Environmental Product Declaration

In accordance with ISO 14025:2006 for:

Bobi Mailbox Classic

from

Bobi.com Oy

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-0XXXX
Publication date:	202X-XX-YY
Valid until:	202X-XX-YY

Programme information

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

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
PCR: *Fabricated metal products, except construction products,2023:01, version 1.0.1, UN CPC 412, 414, 416, 42*
PCR review was conducted by: *The International EPD® System, EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden.* *Website: www.environdec.com E-mail: info@environdec.com,* *Gorka Benito Alonso, IK INGENIERIA, g.benito@ik-ingenieria.com* *Mats Zackrisson (PCR co-moderator for aluminium industry), RISE Research Institutes of Sweden, mats.zackrisson@ri.se*
Life Cycle Assessment (LCA)
LCA accountability: *Luxin Zhang, Bening Mayanti*
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: *<name, organisation, and signature of the third-party verifier>* Approved by: The International EPD® System
OR
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ EPD verification by accredited certification body Third-party verification: *<name, organisation>* is an approved certification body accountable for the third-party verification The certification body is accredited by: *<name of accreditation body & accreditation number, where applicable>*
OR

Independent third-party verification of the declaration and data, according to ISO 14025:2006 via:

☐ EPD verification by EPD Process Certification*

Internal auditor: <*name, organisation*>

Third-party verification: <*name, organisation*> is an approved certification body accountable for third-party verification

Third-party verifier is accredited by: <*name of accreditation body & accreditation number, where applicable*>

*For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI.

Procedure for follow-up of data during EPD validity involves third-party verifier:

☐ Yes ☐ No

[Procedure for follow-up the validity of the EPD is at minimum required once a year with the aim of confirming whether the information in the EPD remains valid or if the EPD needs to be updated during its validity period. The follow-up can be organized entirely by the EPD owner or together with the original verifier via an agreement between the two parties. In both approaches, the EPD owner is responsible for the procedure being carried out. If a change that requires an update is identified, the EPD shall be re-verified by a verifier]

Product information

Product name:

Mailbox Bobi classic

Product identification:

Product Name: Mailbox Bobi classic
Manufacturer: Bobi.com Oy

Product description:

The original Bobi Classic mailbox is the most popular mode (19 l). Daily mail and even a few days' worth of mail can easily fit in it and be stored safely. The material of the Bobi mailbox is hot-dip galvanized 1 mm steel and the surface treatment is powder coating. The mailbox is available in many colors and equipped with a Bobi lock and comes with 3 keys.

This declaration covers seven sub-products of Bobi classic mailbox in which the material and production are the same except the color/edition. These products are letterbox bobi classic green, letterbox bobi classic grey+inox, letterbox bobi classic red, letterbox bobi classic structure black, letterbox bobi classic white, mailbox bobi classic (moomin reads), mailbox bobi classic (the moomins).

Geographical scope:

Global

LCA information

Functional unit / declared unit:

One Bobi classic Mailbox

Reference service life:

20-25 years

Time representativeness:

Data Collection Period: 2022
Reference Year: 2022
Historical Data: 2010-2022

Database(s) and LCA software used:

Database: Ecoinvent EN15804 database
LCA software: OpenLCA

System diagram:

Upstream Raw Material Supply

The production starts with the material supply. This stage includes the mining and processing of raw materials, the generation of electricity and fuels required for the manufacturing stage.

Upstream transportation of raw materials to manufacturer

Transportation is relevant to delivery of raw materials from the supplier to the gate of manufacturing plant. Raw materials for the production are transported by trucks and vessels from different regions all over the world.

Upstream raw material production

Manufacturing stage includes the production of galvannealed metal sheet, plastic parts, metal parts, pallet, carton boxes, cardboard.

Core stage transportation to Leimec

Transportation is relevant to delivery of materials from the supplier to the gate of Leimec.

Core stage Mailbox production process

Manufacturing stage includes metal sheet cutting, bending, welding.

Core stage transport to coating factory

Core stage Powder Coating process

Core stage Transportation from coating factory to Leimec

Assembly and packing

Core stage Waste recycles process

This module includes scrap recycling of metal steel plates after cutting.

