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ECO PLATFORM
EPD
EN 15804 VERIFIED

3ʳᵈ PARTY **VERIFIED**

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | **ISO 14025 & EN 15804**

DEKO

epddanmark

Owner of declaration
DEKO p|s
Mårkærvej 11
2630 Taastrup, Danmark
VAT No.: 66674517
www.deko.com

DEKO

Programme operator
Danish Technological Institute
www.dti.dk

DANISH TECHNOLOGICAL INSTITUTE

Programme
EPD Danmark
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epddanmark

Declared products
DEKO FG is a fully glazed partition system with door opening, top and bottom rails in white aluminium with joint strip.

Production site
DEKO p|s Mårkærvej 11, 2630 Taastrup, Denmark

Products use
The DEKO FG partition system is used for partitioning.

Declared unit
4.59 m² floor to ceiling partitions for 25 years.

Basis of calculation
This EPD is developed in accordance with and ISO 14025 the European standard EN 15804.

Comparability
EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

Validity
This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

Use
The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

EPD type
☐Cradle-to-gate
☐Cradle-to-gate with options
☒Cradle-to-grave

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

☐ internal   ☒ external

Third party verifier:

Linda Høibye, COWI

Mathias Høeg
EPD Danmark

Life cycle stages and modules (MNR = module not relevant; MNA = module not assessed)																
Product			Construction process		Use							End of life				Beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use, recovery and recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MNR	X	MNR	MNR	MNR	MNR	MNR	MNA	X	X	X	X

Product information

Product description
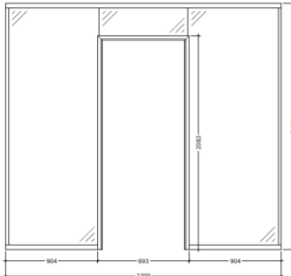
The declared system consists of two 12.8 mm thick laminated single layer glazed elements measuring 2400 x 900 mm, and a door opening measuring 2100 mm x 900 with glazed panel above the door opening. The full DEKO FG partition system including door opening is 2700 mm wide and 2400 mm high, equivalent to 6.48 sqm. Excluding door opening, the FG partition system totals 4.59 sqm.

The composition of the declared DEKO FG partition system 4.59 sqm and packaging are shown in the table below.

Material	Weight-% of declared product
Glass	85.3
Aluminium	10.3
MDF	2.3
Steel	0.88
PVC	0.86
Acrylic	0.24
Product sum	**100**

Packaging material	Weight-% of packaging
Wood	93.1
PE plastic	3.8
Cardboard	2.8
PVC plastic	0.22
PP plastic	0.037
Paper	0.02
Product sum	**100**

Representativity

This declaration, including data collection and the modeled foreground system including results, represents the production of DEKO FG partition system on the production site located in Taastrup, Denmark. Product specific data are based on average values collected in the period 2015 Background data are based on data from the GaBi databases and are less than 10 years old. Generally, the used background datasets are of high quality.

Dangerous substances

DEKO FG partition system does not contain substances listed in the "Candidate List of Substances of Very High Concern for authorisation"

(http://echa.europa.eu/candidate-list-table)

Essential characteristics (CE)

DEKO FG partition system are covered by harmonised technical specification according to European Technical Assessment ETA-10/0224 of 06/09/2015 in the Construction Products Regulation for the DEKO FG partition system, declaration of performance ref. no. DoP-002-ETA-10/0224-EN.

Further technical information can be obtained by the website: www.deko.com

| **Reference Service Life (RSL)** | According to European Technical Assessment ETA-10/0224 of 06/09/2015 in the Construction Products Regulation for the DEKO FG partition system the working life of DEKO partitions FG is at least 25 years. |

LCA background

| **Declared unit** | The LCI and LCIA results in this EPD relates to 4.59 m^2 DEKO FG partition system. |

Name	Value	Unit
Declared unit	4.59	m^2
Density	NA	kg/m^3
Conversion factor to 1 kg.	NA	-

| **PCR** | This EPD is developed according to the core rules for the product category of construction products in EN 15804:2012 + A1:2013, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products, 2nd edition 2013-12-18. |

