

Environmental Product Declaration



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

Framery One

from

framery

Programme:	The International EPD® System, www.environdec.com
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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
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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 c-PCR-021 Furniture (c-PCR to PCR 2019:14) (Adopted from EPD Norway) Version 2.0
PCR review was conducted by: Mie Vold, Ostfold Research
Life Cycle Assessment (LCA)
LCA accountability: Gaia Consulting
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: <input checked="" type="checkbox"/> EPD verification by individual verifier Third-party verifier: Daniel Böckin, Miljögiraff AB, daniel@miljogiraff.se Approved by: The International EPD® System
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 registered in different EPD programmes, or not compliant with EN 15804, 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. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Framery Oy, Patamäenkatu 7 33900 Tampere, Finland,

Contact: sustainability@frameryacoustics.com

Description of the organisation: Framery is an industry pioneer and global leader engineering and manufacturing soundproof pods, services and solutions that enable people at work to focus on what really matters and get things done. Framery was born from a necessity to re-think the office and will continue to shape the world of work in the future. We improve the flow of work with our technology-driven products, solutions, tools and services. With a strong focus on research and development, as well as a firm commitment to practice what we preach, we remain determined to empower people to get things done – in a sustainable manner.

Product-related or management system-related certifications: Framery's management system is certified against ISO 9001, ISO 14001, and ISO 45001.

Name and location of production site(s): Framery Oy, Tampere Finland

Product information

Product name: Framery One

Product identification: Framery One is a digital soundproof pod for one person.

Product description: Framery One is a highly adaptable workspace for one person. The sound insulation standards and echo-free acoustics keep you free from outside noise or distractions. Ventilation speeds ensure high air quality inside the pod, keeping you fresh and focused. Adjustable lighting from the ceiling light and front-facing video conferencing light lets you set your preferred atmosphere for video meetings, focus work, or any other uses. The height-adjustable table provides a generous working space, large enough for all of your devices and any other personal items. A height-adjustable seat is available as an option. The exterior materials of the pod include powder-coated steel panels, matt-black steel and aluminium frames, and sound control laminated glass. The interior walls and roof are a sandwich element of sheet metal and recycled acoustic foam as well as PET sheets laminated in polyester. The floor is an anti-static and stain resistant low loop pile carpet.

Technical data: The weight of the product is 357 kg and exterior size is 225.5 cm x 122 cm x 100 cm (h, w, d).

UN CPC code: 3812

Geographical scope: Global

The geographical scope is global based on the actual sales data to different countries which has been taken into account in the calculation.

Market where the declared product is distributed: Global

LCA information

Functional unit: The functional unit is one Framery One, maintained during its lifetime of 10 years (determined based on technical and esthetical aspects). The functional unit is defined as the lifetime of one Framery One.

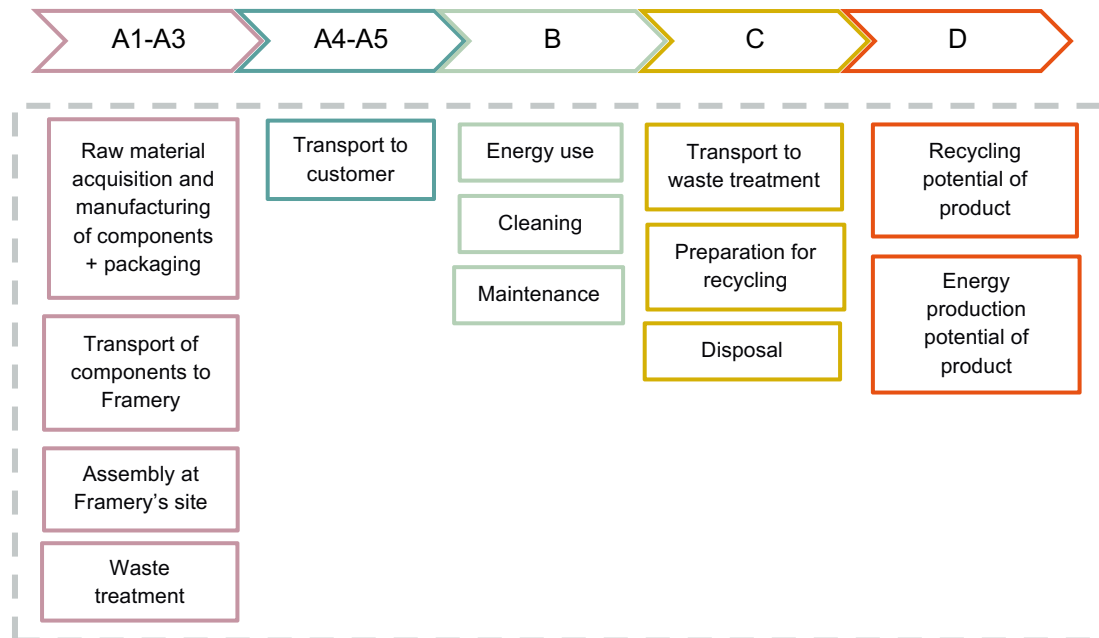
Reference service life: 10 years. No products have reached their end-of-life, so reference service is based on conservative estimate of product experts. It is aligned with c-PCR applied.