Description of system boundaries:

The scope of the study is set to be Cradle-to-gate. The systems boundaries are strictly referred to the PCR (2023:01, 1.0.1) described in more detail below:

Upstream processes

Upstream processes include:

• Extraction and production of raw material for all main parts, components, and coating.
• Transportation of raw material to the upstream processes.
• Generation of electricity and production of fuels, steam and other energy carriers used in upstream processes.

Core processes

Core processes include:

• Transportation of steel and other materials and components to the core process where the final mailbox product will be manufactured.
• Manufacturing process. Manufacturing of mailbox includes: cutting, bending, welding, coating, assembly, and packing.

Excluded lifecycle stages:

Transportation to End Consumers: In this LCA, the transportation of the Classic Mailbox to end consumers is excluded from the analysis. This exclusion assumes that the environmental impacts of transportation largely depend on factors such as transportation distance, mode of transport, and individual consumer choices, which can vary widely. As such, including this stage would introduce significant variability and complexity into the assessment, making it challenging to provide accurate and representative data.

Consumer Use Phase: The use phase of the Classic Mailbox is not considered in this LCA. This exclusion is justified by the assumption that the mailbox's impact during the consumer use phase is minimal and primarily related to factors such as installation, maintenance, and usage patterns, which are highly dependent on individual consumer behaviours and location. Furthermore, these impacts are typically spread over an extended period, and precise data collection from consumers would be challenging.

Repurposing and Reuse: The potential for repurposing or reuse of Classic Mailboxes is not included in this LCA. The decision is based on the lack of comprehensive data and the wide range of possible scenarios for repurposing, making it difficult to assess accurately. However, end-of-life processes such as recycling, and disposal are considered.

The exclusion of these lifecycle stages allows for a more focused assessment of the environmental impacts of the Classic Mailbox within the defined system boundaries. The omitted stages involve a high degree of variability and uncertainty, which could complicate the LCA analysis. Therefore, by excluding them, the study can provide more precise and relevant insights into the mailbox's environmental performance across its primary lifecycle stages.

More information:

Assumptions:

The LCA study assumes a standard service life for Classic Mailboxes based on typical industry practices.

Data related to steel and plastic production are based on the most recent industry averages and regional data available.

It is assumed that the electricity mix used during manufacturing processes aligns with the regional energy grid.

Content declaration

Product

Product components	Name	Weight (kg)	Weight (%)
Metal	Galvannealed steel	6	77.4%
Coating	Polyester	0.22	2.8%
Plastics	ABS, DPE, film, bags	0.07	0.9%
Wood product	Carton board, cardboard, pallet	1.47	18.9%
Total		7.75	100%

Packaging

Distribution packaging:

The distribution packaging for Classic Mailboxes consists of corrugated cardboard boxes for bulk shipments. These cardboard boxes are recyclable and are selected for their strength and durability to protect the product during transportation.

Consumer packaging:

The consumer packaging for Classic Mailboxes is designed to be minimal, with a focus on showcasing the product. It consists of a cardboard sleeve with product images and information. The sleeve is made from sustainably sourced paper and is recyclable.

Environmental performance

Impact category indicators

PARAMETER		UNIT	Upstream (A1)	Core (A2)	Core (A3)	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	2.24E+01	1.21E+00	1.81E-01	2.38E+01
	Biogenic	kg CO_2 eq.	-3.68E-01	8.64E-02	1.30E-02	-2.68E-01
	Land use and land transformation	kg CO_2 eq.	6.06E-02	5.86E-03	8.79E-04	6.73E-02
	TOTAL	kg CO_2 eq.	2.21E+01	1.30E+00	1.95E-01	2.36E+01
Ozone layer depletion (ODP)		kg CFC 11 eq.	1.23E-06	6.35E-08	9.53E-09	1.31E-06
Acidification potential (AP)		mol H^+ eq.	5.85E-02	6.29E-03	9.42E-04	6.57E-02
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	5.93E-03	9.29E-04	1.39E-04	7.00E-03
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	3.40E-02	2.72E-03	4.07E-04	3.71E-02
Abiotic depletion potential (ADP)	Metals and minerals	kg Sb eq.	2.58E-03	1.20E-05	1.80E-06	2.59E-03
	Fossil resources	MJ, net calorific value	2.56E+02	1.05E+01	1.57E+00	2.68E+02
Water deprivation potential (WDP)		m^3 world eq. deprived	2.34E+01	1.12E+00	1.68E-01	2.46E+01

