspects are considered and the corresponding standards observed.

2.8 Product processing/Installation

The following machines, tools and plants as well as any associated noise protection measures are used:

- Saws for steel and aluminium, cordless screwdrivers, box column drills
- Noise control cabins for saws, noise barriers in the area of wood processing (CNC saws and edge processing)
- Extraction systems installed at all sawing areas for wood processing
- Extraction systems at all welding areas; welding areas feature safety barriers (glare protection)

- CNC punching machines for steel and aluminium profiles

2.9 Packaging

The VARIFLEX full-wall element is supplied ex works with the following transport packaging:

Component	Percentage
Wooden pallet	85%
PU foil	8%
Polystyrene strips	4%
Corrugated board	4%
TOTAL	**100%**

2.10 Condition of use

Some grease is required for lubricating the scissor mechanism during maintenance and repair of the room partition system. Annual maintenance for adjustments, for example, is recommended by the manufacturer. Repairs or replacements are not usually necessary. Cleaning is limited to occasional cleaning of the surface using water and/or standard cleaning agents.

2.11 Environment and health during use

At the current point in time, no interactions between the product, the environment and health are known. Additional information available in section 7.

2.12 Reference service life

According to empirical values gleaned by DORMA Hüppe Raumtrennsysteme + Co. KG, the useful life is 25 years with approx. 50 closing cycles/year, whereby DORMA Hüppe relies on its 60 years of Expertise.

2.13 Extraordinary effects

Fire

No extraordinary impacts are known in the event of a fire.

Fire protection

Name	Value
Building material class	B2
Burning droplets	-
Smoke gas development	-

On request, the cover panel is available as Euroclass B-s2-d0.

Water

Possible impacts on the environment following unforeseen exposure to water can be eliminated.

Mechanical destruction

No negative environmental impact is known in the event of mechanical destruction.

2.14 Re-use phase

With reference to the material composition of the product system in accordance with section 2.6, the following possibilities are available:

Re-use

The entire room partition system can be re-used within the reference service life. De-construction from the building is carried out by DORMA Hüppe Raumtrennsysteme + Co. KG for a fee. This is conditional to identical room heights.

Material recycling

The metal content can be collected separately and directed to material recycling.
Theoretically, the particle board material can be recycled to manufacture new particle board.

Energy recovery

The particle board and plastic content can be disposed of via incineration and flue gas cleaning, and utilised to generate heat and electricity.

Landfilling

As the product does not contain any substances which are hazardous to the environment or human health, the entire system can be landfilled in the absence of waste recycling technologies. In Germany, landfilling is not permissible for wood components in accordance with the Waste Wood Act.

2.15 Disposal

Packaging

The packaging components incurred during installation in the building are directed to an energy recovery process.

- /EWC 15 01 01/ Paper and cardboard packaging
- /EWC 15 01 02/ Plastic packaging
- /EWC 15 01 03/ Wooden packaging

Disposal phase

All materials are directed to energetic or metallurgical recycling in line with the available waste technology (see 2.15):

- /EWC 17 02 01/ Wood
- /EWC 17 02 03/ Plastic
- /EWC 17 03 02/ Asphalt, tar-free (bitumen mixtures)
- /EWC 17 04 01/ Copper, bronze, brass
- /EWC 17 04 02/ Aluminium
- /EWC 17 04 05/ Iron and steel

2.16 Further information

Further information on technical data and other product variants can be obtained from the following sources:

DORMA Hüppe
Raumtrennsysteme GmbH + Co. KG
Industriestraße 5
D-26655 Westerstede / Ocholt
Tel.: +49 (0)4409 666-0
E-mail: info-hueppe@dormakaba.com
Internet: www.dorma-hueppe.de

Authorised representatives of DORMA Hüppe Raumtrennsysteme GmbH & Co. KG: Dieter Sichelschmidt, Jörg Henke

3. LCA: Calculation rules

3.1 Declared Unit

The declared unit is 1m² of the VARIFLEX 88/100 full-wall element room partition system including packaging materials and excluding the respective edge fasteners and sealants for walls, floors, and ceilings.

