

Environmental Product Declaration



In accordance with ISO 14025 and Product Category Rules for Furniture

AIR

from

LINTEX

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Programme information

Programme:	<p>The International EPD[®] System</p> <p>EPD International AB Box 210 60 SE-100 31 Stockholm Sweden</p> <p>www.environdec.com info@environdec.com</p>
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Product category rules (PCR): <i>Furniture, Except seats and mattresses 2012:19 version 2.01 valid until 2023-06-17</i>
PCR review was conducted by: <i>PCR Committee: Arper PsA Srl Moderator: Leo Breedveld, 2B Srl</i>
Independent third-party verification of the declaration and data, according to ISO 14025:2006: <input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification
Third party verifier: <i>Bureau Veritas Certification Sverige AB</i> Accredited by: <i>SWEDAC (accreditation number 1236)</i>
Procedure for follow-up of data during EPD validity involves third party verifier: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 2020 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: The Lintex AIR is a wall-mounted frameless board functioning as a writing surface. It is made of a white or soft grey ceramic steel layer mounted on a wooden board with an aluminium foil layer. The board has bevelled edges and concealed fittings to create a sense that the board is floating on the wall. AIR is suited for use in environments such as schools, offices and conference premises.

AIR comes in different sizes, ranging from 990x1190 mm to 1190x2990 mm. For this EPD, the modelled whiteboard was 1990x1190 mm, weighing 23,3 kg. The table below shows all available AIR sizes and how to convert the EPD results from the baseline size (1990x1190 mm) by multiplying with a conversion factor. The factors are based on the surface area of the whiteboard, which means that an underlying assumption is that environmental impacts scale with the board surface for all impact categories. In practice, new results can be generated by multiplying with the conversion factor, which is simply the ratio of the writing surface area compared to the baseline area of 2,37 m² (1,99m by 1,19m).

Width (mm)	Height (mm)	Area (m ²)	Conversion factor	Comment
990	1190	1,18	0,50	
1490	1190	1,77	0,75	
1990	1190	2,37	1,00	Baseline
2490	1190	2,96	1,25	
2990	1190	3,56	1,50	
1190	1490	1,77	0,75	
1190	1990	2,37	1,00	
1190	2490	2,96	1,25	
1190	2990	3,56	1,50	

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 whiteboard 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: AIR is evaluated and recommended by Byggvarubedömningen, an assessment system for building related products evaluating chemical content and environmental impact during the life cycle (BVB ID: 145311).

AIR is tested for VOC and formaldehyde emissions according to ISO 16000-9:2006 and evaluated according to EN 16516:2017 (EU-LCI values). The test results meet the requirements for the Recommended class in Swedish Byggvarubedömningen and are in compliance with the requirements of M1 in the Finnish voluntary emission classification of building materials.

AIR is also tested and approved according to EN 14434:2010 "Writing boards for educational institutions – Ergonomic, technical and safety requirements and their test methods". For product certifications see www.lintex.se.