Resource use indicators

PARAMETER		UNIT	Upstream (A1)	Core (A2)	Core (A3)	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1.85E+01	5.26E+00	7.88E-01	2.45E+01
	Used as raw materials	MJ, net calorific value	5.62E+01	1.36E+00	2.04E-01	5.78E+01
	TOTAL	MJ, net calorific value	7.47E+01	6.61E+00	9.92E-01	8.23E+01
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	2.53E+02	2.84E+01	4.25E+00	2.85E+02
	Used as raw materials	MJ, net calorific value	2.26E+02	6.36E+00	9.53E-01	2.33E+02
	TOTAL	MJ, net calorific value	4.78E+02	3.47E+01	5.21E+00	5.18E+02
Renewable secondary fuels (optional)		MJ, net calorific value	9.94E-02	1.38E-01	2.08E-02	2.59E-01
Non-renewable secondary fuels (optional)		MJ, net calorific value	3.49E-01	2.76E-01	4.14E-02	6.66E-01
Net use of fresh water (optional)		m^3	5.68E-02	2.61E-02	3.91E-03	8.68E-02

The result tables shall only contain values or the letters "INA" (Indicator Not Assessed). It is not possible to specify INA for mandatory indicators. INA shall only be used for voluntary parameters that are not quantified because no data is available.

Waste indicators

PARAMETER	UNIT	Upstream (A1)	Core (A2)	Core (A3)	TOTAL
Hazardous waste disposed	kg	8.60E+00	4.59E+00	6.88E-01	1.39E+01
Non-hazardous waste disposed	kg	9.64E-01	8.49E-02	1.27E-02	1.06E+00
Radioactive waste disposed	kg	1.02E-02	1.02E-02	1.52E-03	2.19E-02

Additional environmental information

List of abbreviations

ADP	Abiotic Depletion Potential
AP	Acidification Potential
BOM	Bill of Materials
EP	Eutrophication Potential
EPD	Environmental Product Declaration
FW	Net Use of Freshwater
GWP	Global warming potential
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
LCI	Life Cycle Inventory
LCIA	Life Cycle Impact Assessment
NRSF	Non-renewable Secondary Fuels
PCR	Product Category Rules
PENRT	Primary Energy Resources - Non-renewable Total
PERT	Primary Energy Resources – Renewable Total
POCP	Photochemical Oxidant Creation Potential
RSF	Renewable Secondary Fuels
WDP	Water deprivation potential

References

General Programme Instructions of the International EPD® System. Version 01.2023.
PCR 2023:01. Fabricated metal products, except construction products. 1.0.1

International Organization for Standardization. (2006b). Environmental management — Life cycle assessment — Principles and framework (ISO Standard No. 14040:2006).

International Organization for Standardization. (2006c). Environmental management — Life cycle assessment — Requirements and guidelines (ISO Standard No. 14044:2006).

Cruz-Romero, M. (2010). Crop-based biodegradable packaging and its environmental implications. Cab Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources, 3. https://doi.org/10.1079/PAVSNNR20083074.

International Organization for Standardization. (2006). ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

European Commission - Joint Research Centre - Institute for Environment and Sustainability. (2010). International Reference Life Cycle Data System (ILCD) Handbook - General Guide for Life Cycle Assessment - Detailed Guidance (1st ed.). EUR 24708 EN. Luxembourg: Publications Office of the European Union.

Wolf, M.-A., Chomkhamsri, K., Brandao, M., Pant, R., Ardente, F., Pennington, D., Manfredi, S., de Camillis, C., & Goralczyk, M. (2010). International reference life cycle data system (ILCD) handbook - General guide for life cycle assessment - Detailed guidance (JRC48157 ed.). Publications Office of the European Union. https://publications.jrc.ec.europa.eu/repository/handle/JRC48157

Finkbeiner, M. (2014). The International Standards as the Constitution of Life Cycle Assessment: The ISO 14040 Series and its Offspring. In W. Klöpffer (Ed.), Background and Future Prospects in Life Cycle Assessment (LCA Compendium – The Complete World of Life Cycle Assessment). Springer. https://doi.org/10.1007/978-94-017-8697-3_3.

EPD®

www.environdec.com