

Owner: SKANDI-BO A/S
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Valid to: 21-05-2024

3rd PARTY VERIFIED

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | ISO 14025 & EN 15804



Owner of declaration

SKANDI-BO A/S
 Industrivej 1, Ubby, 4490
 Jerslev Sj., Denmark
 VAT no. 27390420



Issued:
21-05-2019

Valid to:
21-05-2024

Basis of calculation

This EPD is developed in accordance with 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

Programme operator

Danish Technological Institute
 www.dti.dk



Programme

EPD Danmark
 www.epddanmark.dk



Declared products

Glass wall system, ID85 system, with the following measurements: Glass wall: 3000mm x 2700mm excl. 2.1 m² door opening. Of the following types:

- Product 1: Single glass, without fire rating
- Product 2: E30 with fire rating
- Product 3: E60 with fire rating
- Product 4: EW30 with fire rating
- Product 5: EW60 with fire rating
- Product 6: EI30 with fire rating
- Product 7: EI60 with fire rating

Production site

Ubby, Jerslev Sj., Denmark.

Products use

The products are used in buildings, for room separation.

CEN standard EN 15804 serves as the core PCR
Independent verification of the declaration and data, according to EN ISO 14025
<input type="checkbox"/> internal <input checked="" type="checkbox"/> external
Third party verifier:  <hr/> Kim Christiansen

Declared unit

1 m² glass wall system



Henrik Fred Larsen
 EPD Danmark

Life cycle stages and modules (MND = module not declared)																
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	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Product information

Product description

The product components are shown in the table below. These amounts to 100 weight % of the declared products.

SYSTEM ID85	Single glass, without fire rating	E30 with fire rating	E60 with fire rating	EW30 with fire rating	EW60 with fire rating	EI30 with fire rating	EI60 with fire rating
Materials							
Weight % per m² glass wall system							
Glass	78%	69%	78%	77%	78%	79%	85%
Aluminium*	20%	16%	11%	12%	11%	11%	8%
Steel	<1%	1%	1%	1%	1%	1%	1%
Plaster	-	11%	8%	8%	8%	7%	5%
Rubber / Polymer	2%	2%	1%	1%	1%	1%	1%
MDF/Wood	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Fire retardant materials	-	1%	1%	1%	1%	1%	1%
Ceramic bloks	-	<1%	<1%	<1%	<1%	<1%	<1%
Total	100 %	100%	100%	100%	100%	100%	100%
Packaging of final product, kg per m² glass wall system							
Wood pallets	0.7	0.8	1.8	0.9	2.9	1.1	1.2
Plastic film	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total	0.7	0.8	1.8	0.9	3.0	1.1	1.3

*Some of the aluminium compounds are powder coated. The powder coating constitutes <1.0 weight % of the coated profile. Due to rounding of numbers, the sum of the values in the table is not exactly 100% for all systems.

Representativity

This declaration, including data collection and the modeled foreground system including results, represents the production of 1 m² of the different glass wall systems under the ID85 system on the production site located in Ubby, Jerslev Sj., Denmark. Product specific data are based on annual average values from 2017 provided by SKANDI-BO. Background data are based on GaBi Professional database 2018, as well as EPDs. The background data that are used are less than 10 years old.

Dangerous substances

The declared products do not contain substances listed in the "Candidate List of Substances of Very High Concern for authorisation" with a content exceeding 0.1 weight % (<http://echa.europa.eu/candidate-list-table>)

Essential characteristics (CE)

The products are not covered by harmonised technical specifications.

The letters in the names of the fire rated products are fire rating definitions: E = Integrity, EW = Integrity +Radiation, EI = Integrity + Insulation. By reference to the classification Standard DS/EN 13501.

Further technical information can be obtained by contacting the manufacturer or on the manufacturer's website: [Datablad ID85, https://skandi-bo.dk/en/strength/](https://skandi-bo.dk/en/strength/)

Reference Service Life (RSL)

The reference service life is in accordance with EN 15804 not declared, as this environmental product declaration is based on a cradle-to-gate life cycle assessment.

LCA background

Declared unit

The declared unit is 1 m² glass wall system, from different glass wall systems, all belonging to the ID85 system.

	Single glass, without fire rating	E30 with fire rating	E60 with fire rating	EW30 with fire rating	EW60 with fire rating	EI30 with fire rating	EI60 with fire rating	
	Value							Unit
Declared unit	1							m ²
Conversion factor to kg	29.65	26.77	37.82	35.98	37.82	39.66	56.21	kg/m ²

