ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2010 and EN 15804:2012+A2:2019/AC:2021 for:

FLAT SHEET IN FIBER CEMENT

from

Società Italiana Lastre S.p.a.

EPD of multiple products based on the average profile of the product group.
Products covered: painted and non-painted flat sheets with Thicknesses of 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, and 12 mm

Programme
The International EPD® System, www.environdec.com

Programme Operator
EPD International AB

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2030/06/05

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 INFORMATIONS

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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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.

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)

PCR 2019:14. Construction products. Version 1.3.4

PCR review was conducted by: The Technical Committee of the International EPD® System

Life Cycle Assessment (LCA)

LCA accountability: Studio Fieschi & soci Srl

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: Etienne Lees-Perasso , Consultant ACV & écoconception

Approved by: The International EPD® System

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

☐ Yes ☒ No

1. SIL GROUP

Società Italiana Lastre S.p.A. (SIL) was founded in 1961 and established itself in the market thanks to the production of corrugated flat sheet production in fiber cement and thanks to the wide variety of products..

From **1973** SIL began to produce **flat sheets**, products subject of the present EPD.

UNI EN ISO
9001:2015

SIL GROUP IS
CERTIFIED **ISO 9001**

SIL plant is located in **Verolanuova** (BS).

1961

Foundation

SIL GROUP IS ONE OF THE FIRST COMPANY IN EUROPE FOR PRODUCT QUALITY AND WORKERS' SKILLS.

2025

2. THE PRODUCT

FLAT SHEET IN FIBER CEMENT

Flat sheets represent the new generation of sheet, composed by cement and inert materials, reinforced with cellulose and autoclaved.

They are fire-resistant, non putrescible and difficult to be attacked by rodents, scums and fungi.

Sheets are produced in different thicknesses ranging from 4 mm to 12 mm, they could be colored in mass.

About 70% of the flat sheets are coated.

The sheets can be used for external applications (facades).

UN CPC code: 375, Articles of concrete, cement, and plaster

PRODUCT IDENTIFICATION

Products covered by the EPD

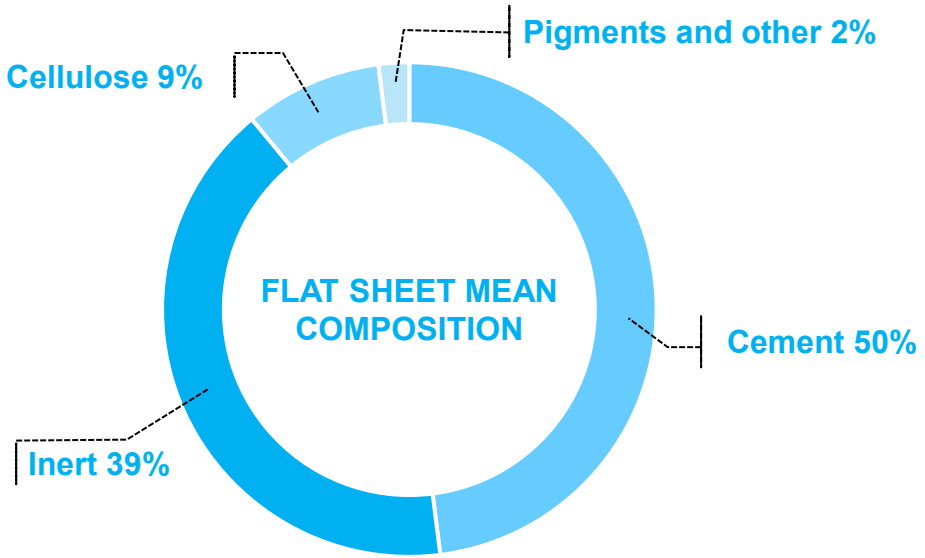
Type of product	Product thickness [mm]	Mass per linear m2 [kg/m²]
Flat sheet in fibre cement **Non-painted** and **painted**	4	7,2
	5	9,0
	6	10,8
	8	14,4
	10	18,0
	12	21,6

2. THE PRODUCT

CONTENT DECLARATION

Per declared unit (1m^2 of flat sheet, average profile)

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Cement	7,17E+00	-	-
Inert material	5,61E+00	-	-
Cellulose	1,28E+00	-	<5%
Additives	3,48E-01	-	-
TOTAL	1,44E+01	0,00E+00	<5%
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Plastic (HDPE)	1,04E-02	0,07%	-
Plastic (LDPE)	1,12E-02	0,08%	-
Pallet	8,03E-02	0,56%	3,15E-02
Steel	3,72E-03	0,03%	-
TOTAL	1,06E-01	0,73%	3,15E-02



Raw materials used for flat sheets do not include substances listed in the "Candidate List of Substances of Very High Concern for authorization" (http://echa.europa.eu/candidate-list-table).

