Environmental Product Declaration

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

Two-layer wooden flooring

from

Dąbex Sp. z o.o.

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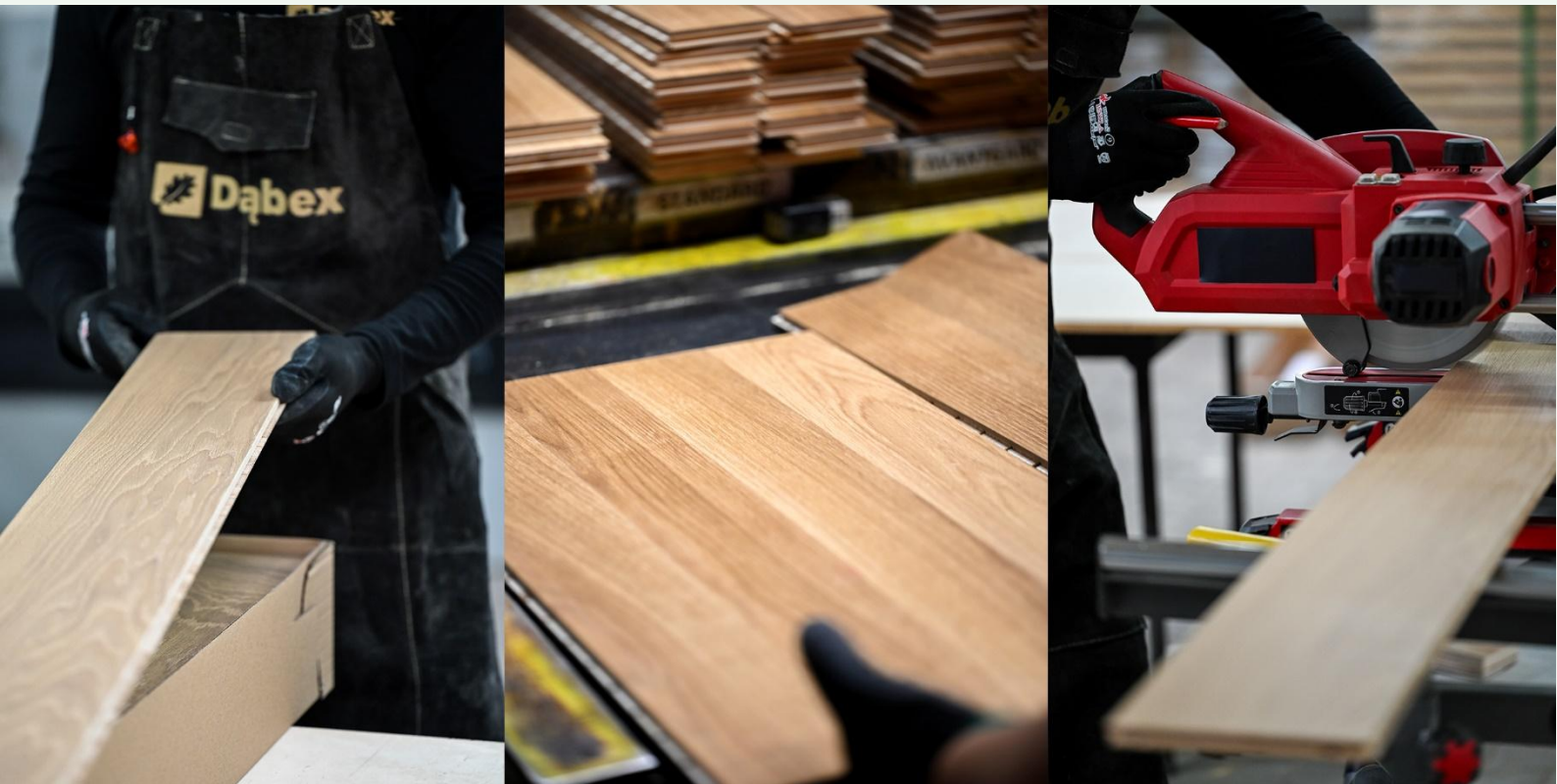
An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



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-006 Being updated - Wood and wood-based products for use in construction (EN 16485) PCR 2019:14 Construction products (EN 15804+A2) (1.3.4) UN CPC code: 314 – Wood boards and panels
PCR review was conducted by: The Technical Committee of the International EPD System. See www.environdec.com 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: *Paulina Harazin, Anna Banach, Bureau Veritas Polska*
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: *Agnieszka Pikus, Greenwise* 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 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: Wytwórnia Podłóg Drewnianych DĄBEX Spółka z Ograniczoną Odpowiedzialnością

Contact: Anna Tadla-Nowak

Description of the organisation: The company is a family-owned business with over 65 years of experience in producing high-quality wooden flooring. Its operations are based on a strong commitment to sustainability, innovation, and multi-generational craftsmanship. The company combines traditional methods with modern solutions to create environmentally friendly and durable products that meet the highest quality standards and customer expectations.

