Environmental Product Declaration

In accordance with ISO 14025 and Product Category Rules for Furniture

FRAME

from

LINTEX

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-05338
Publication date:	2022-05-19
Valid until:	2027-05-19

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.

Programme information

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

Product category rules (PCR): *Furniture, Except seats and mattresses 2012:19 version 2.01 valid until 2023-06-17*
PCR review was conducted by: *PCR Committee: Arper PsA Srl* *Moderator: Leo Breedveld, 2B Srl*
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification
Third party verifier: *David Althoff Palm, Ramboll Sweden AB, david.palm@ramboll.se* *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.

Company information

Owner of the EPD:
LINTEX AB
Madesjövägen 17
382 45 Nybro

Contact information:
Sara Gripstrand
Sustainability Manager
sara.gripstrand@lintex.se
Tel +46 735 068 471

Description of the organisation: Lintex is a Swedish producer of innovative writing boards and sound absorbing office screens, designed to inspire people to do great work, in offices, schools and institutions all over the world. Together with some of Scandinavia's leading designers and by using durable materials, such as tempered glass, high end textiles, solid wood, and enamelled steel, LINTEX creates well designed, functional products, made to last for a long time

LINTEX is a family business founded in 1983. Head office and factory are located in the town of Nybro in southern Sweden. LINTEX have subsidiary's, sales offices and agents elsewhere in Scandinavia, Europe and various parts of the world.

Working sustainably is a key element of LINTEX's strategy, culture and day-to-day operations. LINTEX understands that sustainability requires transformation. This means finding new ways of thinking and new innovative solutions. LINTEX has started the journey towards circular products with net zero climate impact. As of 2022 the production in Nybro is self-sufficient with respect to renewable energy, thanks to geothermal heating and over 4200 solar panels on the factory roof.

Management system-related certifications: LINTEX has been certified according to ISO 14001 since 2009. The company is also certified according to the FSC-STD-40-004 Chain of Custody Certification standard, certificate code DNV-COC-002282.

LINTEX Supplier code of conduct sets the scope for the company's supply chain management. LINTEX China is a member of the organization Sedex and use their third party SMETA-audits to verify social compliance.

Product information

Product name and description: LINTEX' FRAME is a double-sided glass mobile writing board surrounded by a bentwood frame. The board stands on a pair of oak feet and wheels. It comes in a variety of colours and in two different sizes, a large model (1200x1960 mm) and a small model (750x1960 mm), both of which are represented in this EPD. FRAME is suited for use in environments such as schools, offices and conference premises.

Additional information on use, reuse and end-of-life: For daily cleaning a whiteboard eraser or similar shall be used. For deep cleaning it is normally sufficient with water on a microfibre cloth. If the board is unusually dirty and stained, a designated alcohol-based cleaning solution may be used. Soap-based cleaning solution shall always be avoided since this is the most common cause of erasing problems and smearing ink.

When the board is no longer needed, LINTEX encourages the owner/holder to put the product on the market again, to enable reuse. When the product's end-of life is finally reached, the product shall be handled by a professional waste management company to enable material recycling.

Product-related certifications: FRAME is certified according to the Swedish labelling system Möbelfakta, ID 0320210316. FRAME is tested and approved according to EN 14434:2010 "Writing boards for educational institutions – Ergonomic, technical and safety requirements and their test methods".

For more product certifications, for example FSC (Forest Stewardship council®), see www.lintex.se.