3. METHODOLOGY

Environmental impacts have been evaluated considering all the phases of the product life cycle according to the rules listed in the PCR 2019:14 (v. 1.3.4).

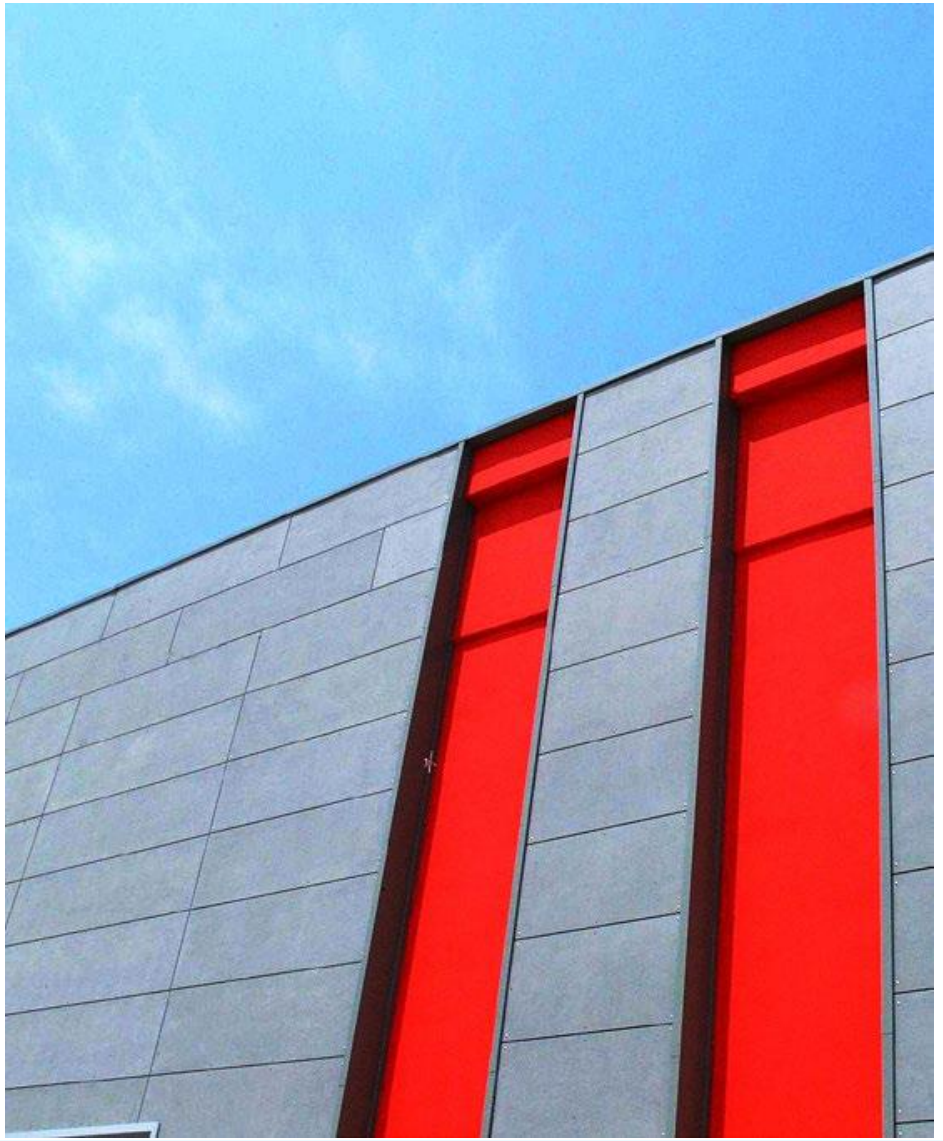
Data collected are referred to the whole 2024 production, occurred in Verolanuova plant.
Ecoinvent database (v3.10) and Simapro v.10.1.0.6 are used for the elaboration.

DECLARED UNIT

Data and results are referred to **1 m²** of surface in different thicknesses, based on the average results of the product group. The average environmental profile is calculated as the arithmetic mean of the extreme values of the group.