The organisation follows a circular economy model, sourcing raw materials exclusively from certified Polish forests, including those managed under the PEFC program. Its production processes maximize resource efficiency by utilizing all by-products to manufacture eco-friendly briquettes and pellets, which help reduce CO_2 emissions. These initiatives align with European standards and contribute to sustainable forest management and environmental protection.

Certified with PEFC and TÜV-EPH, the company is dedicated to maintaining an environmentally conscious approach. All products, including wooden flooring and finishing materials, are free from harmful chemicals, ensuring safety for users and minimizing environmental impact. The company's offerings, such as two-layer wooden floors, are versatile, durable, and compatible with underfloor heating systems, making them an ideal choice for a wide range of interior designs.

Guided by the motto, *"Good floor is the base,"* the company strives to provide flooring solutions that are not only functional and aesthetically pleasing but also contribute to the sustainable development of resources and the well-being of future generations.

Product-related or management system-related certifications: TÜV PROFiCERT, PEFC-certificate

Name and location of production site(s): Poland

Wytwórnia Podłóg Drewnianych DĄBEX Spółka z Ograniczoną Odpowiedzialnością,
6 Mikołajczyka street,
62-065 Grodzisk Wielkopolski
Poland.

Product information

Product name: Two-layer wooden flooring

Products included in this EPD
2-layer board Maxi Profi - (11, 13)
2-layer board Mega Profi - (12, 13, 15)
2-layer parquet Chevron - (12, 13, 15)

2-layer parquet Herringbone - (10, 11, 13)
2-layer parquet Profi - (10, 11, 13)

The EPD is based on the average results of the product group.

The average result was calculated as a weighted average for each consumption value, using production volume as the weighting factor. Specifically, the value of raw material/utility consumption was divided by the total production volume and then multiplied by the share of each product in the overall production.

Product description:

Dąbex two-layer wooden floors are finishing elements designed for use inside residential and public utility buildings. They consist of two permanently bonded layers: a wear layer made of solid oak wood (thickness 3–6 mm) and a support layer made of coniferous or deciduous wood (thickness 8–9 mm). This construction ensures high dimensional stability and compatibility with underfloor heating systems. The floors are available in various formats (e.g., 11×70×490 mm, 11×100×350 mm, 13×180×2200 mm) and in different surface finish variants: vernished, oiled, or oil-waxed. The applied finishing coatings are free from harmful substances and meet the requirements for low volatile organic compound (VOC) emissions. This is confirmed by the TÜV PROFiCERT-product Interior certificate.

The product is manufactured in Poland in accordance with EN 13489 and EN 14342 from sustainably harvested, PEFC-certified wood. The entire production process includes optimal raw material utilization and the processing of wood waste into solid biofuels. The product is durable, refurbishable, and its life cycle can be extended through proper maintenance.

Process description:

The entire production process for two-layer flooring takes place within a single manufacturing facility. Production begins with the delivery of logs, which are first debarked. The cleaned logs are then sawn into lumber of appropriate dimensions and dried in kilns to achieve the required moisture content. After drying, the wood undergoes further mechanical processing, including cutting and sorting of elements intended for the core layer and the wear layer.

Subsequently, both layers are bonded together using adhesive to form a single unit. The finished boards are then calibrated and profiled (tongue-and-groove joint), and their surfaces are protected by either lacquering, oiling, or oil-waxing, depending on the selected finish. Finally, the completed floorboards are packaged and prepared for further distribution.

All stages are carried out in one location, enabling efficient process management and minimizing emissions associated with internal transport.