Declared unit

Name	Value	Unit
Declared unit	1	m^2
Basis weight	40.8	kg/m²
Conversion factor to 1 kg	0.0245	-
Packaging	7.9	kg/m²

3.2 System boundary

Type of EPD: cradle to grave (with options)
The following modules are considered in accordance with EN 15804:

Product stage: A1 – A3
The module includes the extraction and treatment of raw materials as well as biomass production including all of the corresponding upstream chains and provision of electricity, steam and heat from primary energy sources, including extraction, refinement and transport thereof as well as the requisite procurement transport to the plant gate.

Construction stage: A4 – A5
This module comprises the distribution route as well as energetic utilisation of packaging materials.

End-of-life stage: C2 – C3
This module considers transport to the recycling plant as well as the expenses incurred by collection, treatment and recycling. Biogenic carbon (e.g. from the particle board) is emitted here during incineration.

Possible potentials and avoided loads beyond the system boundary: D
Indication of potential product loads and credits outside the system boundary. These comprise energy credits from thermal utilisation of packaging waste (A5) as well as the wood and plastic components of the product (C3) in the form of the average German power mix or thermal energy from natural gas as well as material credits as the result of metal Recycling.

3.3 Estimates and assumptions

Energy consumption was calculated specifically for production. All of the distribution countries were recorded proportionately in establishing the distribution transport distance.
A transport distance of 75 km is assumed to the disposal plant, whereby capacity utilisation is 50%.

3.4 Cut-off criteria

All of the data from the operational data survey and all emission measurements available during the review period indicated in 3.7 were taken into consideration in the model. Furthermore, data on transport expenses was recorded and analysed for all inputs taken into consideration.
It can be assumed therefore that the total processes ignored do not exceed 5% of the impact categories and are therefore of subordinate significance.
The infrastructure used in the manufacturing processes (especially machines and production equipment) was not considered in the analysis.
Transport expenses for packaging were also ignored.

3.5 Background data

Version 8.0 of the software system for comprehensive analysis (GaBi) was used for modelling the life cycle. All of the background data sets used were taken from the 8.0 version of the /GaBi/ data base and the /ecoinvent/ data base (version 2.2). The data items contained in the data bases are documented online. German data records were used for Modules A1-3 and the corresponding European data records were used for transport associated with distribution and installation in the building (A4-A5) and disposal scenarios (C Modules).
On account of a lack of data sets for waste treatment, various material flows are summarised under the data set which would appear to make most sense from a technical perspective.
The secondary material shares (recycled content) can only be considered using generic data sets.

3.6 Data quality

The data was recorded using analyses of internal production and environmental data, LCA-relevant data within the supply chain, and analyses of the relevant data for the provision of energy. The data provided and originating from the operating data records and measurements has been checked in terms of plausibility. Following intensive examination, very good data representativity has been established.
The background data used for the analysis is generally not older than 10 years. Exceptions are represented by two disposal data sets from 2006 for which no adequate more recent replacement was available.

3.7 Period under review

The LCA is based on data recorded for the financial year 2016/17 at the production facility in Ocholt, Germany.

3.8 Allocation

There are no co-products. Within the framework of the manufacturing process, a single product is manufactured.

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.
.