LCA information

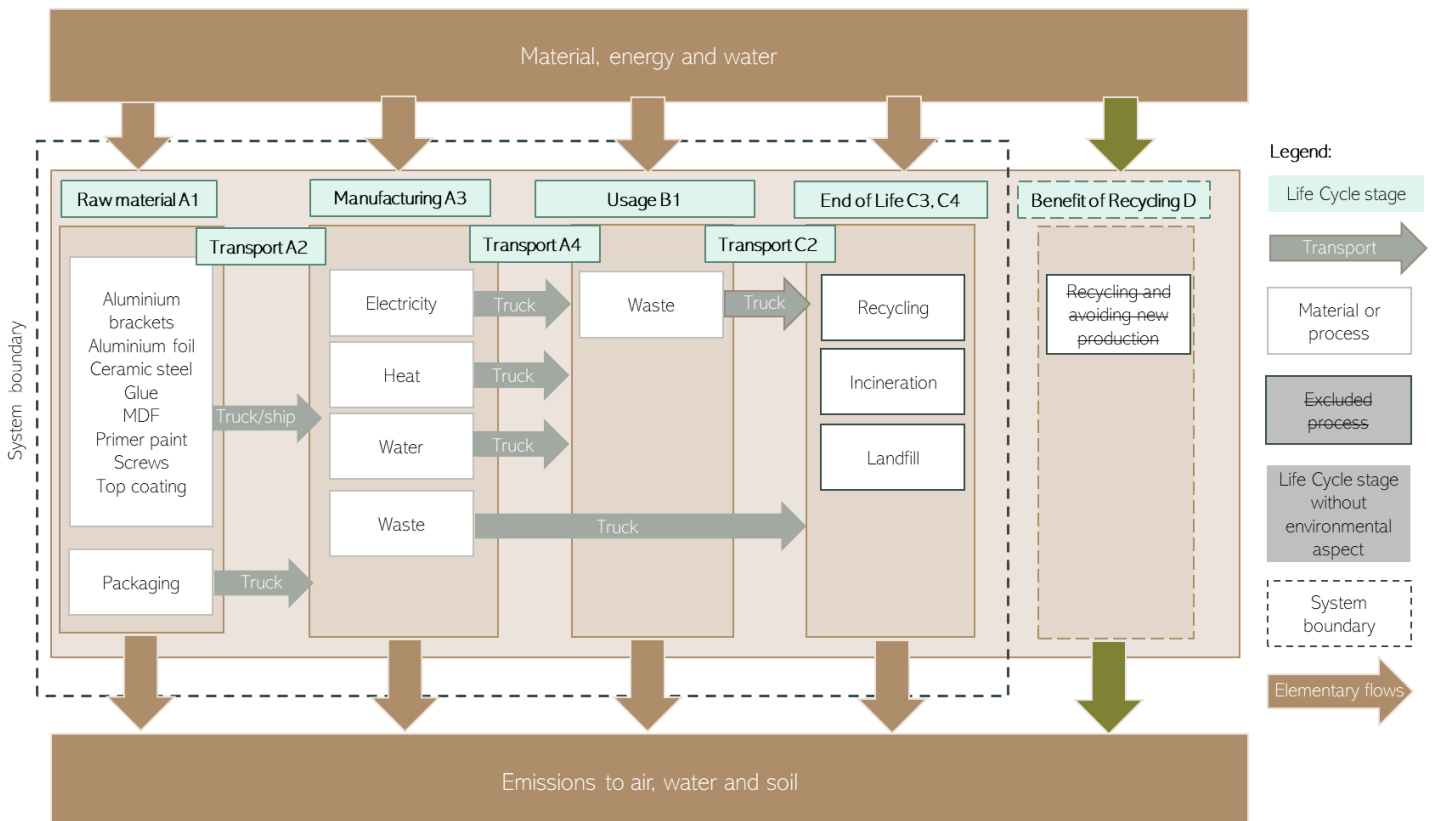
Declared Unit	The declared unit is 1 AIR whiteboard, weighing 23,8 kg, with standard size 1990 x 1190 mm.
Product group classification	UN CPC 3812
Goal and Scope	<p>The result will be used to understand where the environmental burden for the products occurs during the life cycle and aims to lay a road map for development to decrease this burden. The result will be communicated by the International EPD system.</p> <p>The audience includes resellers and end-clients.</p>
Manufacturing Site	Nybro, Sweden.
Geographical Area	Global
Compliant with	<p>This EPD follows the "Book-keeping" LCA approach which is defined as attributional LCA in the ISO 14040 standard.</p> <p>In accordance with ISO 14025, ISO 14040 – ISO 140 44.</p> <p>This EPD follows the Product Category Rules Furniture, Except seats and mattresses 2012:19 version 2.01 valid until 2023-06-17</p>
Cut-Off Rules	<p>The following procedure is followed for the exclusion of inputs and output:</p> <ul style="list-style-type: none"> - Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts shall be included <p>A screening and expert judgement showed that the following aspects contribute less than 1% and could be cut-off:</p> <ul style="list-style-type: none"> - Various supplier packaging - Potential transports from retailer to installation site - Energy and material use in installation - Cleaning and maintenance during use
Background data	<p>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.</p> <p>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 3.7.1 are from 2016-2020.</p>
Electricity data	Electricity consumption in the A3 module comes from Lintex own production from installed solar cells and geothermal heat pumps.
Allocations	<p>Polluter Pays / Allocation by Classification</p> <p>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</p>
Impact Assessment methods	<p>Potential environmental impacts are calculated with Environmental Footprint 3.0 method as implemented in SimaPro 9.2</p> <p>Resource use values are calculated from Cumulative Energy Demand V1.11.</p>
Based on LCA Report	Miljögiraff LCA Report 955 Lintex AIR.
LCA Practitioner	Daniel Böckin, Miljögiraff AB
Software	SimaPro 9.2

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 mobile writing board and the percentage of recycled and renewable material in the product. The aluminium brackets come from Lintex China, while the other components and materials come from external suppliers.