Flow diagram
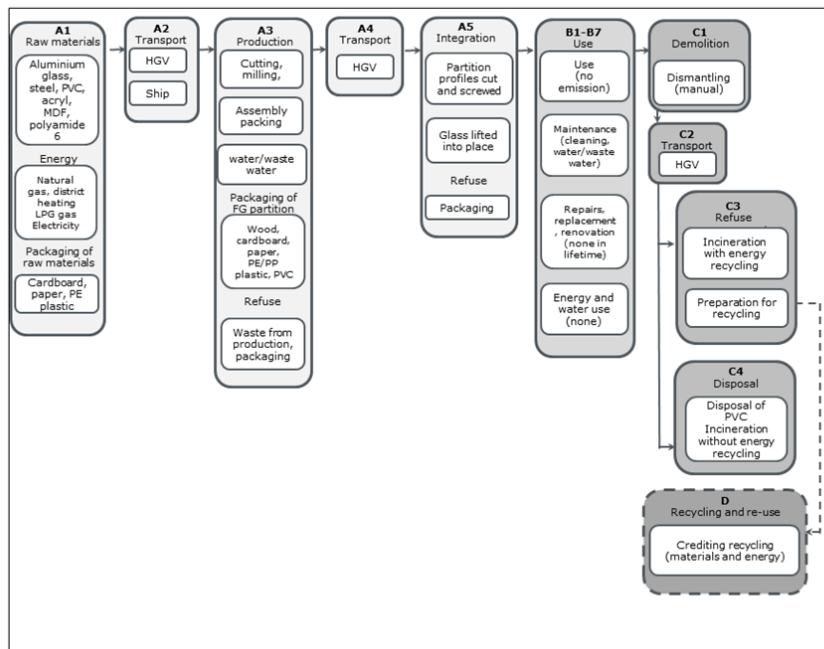
System boundaries	This EPD is based on a cradle-to-grave LCA, in which 100 weight-% has been accounted for. The general rules for the exclusion of inputs and outputs follows the requirements in EN 15804, 6.3.5, where the total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass and 1 % of energy usage and mass for unit processes.

Product stage (A1-A3) includes:

A1 – Extraction and processing of raw materials
A2 – Transport to the production site
A3 – Manufacturing processes

The product stage comprises the acquisition of all raw materials, products and energy, transport to the production site, packaging and waste processing up to the "end-of-waste" state or final disposal. The LCA results are declared in aggregated form for the product stage, which means, that the sub-modules A1, A2 and A3 are declared as one module A1-A3. Raw materials are produced globally. Components are typically manufactured in the EU and China. Manufacturing of DEKO FG partition system consist of adapting, assemble and package components on the production site located in Taastrup, Denmark.

Construction process stage (A4-A5) includes:
The construction phase encompasses impact on the environment from transport to production of components for the location where the DEKO FG partition system is to be installed. Furthermore, impact on the environment from integration and installation of the DEKO FG partition system is included.

650 km from DEKO Denmark to the construction site in Oslo, Norway has been calculated for this declaration.

Integration primarily encompasses manual lifting of glazed modules, adaptation and fitting of profiles and strips using hand tools, which are deemed to be insignificant.

Use stage (B1-B7) includes:
The in-use phase encompasses impact on the environment from use, maintenance, repair, replacement and renovation. The in-use phase in this declaration will take place in Oslo, Norway. The impact on the environment of the in-use phase is primarily related to maintenance in the form of cleaning with water.

End of life (C1 - C4) includes:
Service life end encompasses impact on the environment from demolition, transport for further processing, disposal processes for non-recycled materials and processing materials for recycling.

Glass and metal from the DEKO FG partition system can be sent for material recycling. MDF, acrylic and polyamide materials are incinerated and PVC dumped in landfill.

It is assumed that maintenance, repair, replacement and renovation is not needed.

Potential for recycling (D) includes:
The potential for recycling encompasses exemption for materials and energy gains from recycling.

LCA results

ENVIRONMENTAL IMPACTS PER 4,59 m²								
Parameter	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
GWP	[kg CO$_2$-eq.]	561	8.32	91.4	1.63	5.15	9.05	0.10	-254
ODP	[kg CFC11-eq.]	1.72E-008	3.8E-011	5.87E-010	1.94E-011	2.35E-011	3E-011	3.83E-012	6.7E-008
AP	[kg SO$_2$-eq.]	3.56	0.036	0.032	0.0026	0.022	0.0034	0.00028	-1.24
EP	[kg PO$_4^{3-}$-eq.]	0.30	0.0089	0.0078	0.0011	0.0055	0.00086	0.00028	-0.11
POCP	[kg ethene-eq.]	0.022	-0.014	0.0017	0.00017	-0.0084	0.00023	3.68E-005	-0.0256
ADPE	[kg Sb-eq.]	0.00051	5.5E-007	1.27E-006	5.62E-007	3.4E-007	8.08E-008	1.99E-008	-0.00057
ADPF	[MJ]	7.64E003	114	33.4	3.11	70.4	2.23	1.46	-2.64E003
Caption	GWP = Global warming potential; ODP = Ozone depletion potential; AP = Acidification potential of soil and water; EP = Eutrophication potential; POCP = Photochemical ozone creation potential; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources								