UN CPC code: 314 – Wood boards and panels

Geographical scope:

Modules A1-A2: EUR
Modules A3: PL
Modules A4-A5: GLO
Module C: GLO

LCA information

Declared unit: 1 m^2 of two-layer wooden flooring

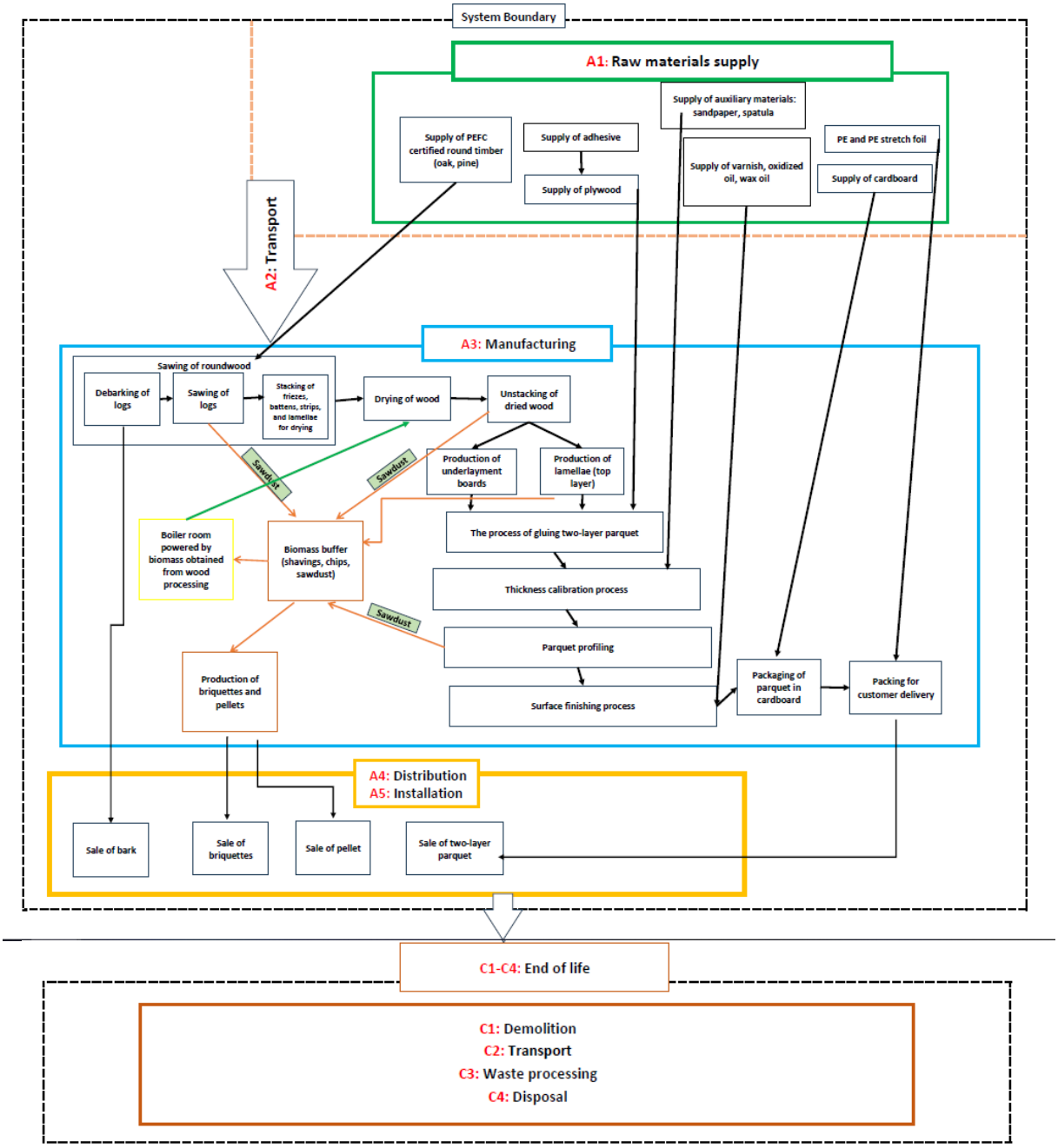
Time representativeness: 2023-01-01 to 2023-12-31

Database(s) and LCA software used: SimaPro v. 10.1.0.2 with Ecoinvent 3.10 database. “EN 15804 reference package” based on EF 3.1 has been used for impact calculations.

Description of system boundaries:

Cradle to gate with options, modules C1–C4 and module D (A1–A3 + A4 + A5 + C + D).

System diagram:



A1-A3:

Raw materials were modelled using primary data from the manufacturer, specifying the product composition and material type. Material losses are included in the calculations.

Transport of wood was considered based on the amount of fuel consumed for transportation purposes.

Transport of raw materials and packaging materials was calculated based on distance and transport mode information from the manufacturer.

Manufacturing activities take place in Poland. Primary data was used to model energy (electricity and heat). The production of two-layer wooden flooring generates waste in the form of off-spec material and wooden material, which is sold directly into market or processed into other products in Dąbex facility, which are treated as co-products. Wood chips are burned in a furnace on site, providing heat.