Time representativeness: Primary data for the LCA is based on production for a period of 12 months (year 2022). Other calculation data is based on the best available data at the time of preparing the LCA (4/2023).

Database(s) and LCA software used: The main database used is Ecoinvent 3.8. A few datasets were also used from ELCD 3.2 and Industry data 2.0 (Plastics Europe, World Steel and ERASM). SimaPro LCA Software (SimaPro Analyst ver. 9.4.0.2) was used.

Description of system boundaries: Cradle to grave and module D (A + B + C + D)

System diagram:



More information:

LCA practitioner: Gaia Consulting Oy, Bulevardi 6A, 00120 Helsinki, Finland
tel. +358 9 686 6620, info@gaia.fi

Calculation assumptions:

All relevant components of the Framery One have been included in the assessment with no cut-off percentage by mass of components. Mass allocation has been used by default unless there was a justified reason to do otherwise. The main impact categories were calculated according to EN 15804 + A2 methodology in Simapro. GWP-GHG was calculated through modification of the climate change indicator in EN 15804 according to the instructions in the Construction sector PCR 2019:14. Biogenic carbon content of materials was calculated using the formula in EN 16449. The resource indicators for energy carriers were calculated using CED for primary energy. Primary energy materials used as raw materials were calculated using LHV values from the Phyllis 2 database for the main raw materials in the product. The resource use indicators results differ from previous Framery product EPDs due to updated calculation methodology. Freshwater and waste indicators were calculated from the life cycle inventory in Simapro.

Modules A1-A3:

Primary data was requested from all suppliers and secondary data was used when primary data was unavailable. Region-specific secondary data was used when the production region was known, and global data was otherwise used. When the exact production process of the supplier was unknown, an assumption for most likely production method was used. Transport distances of components to the assembly site were estimated based on the known or assumed locations of suppliers. For assembly at Framery's site in Finland, primary data on the year 2022 was used. Allocation based on assembly time was used instead of mass for allocating burdens to the different Framery products assembled. The reasoning for this is that assembly time accounts more accurately for the complexity of the products and yields more conservative results for Framery One.

Module A4-A5:

Transportation to customers was calculated based on a weighted average between the various distribution locations. Data is based on a detailed shipment log from Framery. The types of trucks for each transport leg were unknown so the size was assumed to be 16-32 tons. For Northern Europe Euro 6 class trucks were assumed while Euro 5 was assumed for the rest of the world. The capacity utilization of the trucks is unknown as generic Ecoinvent datasets were used. Overseas transport was assumed to take place via container ship. As in the c-PCR followed for furniture, installation A5 is a manual procedure and therefore environmental impacts are considered zero or negligible.

Module B1-B7:

There are no direct emissions from use (B1). In B2, ac according to the c-PCR, cleaning is included. Vacuuming every two weeks is assumed while all other cleaning is assumed negligible in environmental impact. For B3, there is no known standard need for repair during the lifetime and therefore this module is estimated at zero or negligible. In B4, the replacement of the air filter annually is accounted for. B6 includes electricity use of the product. A mid-point of a recommended ideal use scenario was assumed where the pod is used 35% of each working day. Electricity consumption when cooling down and being empty were also included. The origin of the electricity was estimated based on the same distribution locations as were used in A4. Operational water use B7 is zero or negligible for the product.