LCA information

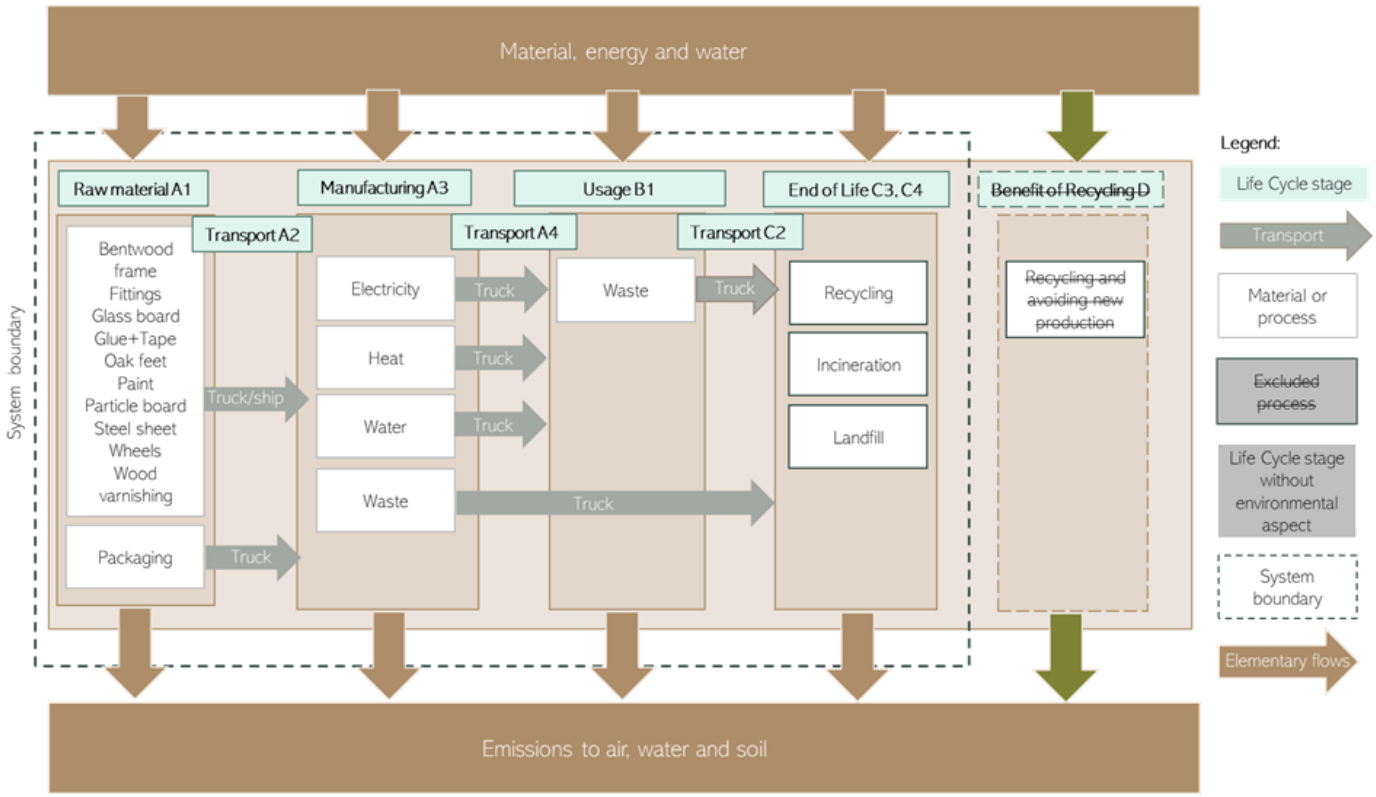
Declared Unit	The declared unit is 1 FRAME writing board. The large model is 1200 x 1960 mm and weighs 69,71 kg, the small model is 750 x 1960 mm and weighs 48,26 kg.
Product group classification	UN CPC 3812
Goal and Scope	The result will be used to understand where the environmental burden for the products occurs during the life cycle and aims to lay a road map for development to decrease this burden. The result will be communicated by the International EPD system. The audience includes resellers and end-clients.
Manufacturing Site	Nybro, Sweden.
Geographical Area	The product is globally available, but the model for transports and waste is based on Europe, which is Lintex' main market.
Compliant with	This EPD follows the "Book-keeping" LCA approach which is defined as attributional LCA in the ISO 14040 standard. In accordance with ISO 14025, ISO 14040 – ISO 140 44. This EPD follows the Product Category Rules Furniture, Except seats and mattresses 2012:19 version 2.01 valid until 2023-06-17
Cut-Off Rules	The following procedure is followed for the exclusion of inputs and output: - Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts shall be included A screening and expert judgement showed that the following aspects contribute less than 1% and could be cut-off: - Various supplier packaging - Potential transports from retailer to installation site - Energy and material use in installation - Cleaning and maintenance during use
Background data	The data quality is considered good. All site-specific data for raw materials, auxiliary materials as well as energy and emissions in the manufacturing process is from 2020 and have been represented with ecoinvent datasets. All other relevant environmental aspects have been represented by generic ecoinvent data. ecoinvent is the world's biggest LCI (Life cycle inventory) data library and the latest and most updated version was used. ecoinvent contains data for the specific geographical regions relevant for this study. The background data from ecoinvent 3.8 are from 2016-2020.
Electricity data	Electricity consumption in the A3 module comes from Lintex own production from installed solar cells and geothermal heat pumps.
Allocations	Polluter Pays / Allocation by Classification Two allocation rules are applied: 1) the raw material necessary for the manufacture is allocated by mass of the declared unit; 2) the energy necessary for the manufacture is allocated in MJ by production of the declared unit
Impact Assessment methods	Potential environmental impacts and resource use values are calculated according to the GPI and PCR using the SimaPro 9.3 software.
Based on LCA Report	Miljögiraff Lintex FRAME LCA report 1003FRAME
LCA Practitioner	Daniel Böckin, Miljögiraff AB
Software	SimaPro 9.3

