ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Elsa kitchen frame door

from

Vedum Kök & Bad AB

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-08622
Publication date:	2023-03-08
Valid until:	2028-03-08

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): *PCR 2019:14 VERSION 1.2.5 (2022-11-01), c-PCR-006 (To PCR 2019:14) (2019-12-20)*
PCR review was conducted by: *The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.*
Life Cycle Assessment (LCA)
LCA accountability: Anna Liljenroth, IVL Swedish Environmental Research Institute
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third party verifier: Marcus Wendin and Daniel Böckin, Miljögiraff AB Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.
EPDs within the same product category but from different programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have
equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison.

Company information

Owner of the EPD: Vedum Kök & Bad AB

Contact: Sophia Andersson
E-mail: info@vedum.se

Description of the organisation: Vedum Kök & Bad decorates Scandinavian homes with beautiful, functional and long-term design. We develop and manufacture everything from kitchens and bathrooms to laundry and storage. Vedum was founded in 1919 by Viktor Lindberg and the company is today Sweden's largest family-owned company in its industry, with 480 employees and an annual turnover of approximately SEK 890 million. The factory and head office are still situated in the small Västgötland community Vedum, where everything started 100 years ago. Vedum has its own exhibitions in Stockholm, Uppsala, Gothenburg, Linköping, Malmö and in Vedum, as well as retailers in baths all over the country.

Product-related or management system-related certifications: ISO 9001 and ISO 14001

Name and location of production site: Vedum, Sweden

Product information

Product name: Elsa kitchen frame door

Product description: Elsa kitchen frame door is a white painted door made from melamine coated MDF board of 16 mm thickness, with ABS edging. The dimension for the declared product is 596x696 mm (width x height). Labelled with the Nordic Swan Ecolabel.

UN CPC code: 31912 (Tableware and kitchenware, of wood)

Geographical scope: Sweden

The picture shows the product Elsa, the handle is not included in the EPD.

LCA information

Functional unit / declared unit:
1 piece of product (5.3 kg)

The conversion factor needed to recalculate the results to per kg is therefore (1/5.3).

Expected service life: 25 years (Given that assembly and maintenance instructions are followed).

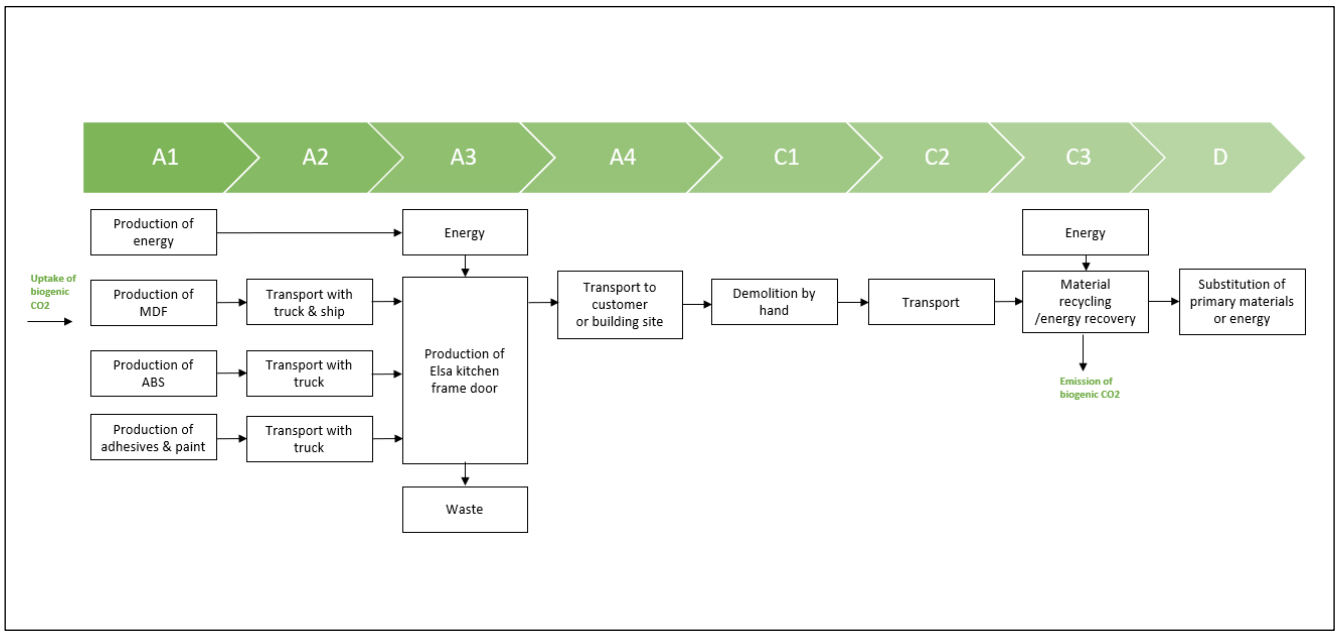
Time representativeness: 2019

Database(s) and LCA software used: Sphera database and ecoinvent. IVLs EPD Generator for TMF Kitchen & Bath.