The variation related to GWP-GHG for the declared unit resulted to be ± 53% in the product family. This is linked to the declared unit of 1m², as the impact per kg is virtually the same for all products. Therefore, these products are grouped in one product family within the same EPD since they perform the same function and are similar in form and materials

Electricity mix: The electricity used in the production process (step A1-A3) was modelled using the National Residual Mix provided by the AIB (Association of Issuing Bodies), data year 2023. The GWP-GHG of 1 kWh of SIL electricity mix is 2,34E-01 kgCO2eq.



4. SYSTEM BOUNDARIES

	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[1]**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x
Geography	GLO	GLO	IT	GLO									GLO	GLO	GLO	GLO	GLO
Specific data used	< 10%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products[2]	+/- 53 %					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	NA					-	-	-	-	-	-	-	-	-	-	-	-

The system boundaries are Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + A4 + C + D).

[1] Module A5 is considered only for the balance of the biogenic carbon contained in the packaging

[2] In an EPD of multiple products, the difference (in %) between the declared GWP-GHG result, and the product with GWP-GHG results furthest away from the declared results, for modules A1-A3 shall be reported in the EPD. Variations above 10% are allowed, if justified in the LCA report and the EPD declares the variation of each impact indicator results for which the variation is above 10%.

4. SYSTEM BOUNDARIES

Upstream module referring to module A1

- **module A1:** extraction and processing of raw material used for the flat sheets (e.g., concrete, cellulose, etc) and the generation of electricity and fuels such as natural gas and diesel.

Core module referring to module A2 and A3

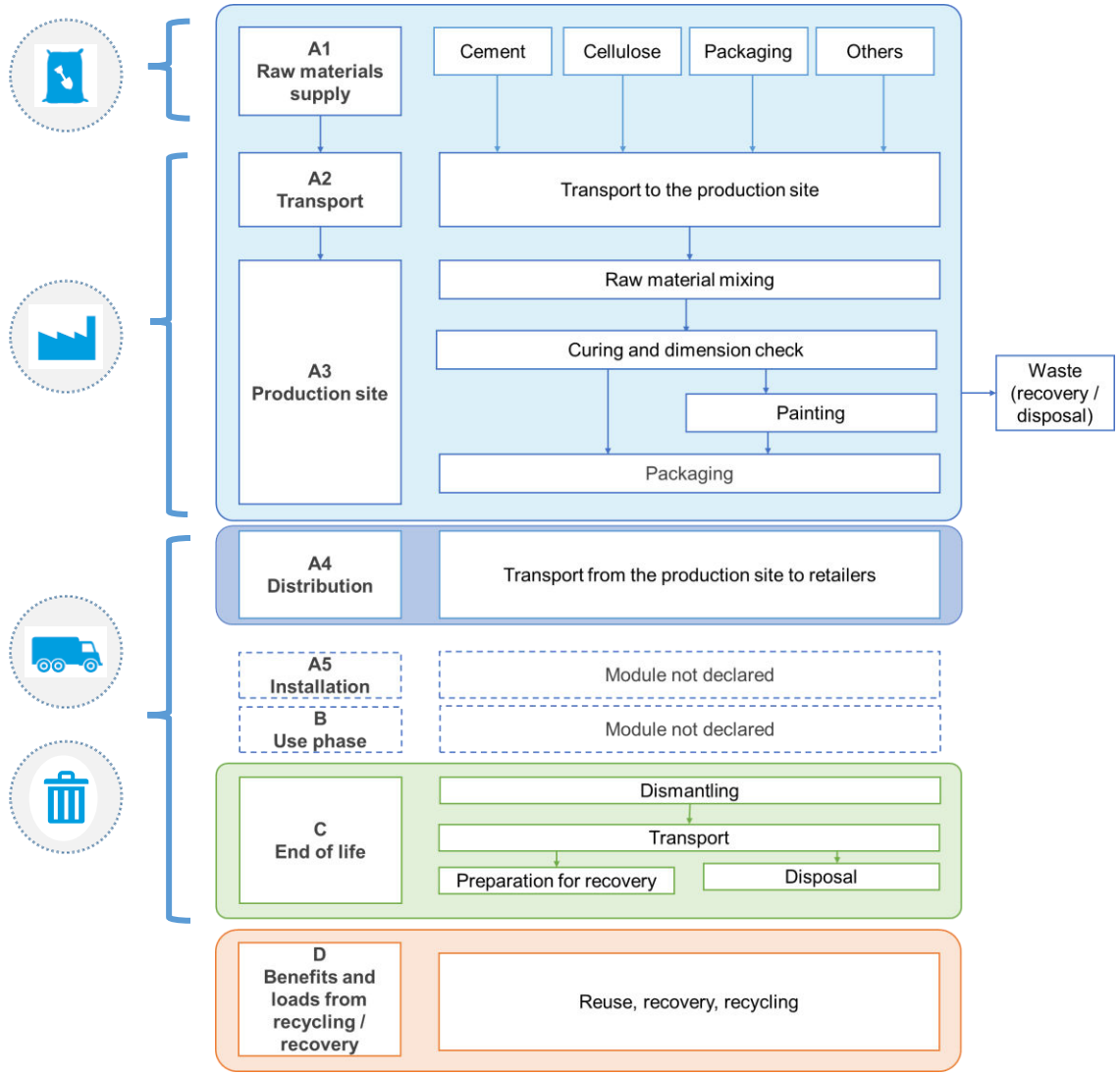
- **module A2:** external transportation to the core processes;
- **module A3:** product manufacturing such as auxiliaries and packaging production, combustion emission and waste disposal.