4. LCA: Scenarios and additional technical information

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	-	l/100km
Transport distance	681	km
Capacity utilisation (including empty runs)	85	%
Gross density of products transported	-	kg/m^3
Capacity utilisation volume factor	-	-

Installation into the building (A5)

Name	Value	Unit

Auxiliary	-	kg
Water consumption	-	m^3
Other resources	-	kg
Electricity consumption	-	kWh
Other energy carriers	-	MJ
Material loss	-	kg
Output substances following waste treatment on site	-	kg
Dust in the air	-	kg
VOC in the air	-	kg
Waste for energy recovery	7.88	kg

End of life (C1-C4)

Name	Value	Unit
Collected separately waste type	40.8	kg
Collected as mixed construction waste	-	kg
Reuse	0	kg
Recycling	9.3	kg
Energy recovery	31.5	kg
Landfilling	0	kg

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

Parts of the product as well as the packaging are thermally utilised in a waste incineration plant. Metal is directed to the recycling circuit. Module D includes credits from energetic utilisation of packaging waste in Module A5 and energetic utilisation of non-metallic components of the product in Module C3. This is supplemented by material credits from recycling the metal components of the Product in C3.

Name	Value	Unit
Incineration credit	39.3	kg
R1 factor waste incineration plant	>60	%
Materials for recycling	9.3	kg

5. LCA: Results

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	MND	MND	MND	X	X	MND	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m² VARIFLEX full element

Parameter	Unit	A1-A3	A4	A5	C2	C3	D
Global warming potential	[kg CO_2-Eq.]	3.72E+1	1.89E+0	1.49E+1	2.64E-1	6.15E+1	-5.84E+1
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.02E-5	2.39E-13	6.18E-13	8.87E-14	3.81E-8	-1.70E-7
Acidification potential of land and water	[kg SO_2-Eq.]	3.03E-1	4.39E-3	1.90E-3	7.11E-4	2.03E-2	-1.46E-1
Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	2.97E-2	1.04E-3	3.43E-4	1.72E-4	4.17E-3	-1.07E-2
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	3.21E-2	-1.45E-3	7.63E-5	-2.47E-4	1.26E-3	-1.34E-2
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	1.70E-3	1.96E-7	5.09E-7	2.13E-8	-5.63E-6	-1.17E-4
Abiotic depletion potential for fossil resources	[MJ]	1.22E+3	2.56E+1	4.02E+0	3.65E+0	3.21E+1	-6.98E+2

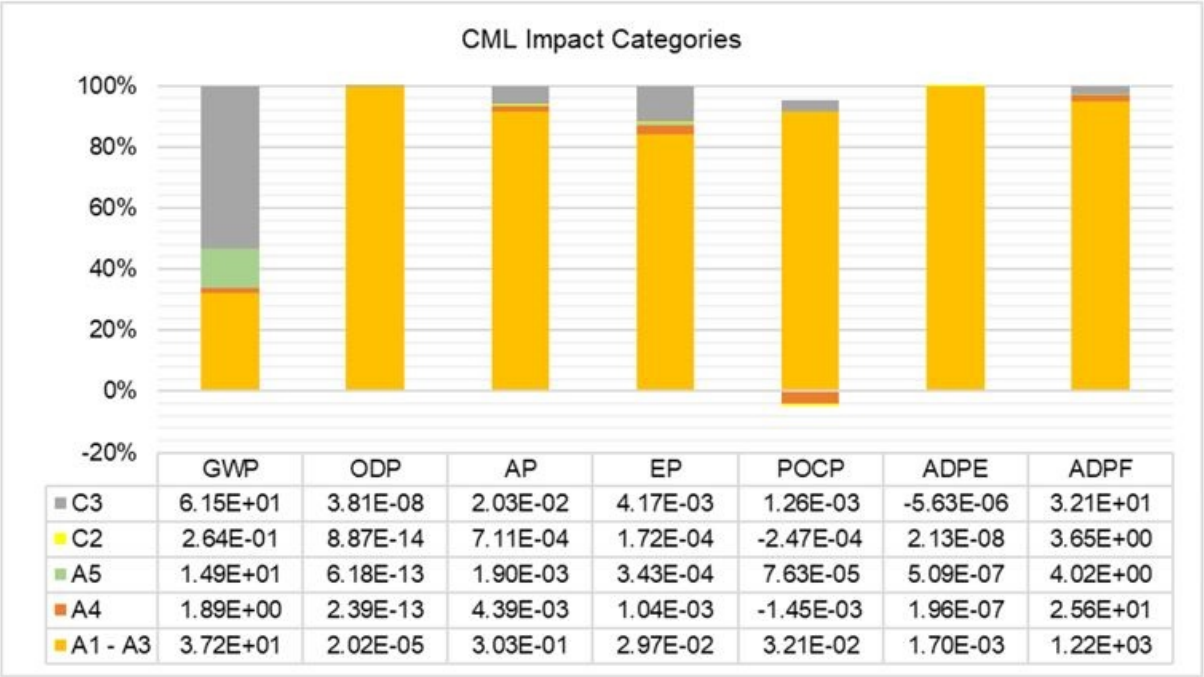
RESULTS OF THE LCA - RESOURCE USE: 1 m² VARIFLEX full element