System boundary

The EPD follows Cradle to grave (A1–C4) boundaries. A1 is defined as upstream, A2 and A3 as core and the remaining modules (A4-C4) as downstream. See the system diagram below for information about included modules.

Up-stream	Core			Downstream												
Raw materials	Transport	Manufacturing	Transport	Construction-Installation	Use stage	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	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	NR	NR	NR	NR	NR	NR	NR	NR	X	X	X	MND

X= included in the LCA, NR = module without environmental aspects MND= Module Not Declared.



Content and life cycle information

The following table shows the **material content** of the writing board and the percentage of recycled and renewable material in the product. The steel components come from LINTEX China, while the other components and materials come from external suppliers.

Components	Main material	Weight FRAME Large (kg)	Weight FRAME Small (kg)	Recycled material (wt%)		Renewable material (wt%)
				Pre-cons.	Post-cons.	
Glass board	Glass	41,5	25,7	19,8	0	0
Steel sheet	Steel	8,97	5,60	0	0	0
Other steel components	Steel	5,98	5,71	0	0	0
Particle board	Wood	5,25	4,22	0	84	84
Oak feet	Wood	2,05	2,05	0	0	100
Bentwood	Wood	1,93	1,63	0	0	100
Paint	Paint	1,40	0,98	0	0	0
Wheels	Nylon	1,40	1,40	0	0	0
Tape	Adhesive	0,85	0,62	0	0	0
Glue	Adhesive	0,25	0,15	0	0	0
Wood varnishing	Varnish	0,12	0,10	0	0	0
Total		69,7	48,2	L:11,8% S:10,5%	L: 6,3% S: 7,4%	L: 12,0% S: 15,0%
Packaging						
Cardboard	Corrugated board	5,41	2,53	0	75	100
Cardboard for feet	Corrugated board	0,70	0,70	0	0	0
EPS U-profile	EPS	0,58	0,45	0	30	0
Plastic bands	PP	0,03	0,03	0	0	0
Manual	Paper	0,01	0,01	0	100	100
Wooden stands	Wood	0,67	0,67	0	0	100
Substances of Very High Concern (SVHC)	**-**	**Weight large (kg)**	**Weight small (kg)**	**Weight-% (vs the product)**		**exceeds 0.1%**
(No SVHC exceeding 0,1 wt% in product)						

The majority of the product weight comes from the glass board, produced in Poland, and the steel components (steel sheet, foot brackets and fittings), produced in China.

Manufacturing takes place in Nybro, Sweden and includes cutting, painting, laminating and assembling. The energy consumption for manufacturing was estimated based on yearly energy use and total production of boards compared to LINTEX total production. It is, on a yearly basis, covered by LINTEX own production from their rooftop solar cells and their geothermal heat pump.