RESOURCE USE PER 4,59 m²								
Parameter	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
PERE	[MJ]	893.74	6.47	4.8	10.1	4	0.26	0.10	-1.12E003
PERM	[MJ]	736.26	0	0	0	0	0	0	0
PERT	[MJ]	1.63E+03	6.47	4.8	10.1	4	0.26	0.10	-1.12E003
PENRE	[MJ]	7.72E+03	114	39.1	4.03	70.6	2.54	1.52	-2.97E003
PENRM	[MJ]	132	0	0	0	0	0	0	0
PENRT	[MJ]	7.85E+03	114	39.1	4.03	70.6	2.54	1.52	-2.97E003
SM	[kg]	1.35	0	0	0	0	0	0	0
RSF	[MJ]	8.01	0	0	6.61	0	0	0	-90.5
NRSF	[MJ]	3.95	0	0	3.25	0	0	0	-44.6
FW	[m³]	1.54	0.016	0.21	0.030	0.01	0.020	6.69E-006	-2.75
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								

WASTE CATEGORIES AND OUTPUT FLOWS PER 4,59 m²								
Parameter	Unit	A1-A3	A4	A5	B2	C2	C3	C4	D
HWD	[kg]	2.56E-005	8.63E-006	2.97E-007	2.28E-008	5.34E-006	1.67E-009	8.64E-009	-7.81E-006
NHWD	[kg]	45.3	0.0096	0.39	0.38	0.0059	0.017	1.43	-70.8
RWD	[kg]	0.082	0.00016	0.0023	0.00038	0.00010	0.00012	2.32E-005	-0.13
CRU	[kg]	0	0	0	0	0	0	0	0
MFR	[kg]	0	0	3.57	0	0	160	0	0
MER	[kg]	0	0	50	0	0	4.6	0	0
EEE	[MJ]	0	0	88.1	0	0	10.5	0	0
EET	[MJ]	0	0	205	0	0	24.3	0	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; EET = Exported thermal energy								

Additional information

Transport to the building site (A4)

Parameter	Value	Unit
Fuel type	Diesel	L
Transport distance	650	Km
Gross density of products transported	General Cargo	X > 250 kg/m³

Installation of the product in the building (A5)

Parameter	Value	Unit
Ancillary materials	Non	kg
Water use	Non	m³
Other resource use	Non	kg
Energy type and consumption for hand tools	insignificant electricity	kWh
Waste materials, wooden pallet and packaging	53,69	kg
Output materials	Non	kg
Direct emissions to air, soil or water	Non	kg

Use (B2)

Parameter	Value	Unit
Cleaning water and waste water, total for 25 years	0,10	m³

Reference service life

Navn	
Reference service Life	25 Years
Sound insulation (Rw). Reference: Declaration of Performance (DoP)	36 db

End of life (C1-C4)

Parameter	Value	Unit
For reuse	Non	kg
For recycling	159,81	kg
For energy recovery	4,35	kg
For final disposal	1,43	kg

Indoor air

The EPD does not give information on release of dangerous substances to indoor air because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonised test methods according to the provisions of the respective technical committees for European product standards are not available.

Soil and water

The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonised test methods according to the provisions of the respective technical committees for European product standards are not available.

References

Publisher	epddanmark http://www.epddanmark.dk
Programme operator	Danish Technological Institute Sustainable Construction Kongsvang Allé 29 DK-8000 Aarhus C http://www.teknologisk.dk
LCA-practitioner	ALECTIA A/S Ninkie Bendtsen og Susanne Vedel Jørgensen Teknikerbyen 34 2830 Virum Hovednummer +45 88 191 000 Morten Søes Kokborg thinkstep ApS Lipkesgade 23, st. tv. DK-2100 Copenhagen Ø Tfl. +45 7020 3171
LCA software /background data	Thinkstep/GaBi. Gabi databases version 6.110
3rd party verifier	Linda Høibye, COWI

General programme instructions
Version 1.7, www.epddanmark.dk

EN 15804
DS/EN 15804 + A1:2013 - "Sustainability of construction works – Environmental
product declarations – Core rules for the product category of construction products"

EN 15942
DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations –
Communication format business-to-business"

ISO 14025
DS/EN ISO 14025:2010 – " Environmental labels and declarations – Type III environmental declarations
– Principles and procedures"

ISO 14040
DS/EN ISO 14040:2008 – " Environmental management – Life cycle assessment – Principles and
framework"

ISO 14044
DS/EN ISO 14044:2008 – " Environmental management – Life cycle assessment – Requirements and
guidelines"