Parameter	Unit	A1-A3	A4	A5	C2	C3	D
Renewable primary energy as energy carrier	[MJ]	5.60E+2	1.69E+0	1.12E+2	1.84E-1	3.35E+2	-1.66E+2
Renewable primary energy resources as material utilization	[MJ]	4.44E+2	0.00E+0	-1.11E+2	0.00E+0	-3.33E+2	0.00E+0
Total use of renewable primary energy resources	[MJ]	1.00E+3	1.69E+0	7.63E-1	1.84E-1	2.90E+0	-1.66E+2
Non-renewable primary energy as energy carrier	[MJ]	1.04E+3	2.57E+1	3.04E+1	3.66E+0	3.10E+2	-7.65E+2
Non-renewable primary energy as material utilization	[MJ]	3.00E+2	0.00E+0	-2.60E+1	0.00E+0	-2.74E+2	0.00E+0
Total use of non-renewable primary energy resources	[MJ]	1.34E+3	2.57E+1	4.41E+0	3.66E+0	3.58E+1	-7.65E+2
Use of secondary material	[kg]	6.89E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of non-renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of net fresh water	[m^3]	6.00E-1	1.98E-3	3.62E-2	3.41E-4	1.43E-1	-3.08E-1

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 m² VARIFLEX full element

Parameter	Unit	A1-A3	A4	A5	C2	C3	D
Hazardous waste disposed	[kg]	2.99E-2	1.62E-6	4.57E-8	1.92E-7	3.97E-8	-1.65E-7
Non-hazardous waste disposed	[kg]	4.23E+0	1.87E-3	2.63E-1	2.80E-4	1.54E+0	-4.72E+0
Radioactive waste disposed	[kg]	4.67E-2	2.95E-5	1.55E-4	5.00E-6	1.34E-3	-2.83E-2
Components for re-use	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Materials for recycling	[kg]	9.83E-1	0.00E+0	0.00E+0	0.00E+0	9.31E+0	0.00E+0
Materials for energy recovery	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported electrical energy	[MJ]	0.00E+0	0.00E+0	1.99E+1	0.00E+0	7.16E+1	0.00E+0
Exported thermal energy	[MJ]	3.09E+1	0.00E+0	4.92E+1	0.00E+0	2.02E+2	0.00E+0

6. LCA: Interpretation



	GWP	ODP	AP	EP	POCP	ADPE	ADPF
C3	6.15E+01	3.81E-08	2.03E-02	4.17E-03	1.26E-03	-5.63E-06	3.21E+01
C2	2.64E-01	8.87E-14	7.11E-04	1.72E-04	-2.47E-04	2.13E-08	3.65E+00
A5	1.49E+01	6.18E-13	1.90E-03	3.43E-04	7.63E-05	5.09E-07	4.02E+00
A4	1.89E+00	2.39E-13	4.39E-03	1.04E-03	-1.45E-03	1.96E-07	2.56E+01
A1 - A3	3.72E+01	2.02E-05	3.03E-01	2.97E-02	3.21E-02	1.70E-03	1.22E+03