Packaging is shown in the table above, including wooden stands for transportation.

It is assumed that there are no environmental aspects during **installation** or **use** of the product, except the waste management of packaging after installation.

End of life is based on a generic European waste scenario where Lintex main markets are located.

Environmental performance

Potential environmental impact

PARAMETER		UNIT	FRAME Large				FRAME Small			
			Up-stream	Core	Down-stream	TOTAL	Up-stream	Core	Down-stream	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	1,58E+02	3,38E+01	7,22E+00	1,99E+02	1,10E+02	2,39E+01	5,39E+00	1,39E+02
	Biogenic	kg CO_2 eq.	-1,45E+01	3,20E-02	3,41E+01	1,96E+01	-1,37E+01	2,41E-02	2,56E+01	1,20E+01
	Land use and land trans-formation	kg CO_2 eq.	1,37E+00	1,66E-02	4,81E-04	1,39E+00	1,02E+00	1,24E-02	3,16E-04	1,03E+00
	TOTAL	kg CO_2 eq.	1,45E+02	3,39E+01	4,13E+01	2,20E+02	9,70E+01	2,40E+01	3,10E+01	1,52E+02
Acidification potential (AP)		kg SO_2 eq.	1,11E+00	1,85E-01	1,88E-02	1,31E+00	7,54E-01	1,37E-01	1,29E-02	9,03E-01
Eutrophication potential (EP)		kg PO_4^{3-} eq.	8,17E-02	2,86E-03	1,91E-04	8,47E-02	5,75E-02	2,23E-03	1,33E-04	5,98E-02
Photochemical oxidant formation potential (POFP)		kg NMVOC eq.	6,61E-01	1,42E-01	2,89E-02	8,32E-01	4,57E-01	1,04E-01	1,96E-02	5,80E-01
Abiotic depletion potential – Elements		kg Sb eq.	7,71E-04	1,89E-04	3,33E-06	9,63E-04	5,15E-04	1,55E-04	2,24E-06	6,73E-04
Abiotic depletion potential – Fossil resources		MJ, net calorific value	2,00E+03	4,95E+02	3,20E+01	2,52E+03	1,39E+03	3,46E+02	2,19E+01	1,76E+03
Water scarcity potential		m^3 eq.	4,33E+01	2,81E+00	2,92E-01	4,64E+01	3,11E+01	2,37E+00	1,74E-01	3,37E+01

Global warming potential IPCC 2021

PARAMETER	UNIT	FRAME Large				FRAME Small			
		Up-stream	Core	Down-stream	TOTAL	Up-stream	Core	Down-stream	TOTAL
GWP-GHG	kg CO_2 eq.	1,58E+02	3,36E+01	1,33E+01	2,05E+02	1,09E+02	2,37E+01	8,74E+00	1,42E+02

Use of resources

PARAMETER		UNIT	FRAME Large				FRAME Small			
			Up-stream	Core	Down-stream	TOTAL	Up-stream	Core	Down-stream	TOTAL
Primary energy resources – Renewable	Used as energy carrier	MJ, net calorific value	3,32E+02	8,03E+01	3,73E-01	4,13E+02	2,26E+02	7,83E+01	2,51E-01	3,05E+02
	Used as raw materi-als	MJ, net calorific value	2,22E+02	0,00E+00	0,00E+00	2,22E+02	1,89E+02	0,00E+00	0,00E+00	1,89E+02
	TOTAL	MJ, net calorific value	5,54E+02	8,03E+01	3,73E-01	6,34E+02	4,15E+02	7,83E+01	2,51E-01	4,94E+02
Primary energy resources – Non-renewable	Used as energy carrier	MJ, net calorific value	2,01E+03	5,26E+02	3,40E+01	2,57E+03	1,38E+03	3,68E+02	2,33E+01	1,77E+03
	Used as raw materi-als	MJ, net calorific value	1,32E+02	0,00E+00	0,00E+00	1,32E+02	1,12E+02	0,00E+00	0,00E+00	1,12E+02
	TOTAL	MJ, net calorific value	2,14E+03	5,26E+02	3,40E+01	2,70E+03	1,49E+03	3,68E+02	2,33E+01	1,88E+03
Secondary material		kg	1,26E+01	0,00E+00	0,00E+00	1,26E+01	8,63E+00	0,00E+00	0,00E+00	8,63E+00
Renewable secondary fuels		MJ, net calorific value	0,00E+00	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, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m^3	9,72E-01	8,92E-02	2,80E-02	1,09E+00	2,42E-01	1,47E-01	2,65E-01	6,53E-01