Description of system boundaries: The EPD is a so-called Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). The additional modules are A4. Excluded life-cycle stages are A5, B1-B7. This is referred to a Type B EPD in the PCR.

The polluter pays principle is applied according to PCR. For waste management, this means that emissions that occur at material recycling facilities must be allocated to the next life cycle, if the next life cycle pays for the residual material. However, transport to the recycling facility is included. The life cycle begins with the extraction of raw materials used for the products, which defines the boundary with nature.

System diagram:



- Module A1: Production of raw materials.
- Module A2: Transportation of raw materials to Vedum's factory.
- Module A3: Manufacturing.
- Module A4: Transport of product to customer or building site.
- Module C1: Demolition.
- Module C2: Transport to waste processing.
- Module C3: Waste processing.
- Module C4: Disposal.
- Module D: Benefits and loads beyond the system boundary.

Allocation: Incoming energy, water and waste production in-house is allocated equally among all joint co-products through mass allocation.

Transportation: The transport included in this study is the transport of raw materials, products to customers and waste from the production site. The transport is mostly carried out through heavy trucks.

Energy utilities: Both electricity and heat are used at the factory. Electricity is based on hydro power. The heat applied is mainly from wooden waste that is transformed to heat on site, but also from oil.

Secondary energy: No secondary energy has been used.

Direct emissions from production: Direct emissions occur from the burning of fuels in the factory. As well as VOC emissions from painting.

Waste: Waste is generated from wastage in production as well as packaging from various products.

Scenario for module A4: The product is transported 270 km to customer by a 40-tonne truck.

Scenario for module C1: The product is assumed to be dismantled by hand, and therefore no energy is required for this step.

Scenario for module C2: Transport to waste management or landfill is carried out through a 2-tonne truck for 35 km. The low weight of the truck is based on the assumption that kitchen furniture is often brought to waste management facilities by households or craftsmen.

Scenario for module C3: Wooden parts are assumed to be chipped, incinerated and the energy recovered.

Scenario for module C4: The remaining materials are assumed to be send for disposal on a landfill.

Scenario for module D: Wood: As applied in C3. All heat generated replaces district heat.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X
Geography	EU	SE	SE	SE	-	-	-	-	-	-	-	-	SE	SE	SE	SE	SE
Specific data used	6%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	-					-	-	-	-	-	-	-	-	-	-	-	-

Content declaration

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Melamine coated MDF	5.15	0	80 and 0.4
Plastic	0.11	0	0
Adhesives & paint	0.04	0	0
Sum	5.30	0	78 and 0.39
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Wooden pallet	0.65	12	0.4
Cardboard	0.04	<1	0.4
Plastic	0.03	<1	0
Sum	0.72	14	0.04

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
None			

Environmental performance

Potential environmental impact – mandatory indicators according to EN15804

Results per functional or declared unit									
INDICATOR		**UNIT**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Global warming potential (GWP)	Fossil	kg CO_2 eq.	7.98E+00	9.12E-02	0.00E+00	7.56E-02	7.10E-03	2.27E-03	5.60E-02
	Biogenic	kg CO_2 eq.	-7.19E+00	2.84E-04	0.00E+00	2.35E-04	7.67E+00	-6.59E-05	-5.50E+00
	Land use and land use change	kg CO_2 eq.	9.96E-03	5.10E-04	0.00E+00	4.23E-04	3.97E-05	6.66E-06	1.33E-03
	TOTAL	kg CO_2 eq.	8.02E-01	9.20E-02	0.00E+00	7.63E-02	7.68E+00	2.21E-03	-5.44E+00
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	4.77E-07	2.06E-09	0.00E+00	1.71E-09	1.60E-10	8.82E-18	-1.16E-08
Acidification potential (AP)		mol H+ eq.	4.16E-02	1.03E-03	0.00E+00	8.51E-04	8.00E-05	1.62E-05	1.52E-02
Eutrophication potential (EP)	Freshwater	kg P eq.	1.43E-03	4.72E-06	0.00E+00	3.91E-06	3.67E-07	3.81E-09	-2.46E-06
	Marine	kg N eq.	1.33E-02	5.53E-04	0.00E+00	4.59E-04	4.31E-05	4.20E-06	4.76E-03
	Terrestrial	mol N eq.	1.37E-01	5.25E-03	0.00E+00	4.36E-03	4.09E-04	4.61E-05	9.09E-02
Formation potential of tropospheric ozone (POCP)		kg NMVOC eq.	4.12E-02	7.18E-04	0.00E+00	5.95E-04	5.59E-05	1.27E-05	1.87E-02
Abiotic depletion potential	Minerals and metals**	kg Sb eq.	5.82E-05	4.92E-08	0.00E+00	4.08E-08	3.83E-09	2.15E-10	-1.41E+01
	Fossil resources**	MJ	1.56E+02	1.39E+00	0.00E+00	1.15E+00	1.08E-01	3.02E-02	3.46E+01
Water scarcity potential (WDP)**		m^3	8.39E+00	1.64E+00	0.00E+00	1.36E+00	1.27E-01	2.43E-04	1.60E+01