The provision of raw materials has the greatest influence on all impact categories. During this phase, the anodised aluminium components, some of which are part powder-coated with polyester resin, the steel components and bitumen sheeting can be primarily indicated as hotspots of environmental impact. These are supplemented by the particle board which accounts for the greatest mass percentage of the product. On account of the bound carbon, they still reduce the global warming potential (**GWP**) during the manufacturing phase.
The conspicuously high percentage of waste management (C3) accounting for the **GWP** is attributable to the incineration process for particle board where the biogenic carbon which makes a positive contribution in A1-A3 is released. But the incineration of plastic and bitumen also accounts for a significant third.

In the case of the formation potential for tropospheric ozone (**POCP**), transport accounts for a minor credit based on the negative characterisation factor of nitrogen monoxide (NO). Despite the apparently paradoxical results that more transports would lead to a reduction in overall near-ground ozone, this model does not contain any errors.
Due to the low relevance of consumables during the use phase, no environmental impacts are calculated for the declared product. No electricity is required for everyday operation.
Possible potentials and loads beyond the system boundary arise through material recycling and energetic utilisation of the offcuts during manufacturing, disposal of packaging and the product during the disposal Phase.

7. Requisite evidence

Airborne sound insulation:

Measuring agency: Fraunhofer-Institut für Bauphysik, Nobelstr. 12, D-70569 Stuttgart

Test report: P-BA 141/2016

8. References

Institut Bauen und Umwelt
Institut Bauen und Umwelt e.V., Berlin (pub.): Generation of Environmental Product Declarations (EPDs);
General Principles
for the EPD range of Institut Bauen und Umwelt e.V. (IBU), 2015/10
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

Product Category Rules for Building Products, Part A: Calculation rules for the Life Cycle Assessment and

requirements on the Background Report, version 1.5, 08/2016

Product Category Rules for Building Products, Part B: Requirements on the EPD for room partition systems, 04/2017

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

DIN EN ISO 6946:2008-04, Building components and building elements - Thermal resistance and thermal transmittance - Calculation method

DIN EN 15804:2014-07, Sustainability of construction works – Environmental product declarations – Core rules for the construction products product category

DIN EN ISO 14025:2011-10, Environmental designations and declarations – Type III Environmental Declarations – Basic principles and processes

DIN EN ISO 6946:2008-04, Thermal resistance and thermal transmittance - Calculation method

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

DIN 4102:1998-05, Fire performance of building materials and components

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

DIN EN ISO 140-3:2005, Acoustics – Laboratory measurement of sound insulation of buildings and building elements – Part 3: Measurement of airborne sound insulation of building elements

2001/118/EC, European Waste Catalogue (EWC) – Commission decision of 16 January 2001 amending Decision 2000/532/EC as regards the list of wastes

AgBB 2010, Health-related evaluation of emissions by volatile organic compounds (VOC and SVOC) from construction products

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

GaBi 8.0, Software and data base for comprehensive analysis, LBP, University of Stuttgart and thinkstep AG, 2017

ecoinvent, Data base for life cycle analysis (life cycle inventory analysis data), version 2.2, Swiss Centre for Life Cycle Inventories, St Gallen

FSC, Forest Stewardship Council

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**

Author of the Life Cycle Assessment
brands & values GmbH
Karl-Ferdinand-Braun Straße 2
28359 Bremen
Germany

Tel +49 421 960 96 - 30
Fax +49 421 960 96 10
Mail info@brandsandvalues.com
Web **www.brandsandvalues.com**

Owner of the Declaration
DORMA Hüppe Raumtrennsysteme GmbH + Co. KG
Industriestraße 5
26655 Westerstede/ Ochholt
Germany

Tel +49 4409 6660
Fax -
Mail info.hueppe@dorma.com
Web **www.dorma-hueppe.de**