The climate impact of electricity for location based on residual mix dataset is as follows:

Manufacturing location	Electricity dataset	GWP-GHG impact (kg CO_2e/kWh)
Poland	electricity, medium voltage, residual mix | electricity, medium voltage | Cut-off, S	1,11

The source of the electricity dataset is as follows: hard coal 81,7%, natural gas 8,02%. nuclear 0,49%, hydro 0,47%, wind 2,67%, solar 4,43%, biomass 1,69%.

A4–A5:

Module A4 includes transportation to the customer. The company provided the share of individual countries to which their products are shipped. Due to the lack of detailed information, the capital of the country in the portfolio of indicated countries was taken as a reference point. On this basis, the distances from the company's headquarters to individual capitals were calculated. Then, the weighted average distance to the customer was determined based on the distances and the percentage shares of individual countries.

Module A5 covers electricity consumption, and the materials needed to prepare the product for its intended use. This module also includes information on packaging waste generated at this stage of the product life cycle and material loss during installation process. The treatment of packaging material waste and assembly waste has been modelled according to PEF Annex C. Transportation of the packaging waste to the waste management site was assumed as 15 km.

C1-C4 End of life stage

Deconstruction is performed by hand; no machinery is needed. Therefore, no environmental burden is generated in Module C1.

Since Dąbex products are sold worldwide, the distance to the disposal/waste management site in C2 module was assumed to be 100 km.

Module C3 includes preparing post-consumer wood for cutting and sorting.

Module C4 includes municipal incineration, incineration with energy recovery, and waste landfilling.

D Benefits and loads outside of system boundary

Module D covers recovered energy from the incineration process and recycled wood.

Allocation

Whenever allocations could be avoided, primary data have been used. Where this has not been possible, volume-based physical allocations have been used to distribute the environmental burden between the main product – two-layer wooden flooring, and the co-products. The allocation for

consumption values has been allocated from 2023 production, corresponding to 55,59% of the whole factory production.

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	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EUR	EUR	PL	GLO	GLO	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	45%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Excluded processes:

- Production of spare parts (e.g. refractories, machinery tires, conveyer belts) and all material needed for maintenance operations during manufacturing.
- Infrastructure and capital goods, transportation of employees, as determined in PCR

Content information

Content information refers to the average product.

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Oak wood	5,62	0,00	0,49
Pine wood	2,33	0,00	0,49
Adhesive	0,16	0,00	0,00
Surface finish (varnish/oxidized oil/wax oil)	0,06	0,00	0,00

TOTAL	**8,11**	**0,00**	**0,99**
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Wooden pallet	0,12	1,43%	0,47
PE stretch foil	0,04	0,48%	0,00
PE foil	0,06	0,72%	0,00
Corrugated cardboard	0,00	0,00%	0,42
TOTAL	**0,21**	**2,63%**	**0,89**

Dangerous substances from the candidate list of SVHC for Authorisation
There are no dangerous substances used from the candidate list of SVHC.

Results of the environmental performance indicators

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. The use of the results of modules A1-A3 without considering the results of module C is discouraged.

Mandatory impact category indicators according to EN 15804

Results per declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**	**Variation A1-C4**
GWP-fossil	kg CO_2 eq.	9,19E+00	8,97E-01	2,29E+00	0,00E+00	1,46E-01	3,72E-01	6,45E-02	-4,37E+00	**-2,16%**
GWP-biogenic	kg CO_2 eq.	-1,43E+01	3,97E-07	5,46E-02	0,00E+00	6,48E-08	1,42E+01	3,52E-08	0,00E+00	**-0,38%**
GWP-luluc	kg CO_2 eq.	4,07E-02	2,98E-04	3,15E-04	0,00E+00	4,85E-05	9,94E-04	1,58E-05	-3,65E-03	**-3,34%**
GWP-total	kg CO_2 eq.	-5,06E+00	8,97E-01	2,35E+00	0,00E+00	1,46E-01	1,46E+01	6,45E-02	1,79E+00	**-2,16%**
ODP	kg CFC 11 eq.	1,02E-07	1,78E-08	1,25E-08	0,00E+00	2,91E-09	5,00E-09	7,28E-10	-2,44E-08	**-3,49%**
AP	mol H^+ eq.	6,20E-02	1,87E-03	1,71E-02	0,00E+00	3,04E-04	1,93E-03	6,68E-04	-3,34E-02	**-1,17%**
EP-freshwater	kg P eq.	1,07E-03	7,00E-06	1,41E-04	0,00E+00	1,14E-06	8,58E-06	8,93E-07	-3,24E-04	**-1,80%**
EP-marine	kg N eq.	9,75E-03	4,37E-04	2,14E-03	0,00E+00	7,13E-05	6,33E-04	3,20E-04	-4,24E-03	**-2,39%**
EP-terrestrial	mol N eq.	1,08E-01	4,84E-03	2,43E-02	0,00E+00	7,89E-04	6,93E-03	3,40E-03	-4,82E-02	**-2,31%**
POCP	kg NMVOC eq.	3,54E-02	3,10E-03	6,88E-03	0,00E+00	5,06E-04	2,24E-03	8,57E-04	-1,45E-02	**-3,45%**
ADP-minerals&metals*	kg Sb eq.	2,27E-05	2,92E-06	8,92E-06	0,00E+00	4,76E-07	9,61E-07	1,12E-07	-1,73E-05	**-2,29%**
ADP-fossil*	MJ	1,19E+02	1,26E+01	2,57E+01	0,00E+00	2,06E+00	5,17E+00	5,75E-01	-5,04E+01	**-2,34%**
WDP*	m^3	1,69E+00	5,24E-02	3,22E-01	0,00E+00	8,54E-03	3,81E-02	2,27E-02	-7,02E-01	**-1,10%**
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