** Disclaimer: The results of this environmental impact indicator should be used with caution as the uncertainty in these results is large or because there is limited experience with the indicator.

"E" means exponent (10x). For example, 3.5 E-02 means 3.5*10-2 and can be read as 0.035.

Use of resources

Results per functional or declared unit									
INDICATOR		UNIT	A1-A3	A4	C1	C2	C3	C4	D
Primary energy resources – Renewable	Use as energy carrier	MJ	1.27E+02	4.77E-01	0.00E+00	3.96E-01	3.72E-02	4.05E-03	-3.90E+01
	Used as raw materials	MJ	8.70E+01	0.00E+00	0.00E+00	0.00E+00	-8.70E+01	0.00E+00	0.00E+00
	TOTAL	MJ	2.14E+02	4.77E-01	0.00E+00	3.96E-01	-8.70E+01	4.05E-03	-3.90E+01
Primary energy resources – Non-renewable	Use as energy carrier	MJ	1.56E+02	1.39E+00	0.00E+00	1.15E+00	1.08E-01	3.02E-02	1.36E+01
	Used as raw materials	MJ	1.63E+01	0.00E+00	0.00E+00	0.00E+00	-1.63E+01	0.00E+00	0.00E+00
	TOTAL	MJ	1.72E+02	1.39E+00	0.00E+00	1.15E+00	-1.62E+01	3.02E-02	1.36E+01
Secondary material		kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable secondary fuels		MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable secondary fuels		MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.17E+01
Net use of fresh water		m^3	2.47E-01	3.82E-02	0.00E+00	3.16E-02	2.97E-03	7.43E-06	-5.80E-01

Waste production and output flows

Waste production

Results per functional or declared unit								
PARAMETER	UNIT	A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste disposed	kg	5.11E-02	5.86E-12	0.00E+00	4.86E-12	4.56E-13	3.20E-12	2.00E-09
Non-hazardous waste disposed	kg	7.20E-02	1.75E-04	0.00E+00	1.45E-04	1.37E-05	1.50E-01	2.07E+00
Radioactive waste disposed	kg	2.69E-03	1.51E-06	0.00E+00	1.25E-06	1.17E-07	3.17E-07	2.24E-04

Output flows

Results per functional or declared unit								
INDICATOR	**UNIT**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	9.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Other environmental performance indicators

Results per functional or declared unit								
INDICATOR	**UNIT**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-IOBC/GHG	kg CO2 eq	7.72E+00	9.20E-02	0.00E+00	7.63E-02	7.17E-03	2.24E-03	5.05E-02

References

- General Programme Instructions of the International EPD® System. Version 4.0.
- EN 15804:2012+A2:2019. Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. CEN European Committee for Standardisation (2019).
- EN 1685:2014 “Round and sawn timber – Environmental Product Declarations – Product category rules for wood and wood-based products for use in construction”
- Liljenroth, A., Al-Ayish, N. & Hallberg, L (2022). LCA methodology report for EPD tool for Kitchen & Bath for Vedum.
- Liljenroth, A., Al-Ayish, N. & Hallberg, L (2022). Generic LCA methodology report for Kitchen & Bath EPD tool for TMF.
- PCR 2019:14. Construction products. version 1.2.5 (2022-11-01)
- PCR 2019:14-c-PCR-006 Wood and wood-based products for use in construction (EN 16485) (2019-12-20). EPD International.

EPD®

www.environdec.com