Module C1-C4:

The disassembly process of the products is assumed to be mainly manual and therefore environmental impacts are zero or negligible. In C2, a transportation distance of 50 km to waste treatment was assumed. In C3, waste sorting and processing of relevant fractions was included. In C4, all unrecycled waste was assumed to be 50% incinerated and 50% landfilled, except for glass which was assumed to be 100% landfilled, as a conservative estimate.

Module D:

For steel and aluminium, an 85% recycling rate was assumed, 30% for plywood, and 75% for cardboard. The loads and benefits of recycling were calculated assuming the materials replace virgin production and there is no quality difference between recycled and virgin. Energy recovery from waste incineration in Module C was included. Heat from waste incineration was assumed to replace heat produced via natural gas and electricity from waste incineration was assumed to replace global generic electricity.

Modules that have 0 as entries are excluded from the result tables in the rest of this document to increase legibility of the results.

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	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Geography	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO
Specific data used	60 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	N/A			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	Single site			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Steel	185	0 %	0
Glass	91	0 %	0
Aluminium	31	0 %	0
Plastic glass fiber composite	12	0 %	0
Polyester	10	10 %	0
Plywood	7	0 %	82 %, 0,4 kg C/kg
PET	6	22 %	0
Polycarbonate	4	0 %	0
Nylon 66	1	0 %	0
ABS	1	0 %	0
Latex	1	0 %	0
PP	1	0 %	0
Synthetic rubber	1	0 %	0
Other	5	0 %	0
TOTAL	357	1 %	2 %, 0,008 kg C/kg
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Plywood	61	17 %	0,5
Cardboard	59	16 %	0,09
Strawboard	8	2 %	0,09
Polyethylene foam	1	0 %	0
Expanded polystyrene	0,3	0 %	0
TOTAL	129	36 %	0,31

There are no SVHC substances in the product or their amount is negligible.

Results of the environmental performance indicators

All environmental impacts are given per functional unit, one Framery One.

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit										
Indicator	Unit	A1-A3	A4	B2	B4	B6	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	2,12E+03	8,49E+01	1,33E+01	2,20E+00	3,53E+02	2,98E+01	5,54E+01	1,60E+01	-5,66E+02
GWP-biogenic	kg CO ₂ eq.	-9,62E+01	2,37E-02	2,94E-01	8,51E-04	7,80E+00	7,74E-03	2,33E+00	1,16E+02	2,70E+01
GWP-luluc	kg CO ₂ eq.	3,15E+00	9,98E-04	2,88E-02	9,68E-04	7,65E-01	5,63E-04	7,26E-02	1,79E-03	-1,34E+00
GWP-total	kg CO ₂ eq.	2,03E+03	8,49E+01	1,36E+01	2,20E+00	3,62E+02	2,98E+01	5,79E+01	1,36E+02	-5,40E+02
ODP	kg CFC 11 eq.	3,61E-04	1,91E-05	6,16E-07	6,43E-08	1,64E-05	6,58E-06	2,87E-06	4,66E-07	-1,74E-05
AP	mol H ⁺ eq.	1,33E+01	1,21E+00	6,24E-02	1,11E-02	1,66E+00	1,88E-01	2,01E-01	2,87E-02	-3,40E+00
EP-freshwater	kg P eq.	9,93E-02	7,36E-05	1,16E-03	7,35E-05	3,08E-02	1,46E-05	8,56E-04	1,65E-04	-1,45E-02
EP-marine	kg N eq.	2,54E+00	3,19E-01	8,70E-03	1,61E-03	2,31E-01	7,66E-02	4,35E-02	6,08E-02	-4,59E-01
EP-terrestrial	mol N eq.	2,30E+01	3,54E+00	9,86E-02	1,72E-02	2,62E+00	8,42E-01	4,80E-01	1,15E-01	-5,94E+00
POCP	kg NMVOC eq.	7,62E+00	9,14E-01	2,71E-02	5,90E-03	7,21E-01	2,96E-01	1,36E-01	4,21E-02	-2,00E+00
ADP-minerals&metals*	kg Sb eq.	2,48E-02	3,35E-06	6,37E-07	3,37E-07	1,69E-05	1,26E-06	1,13E-03	1,05E-06	2,61E-03
ADP-fossil*	MJ	2,55E+04	1,16E+03	2,54E+02	3,40E+01	6,74E+03	4,04E+02	3,54E+02	3,89E+01	-5,10E+03
WDP*	m ³	5,65E+02	-7,75E-02	2,81E+00	6,35E-01	7,46E+01	4,17E-02	3,87E+00	1,96E+00	-7,90E-01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