Downstream module referring to module A4 and C1-C4

- **module A4:** product transport from the production gate to construction site;
- **module C1**: disassembling of the product during the demolition of the building,
- **module C2**: transport of the dismantled sheets to disposal facility;
- **module C3 and C4**: final disposal of the flat sheets

In accordance with the PCR 2019:14 v1.3.4, the system boundaries do not include:

- Input and output flows related to personnel (e.g., energy used in head offices and sales offices, transports of employees to and from workplace, water use for toilets, etc);
- Input and output flows related to production and maintenance of equipment, capital goods and infrastructures;
- Impacts related to the production and transport of packaging materials of incoming semi-finished products.



5. UPSTREAM PROCESSES

Cement comes from North Italy production plants, near to Verolanuova.

Inerts (such as sand) are used to increase sheet strength.

Chemical additives (oils, varnish) are used in small amount to help production process.

Cellulose is composed of virgin fibres and it is sourced from various European producers.

Electricity and natural gas production used in the production process.

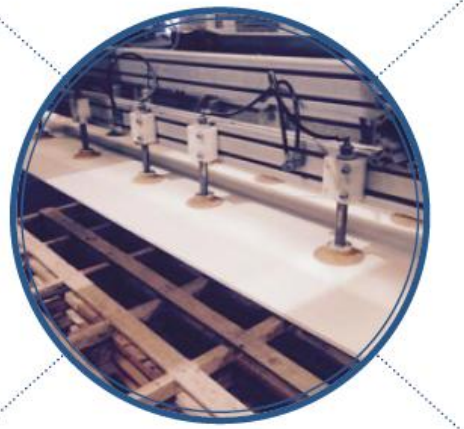
A1 - Raw materials and Energy production

6. CORE PROCESSES

A2 - Raw materials transport

Raw materials transport up to Verolanuova plant.

Packaging materials production (HDPE film; pallet and metallic strappings).



Use of thermal energy and water during the production process, that consists of several steps: mixing of raw materials, sheets forming, cutting and pressing, seasoning, autoclaving, finishing and painting.

Waste management including transport up to recovery/disposal.