Components	Main material	Weight (kg)	Recycled material (wt%)		Renewable material (wt%)
			Pre-cons.	Post-cons.	
Aluminium brackets	Aluminium	0,63	0	0	0
Aluminium foil	Aluminium	0,64	0	40	0
Ceramic steel (glass enamel)	Steel	7,41	0	0	0
Medium Density Fibreboard	Wood	14,87	0	0	82
Glue	Glue	0,17	0	0	0
Paint	Paint	0,04	0	0	0
Screws	Steel	0,02	0	0	0
Total		23,78	0	1,1%	51%
Packaging					
Corner/middle protectors	EPS	0,295	0	0	0
Small corner protectors	LDPE	0,032	0	0	0
Manual	Paper	0,005	0	100	100
Carton	Cardboard	5,5	0	50	100
Plastic band	PP	0,02	0	0	0
Wooden stands	Wood	2,9	0	0	100
Substances of Very High Concern (SVHC)	-	Weight (mg)	Weight-% (versus the product)		exceeds 0.1%
(No SVHC reported)	-	-	-	-	-

The majority of the product weight comes from the Medium Density Fibreboard, produced in Belgium, and the ceramic steel, produced in Japan. The ceramic steel makes up the writing surface and consists of 90% steel and 10% enamel.

Manufacturing takes place in Nybro, Sweden and includes water cutting, milling, gluing, painting and assembling. The energy consumption for manufacturing was estimated based on yearly energy use and total production of whiteboards 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 racks and pallets 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 scenario of Dutch waste management as an approximation for European waste management, where Lintex main markets are located.

Environmental performance

Potential environmental impact

PARAMETER		UNIT	Upstream	Core	Downstream	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	83,41	6,75	5,90	96,06
	Biogenic	kg CO ₂ eq.	-42,66	0,80	48,36	6,50
	Land use and land transformation	kg CO ₂ eq.	0,22	0,01	0,00	0,23
	TOTAL	kg CO ₂ eq.	41,69	7,56	54,25	103,50
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	3,83E-06	1,33E-06	8,56E-07	6,02E-06
Acidification potential (AP)		kg SO ₂ eq.	0,32	0,05	0,01	0,39
Eutrophication potential (EP)		kg PO ₄ ³⁻ eq.	0,07	0,00	0,00	0,08
Photochemical oxidant formation potential (POFP)		kg NMVOC eq.	0,19	0,03	0,01	0,23
Abiotic depletion potential – Elements		kg Sb eq.	0,00	0,00	0,00	0,00
Abiotic depletion potential – Fossil resources		MJ, net calorific value	1090,92	91,66	58,05	1240,64
Water scarcity potential		m ³ eq.	16,05	1,13	0,34	17,52

Global warming potential IPCC 2013

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
GWP-GHG	kg CO ₂ eq.	82,5	6,7	10,3	99,5

Use of resources

PARAMETER		UNIT	Upstream	Core	Downstream	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	222,3	45,9	0,9	269,2
	Used as raw materials	MJ, net calorific value	309,1	0,0	0,0	309,1
	TOTAL	MJ, net calorific value	531,4	45,9	0,9	578,2
Primary energy resources – Non-	Use as energy carrier	MJ, net calorific value	1131,2	97,4	61,7	1290,3
	Used as raw materials	MJ, net calorific value	18,1	0,0	0,0	18,1

renewable	TOTAL	MJ, net calorific value	1149,3	97,4	61,7	1308,4
Secondary material		kg	0,3	0,0	0,0	0,3
Renewable secondary fuels		MJ, net calorific value	0,0	0,0	0,0	0,0
Non-renewable secondary fuels		MJ, net calorific value	0,0	0,0	0,0	0,0
Net use of fresh water		m ³	0,82	0,20	0,00	1,0

Waste production and output flows

Waste production

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Hazardous waste disposed	kg	0,0005	0	0	0,0005
Non-hazardous waste disposed	kg	3,84	0	0	3,84
Radioactive waste disposed	kg	0,001	0	0	0,001

Output flows

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Components for reuse	kg	0	0	0	0
Material for recycling	kg	0,005	0,01	6,93	6,95
Materials for energy recovery	kg	0	0	0	0
Exported energy, electricity	MJ	0,1	0	0	0
Exported energy, thermal	MJ	0,17	0	0	0

Other environmental indicators

Impact category	UNIT	Upstream	Core	Downstream	TOTAL
Human toxicity, cancer impacts	cases	1,89E-05	9,38E-07	6,01E-07	2,04E-05
Human toxicity, non-cancer impacts	cases	1,12E-05	9,80E-07	1,35E-06	1,35E-05
Fresh water ecotoxicity	PAF .m3 .day	8,22E+05	8,81E+04	3,39E+05	1,25E+06
Land use	species.yr	2,97E+03	2,75E+03	1,78E+02	5,90E+03

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