Results per declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**	**Variation A1-C4**
GWP-GHG*	kg CO_2 eq.	9,19E+00	8,97E-01	2,29E+00	0,00E+00	1,46E-01	3,72E-01	6,45E-02	-4,37E+00	**-2,16%**

**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.*

Resource use indicators

Results per declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**	**Variation A1-C4**
PERE	MJ	1,29E+00	5,68E-02	8,25E-01	0,00E+00	9,26E-03	8,90E-02	2,65E-03	-1,61E+00	**-1,29%**
PERM	MJ	1,75E+02	1,60E-01	6,45E-01	0,00E+00	2,60E-02	1,84E-01	1,16E-02	-6,79E+01	**-14,36%**
PERT	MJ	1,77E+02	2,17E-01	1,47E+00	0,00E+00	3,53E-02	2,73E-01	1,43E-02	-6,95E+01	**-14,20%**
PENRE	MJ	1,27E+02	1,34E+01	2,73E+01	0,00E+00	2,19E+00	5,49E+00	6,26E-01	-5,37E+01	**-2,33%**
PENRM	MJ	6,60E-02	5,57E-04	4,47E-04	0,00E+00	9,08E-05	5,40E-03	5,14E-05	-4,10E-03	**-3,31%**
PENRT	MJ	1,27E+02	1,34E+01	2,73E+01	0,00E+00	2,19E+00	5,50E+00	6,26E-01	-5,37E+01	**-2,33%**
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	**0,00%**
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	**0,00%**
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	**0,00%**
FW	m^3	1,17E+00	2,64E-02	2,31E-01	0,00E+00	4,31E-03	5,20E-02	3,04E-02	-4,60E-01	**-1,97%**
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									

Waste indicators

Results per declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**	**Variation A1-C4**
Hazardous waste disposed	kg	6,81E-04	8,49E-05	3,51E-05	0,00E+00	1,38E-05	2,76E-05	3,54E-06	-6,63E-05	**-2,93%**
Non-hazardous waste disposed	kg	7,46E-01	6,09E-01	3,41E-01	0,00E+00	9,93E-02	2,19E-01	6,28E-02	-1,43E-01	**-9,53%**
Radioactive waste disposed	kg	4,85E-05	4,06E-06	6,36E-06	0,00E+00	6,63E-07	5,74E-06	1,65E-07	-1,20E-05	**-3,00%**

Output flow indicators

Results per declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**	**Variation A1-C4**
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	**0,00%**
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	**0,00%**
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	**0,00%**
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	0,00E+00	**0,00%**
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	0,00E+00	**0,00%**

References

1) ISO 14040:2006 Environmental management – Life cycle assessment – Principles and Framework
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3) ISO 14025:2006, Environmental labels and declarations – Type III Environmental declarations - Principles and procedures
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8) Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B., 2016. The ecoinvent database version 3 (part I): overview and methodology. The International Journal of Life Cycle Assessment, [online] 21(9), pp.1218–1230. Available at: <http://link.springer.com/10.1007/s11367-016- 1087-8>
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10) European Commission (2024). *EU Construction & Demolition Waste Management Protocol including guidelines for pre-demolition and pre-renovation audits of construction works: updated edition 2024*, Publications Office of the European Union.
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