Product illustration

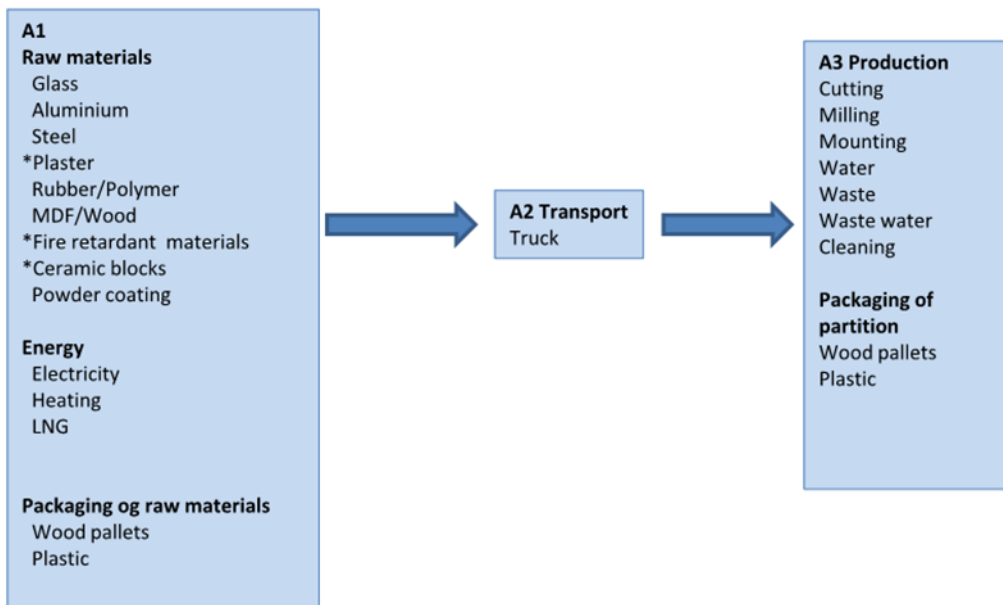


The photo shows an example of the glass wall system ID85, with or without fire rating, there is no visual difference.

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804.

Flow diagram



*The stars indicate material types which are only relevant for the fire rated glass wall systems.

System boundaries

This EPD is based on a cradle-to-gate 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 and internal transport at the production site, packaging and waste processing of waste from the production site 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.

LCA results

ENVIRONMENTAL IMPACTS PER m ² GLASS WALL SYSTEM, A1-A3								
Parameter	Unit	Single glass, without fire rating	E30 with fire rating	E60 with fire rating	EW30 with fire rating	EW60 with fire rating	EI30 with fire rating	EI60 with fire rating
GWP	[kg CO ₂ -eq.]	1.17E+02	1.09E+02	1.37E+02	1.33E+02	1.36E+02	1.43E+02	1.87E+02
ODP	[kg CFC11-eq.]	1.38E-08	2.64E-05	4.23E-05	3.97E-05	4.23E-05	4.50E-05	6.88E-05
AP	[kg SO ₂ -eq.]	5.18E-01	4.15E-01	5.06E-01	4.90E-01	5.08E-01	5.21E-01	6.55E-01
EP	[kg PO ₄ ³⁻ -eq.]	7.59E-02	5.72E-02	8.04E-02	7.64E-02	8.09E-02	8.40E-02	1.18E-01
POCP	[kg ethene-eq.]	2.98E-02	2.47E-02	3.11E-02	2.99E-02	3.11E-02	3.20E-02	4.15E-02
ADPE	[kg Sb-eq.]	7.51E-04	7.15E-04	8.20E-04	8.03E-04	8.21E-04	8.37E-04	9.95E-04
ADPF	[MJ]	1.37E+03	1.27E+03	1.60E+03	1.54E+03	1.61E+03	1.65E+03	2.15E+03
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 m ² GLASS WALL SYSTEM, A1-A3								
Parameter	Unit	Single glass, without fire rating	E30 with fire rating	E60 with fire rating	EW30 with fire rating	EW60 with fire rating	EI30 with fire rating	EI60 with fire rating
PERE	[MJ]	4.37E+02	4.35E+02	5.01E+02	4.88E+02	5.01E+02	5.14E+02	6.32E+02
PERM	[MJ]	1.19E+01	1.73E-01	2.90E+01	1.52E+01	4.77E+01	1.79E+01	2.05E+01
PERT	[MJ]	4.49E+02	4.35E+02	5.30E+02	5.03E+02	5.49E+02	5.32E+02	6.53E+02
PENRE	[MJ]	1.55E+03	1.52E+03	1.94E+03	1.87E+03	1.95E+03	2.01E+03	2.63E+03
PENRM	[MJ]	1.37E+01	1.26E+01	1.33E+01	1.26E+01	1.47E+01	1.26E+01	1.26E+01
PENRT	[MJ]	1.57E+03	1.53E+03	1.96E+03	1.88E+03	1.97E+03	2.02E+03	2.64E+03
SM	[kg]	-	-	-	-	-	-	-
RSF	[MJ]	-	-	-	-	-	-	-
NRSF	[MJ]	-	-	-	-	-	-	-
FW	[m ³]	8.11E+02	6.01E+02	6.09E+02	6.08E+02	6.10E+02	6.10E+02	6.21E+02
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 m ² GLASS WALL SYSTEM, A1-A3								
Parameter	Unit	Single glass, without fire rating	E30 with fire rating	E60 with fire rating	EW30 with fire rating	EW60 with fire rating	EI30 with fire rating	EI60 with fire rating
HWD	[kg]	4.60E-06	2.42E-03	3.87E-03	3.63E-03	3.88E-03	4.12E-03	6.30E-03
NHWD	[kg]	2.01E+01	1.89E+01	2.23E+01	2.18E+01	2.23E+01	2.29E+01	2.80E+01
RWD	[kg]	7.84E-02	1.06E-01	1.42E-01	1.36E-01	1.42E-01	1.47E-01	2.00E-01
CRU	[kg]	-	-	-	-	-	-	-
MFR	[kg]	-	-	-	-	-	-	-
MER	[kg]	-	-	-	-	-	-	-
EEE	[MJ]	-	-	-	-	-	-	-
EET	[MJ]	-	-	-	-	-	-	-
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							

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	COWI A/S Parallelvej 2, DK-2800 Kongens Lyngby Susanne Vedel Hjuler Mail:suvj@cowi.com
LCA software /background data	GaBi ts 8.7 2018 incl. databases
3rd party verifier	Kim Christiansen – kimconsult.dk

General programme instructions

Version 1.9

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"

EN 13501

DS/EN 13501:2016 – "Fire classification of construction products and building elements"

EPDs

EPDs published by INTERNATIONAL EPD SYSTEM and Institut Bauen und Umwelt e.V. (IBU)