Additional mandatory and voluntary impact category indicators

Indicator	Unit	A1-A3	A4	B2	B4	B6	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2,14E+03	8,49E+01	1,34E+01	2,20E+00	3,55E+02	2,98E+01	5,71E+01	5,97E+01	-5,66E+02
Particulate matter	disease inc.	1,24E-04	4,49E-06	2,35E-07	1,44E-07	6,24E-06	4,25E-06	3,90E-06	3,74E-07	-4,20E-05
Ionising radiation	kBq U-235 eq	7,39E+01	5,01E+00	2,33E+00	3,64E-02	6,20E+01	1,76E+00	1,09E+00	1,34E-01	-3,15E+00
Ecotoxicity, freshwater	CTUe	4,54E+04	4,36E+02	1,30E+02	3,88E+01	3,46E+03	1,35E+02	1,19E+03	3,20E+03	-1,12E+04
Human toxicity, cancer	CTUh	4,32E-06	8,80E-09	2,24E-09	3,83E-10	5,94E-08	1,44E-09	2,25E-08	5,78E-09	6,29E-07

Resource use indicators

Results per functional or declared unit										
Indicator	Unit	A1-A3	A4	B2	B4	B6	C2	C3	C4	D
PERE	MJ	3560	1,63	45,3	0,963	1200	0,531	25,6	469	-457
PERM	MJ	1970	0	0	0	0	0	0	-468	-213
PERT	MJ	5520	1,63	45,3	0,963	1200	0,531	25,6	1,06	-670
PENRE	MJ	26500	1230	267	36,4	7100	429	379	329	-5410
PENRM	MJ	574	0	0	0	0	0	0	-287	0
PENRT	MJ	27100	1230	267	36,4	7100	429	379	41,6	-5410
SM	kg	87,3	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m ³	26,6	0,0770	0,0728	0,00740	1,94	0,0264	0,1294	0,0852	2,85
Acronyms	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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

¹ This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

Waste indicators

Results per functional or declared unit										
Indicator	Unit	A1-A3	A4	B2	B4	B6	C2	C3	C4	D
Hazardous waste disposed	kg	1,1	0	0	0	0	0	0	0	0
Non-hazardous waste disposed	kg	183	0	0	0,50	0	0	0	357	0
Radioactive waste disposed	kg	0,0834	0	0	0	0	0	0	0	0

Output flow indicators

Results per functional or declared unit										
Indicator	Unit	A1-A3	A4	B2	B4	B6	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0	0
Material for recycling	kg	15,9	0	0	0	0	0	0	124	0
Materials for energy recovery	kg	16,2	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	94,6
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	191

References

General Programme Instructions of the International EPD® System. Version 4.0.

PCR 2019:14. Construction products. Version 1.2.5

c-PCR-021 Furniture (c-PCR to PCR 2019:14) (Adopted from EPD Norway) Version 2.0

EN 15804:2012 + A2:2019, Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

ISO 14040:2006, Environmental management - Life cycle assessment - Principles and framework

ISO 14044:2006, Environmental management - Life cycle assessment - Requirements and guidelines

EN 16449:2014, Wood and wood-based products - Calculation of the biogenic carbon content of wood and conversion to carbon dioxide

Phyllis2 Database for the physico-chemical composition of (treated) lignocellulosic biomass, micro- and macroalgae, various feedstocks for biogas production and biochar. TNO innovation for life. Available: <https://phyllis.nl/>. Referenced 3.5.2023.