Waste production and output flows

Waste production

PARAMETER	UNIT	FRAME Large				FRAME Small			
		Up-stream	Core	Down-stream	TOTAL	Up-stream	Core	Down-stream	TOTAL
Hazardous waste disposed	kg	4,36E-04	0	0	4,36E-04	3,41E-04	0	0	3,41E-04
Non-hazardous waste disposed	kg	2,34E-02	0	0	2,34E-02	1,83E-02	0	0	1,83E-02
Radioactive waste disposed	kg	0	0	0	0	0	0	0	0

Output flows

PARAMETER	UNIT	FRAME Large				FRAME Small			
		Up-stream	Core	Down-stream	TOTAL	Up-stream	Core	Down-stream	TOTAL
Components for reuse	kg	0	0	0	0	0	0	0	0
Material for recycling	kg	0	3,78E-01	3,83E+01	3,87E+01	0	3,78E-01	2,53E+01	2,57E+01
Materials for energy recovery	kg	0	0	2,17E+01	2,17E+01	0	0	1,51E+01	1,51E+01
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0

Other environmental indicators

Impact category	UNIT	FRAME Large				FRAME Small			
		Up-stream	Core	Down-stream	TOTAL	Up-stream	Core	Down-stream	TOTAL
Human toxicity, cancer impacts	cases	5,02E-05	2,15E-06	1,93E-06	5,43E-05	3,77E-05	1,61E-06	1,40E-06	4,07E-05
Human toxicity, non-cancer impacts	cases	2,65E-05	4,77E-06	3,54E-06	3,48E-05	1,82E-05	3,52E-06	2,54E-06	2,42E-05
Fresh water ecotoxicity	PAF .m3 .day	5,94E+05	7,58E+04	2,95E+05	9,64E+05	4,01E+05	6,44E+04	2,54E+05	7,20E+05
Land use	species .yr	2,31E+03	4,93E+01	5,07E+00	2,37E+03	2,31E+03	4,93E+01	5,07E+00	2,37E+03

Share of biogenic carbon	Unit	Amount Large	Amount Small
Biogenic carbon in the product	kg C	3,56	3,36
Biogenic carbon in the packaging	kg C	3,03	1,74

Additional information

Overall, most of the environmental impact of FRAME can be attributed to the emission of greenhouse gases and particulate matter as well as, the use of fossil resources. Most of these occur in the production of raw materials, particularly the glass board and steel components. The impacts are caused mainly by the use of non-renewable electricity and fuel for the production of float glass and steel.

References

- Böckin, Daniel, Miljögiraff AB, FRAME LCA report 1003FRAME, 2022-04-06
- Ecoinvent 3.8, 'Ecoinvent' https://www.ecoinvent.org/database/database.html
- EN ISO 14025:2014-02 Environmental labels and declarations - Type III environmental declarations - Principles and procedures, Edited in 2010
- EN ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework, 2006
- EN ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines, 2006
- General Programme Instructions of the International EPD® System. Version 3.01
- Gripstrand, Sara, Sustainability Manager, Lintex AB
- ILCD International guide for life-cycle data system. General guide for life cycle assessment – Detailed guidance, 2010
- Product Category Rules Furniture, Except seats and mattresses 2012:19 version 2.01 valid until 2023-06-17
- PRé Consultants, "SimaPro 9.3" (PRé Consultants, 2019), http://www.pre-sustainability.com/simapro

EPD®

www.environdec.com