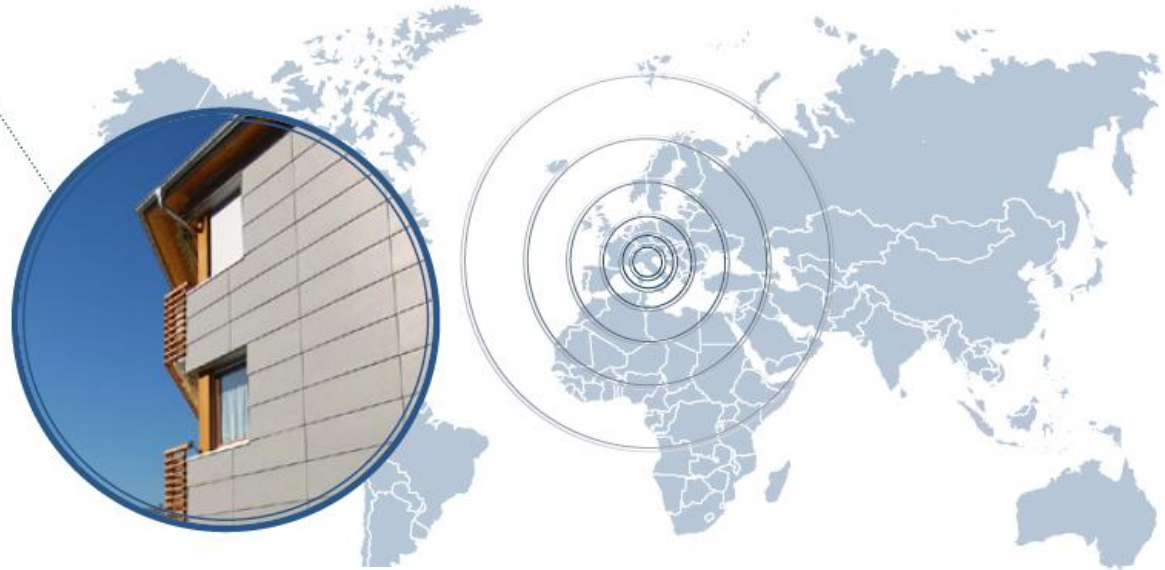
A3 - Production process

7. DOWNSTREAM PROCESSES

Impacts related to transport have been evaluated considering all shipments during year 2024.

Reference distance has been calculated by averaging the distances of each shipment with the weight represented by the quantity transported.

Environmental impacts have been calculated considering the information coming from Ecoinvent database version 3.5 (Lorry 16-32t, EURO5 and Transoceanic freight ship).

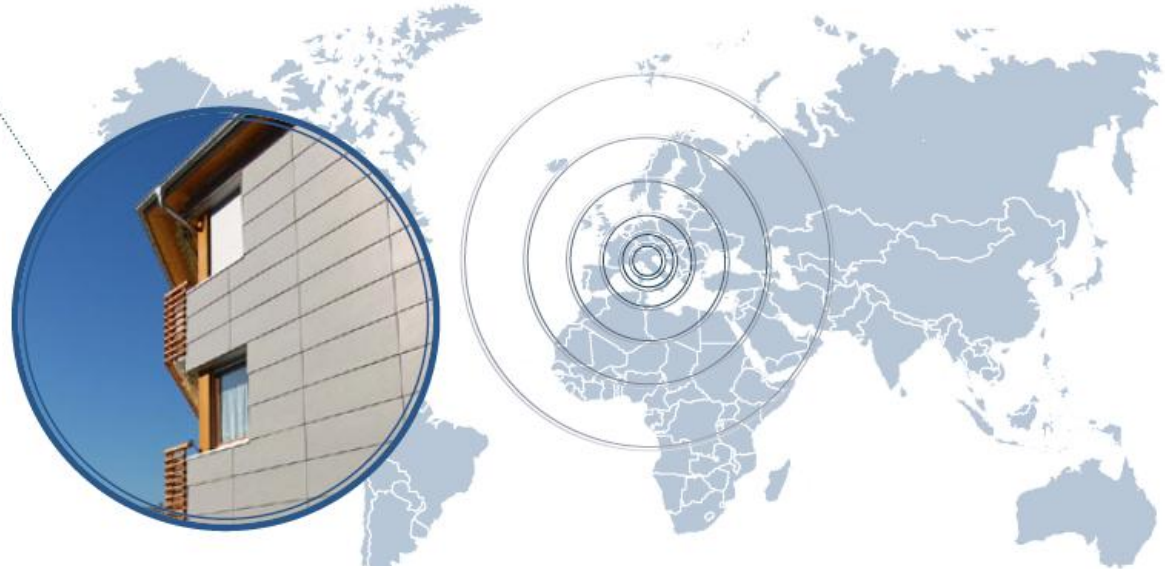


A4 - Final product transport

7. DOWNSTREAM PROCESSES

End-of-life impacts have been calculated taking into account the product's recycling potential. The recovery scenario is based on statistics on the recovery of construction materials in Europe (ec.europa.eu/eurostat) and on the Ecoinvent 3.10

Parameter	Value
Recycling	81%
Disposal (incineration)	19%
Average distance to the waste treatment plant	50 km by truck



C1-C4 – End of life scenarios

8. ENVIRONMENTAL PERFORMANCE (results per 1m^2 of average product)

Mandatory impact category indicators according to EN 15804[3]

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 is discouraged without considering the results of module C.

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D	Delta
GWP-fossil	kg CO_2 eq.	1,87E+01	1,98E-01	9,47E-02	1,39E-01	3,87E-03	8,03E-03	-2,64E-01	
GWP-biogenic[4]	kg CO_2 eq.	1,72E-02	8,08E-06	4,07E-06	2,49E-05	4,84E-06	3,68E-05	-2,72E-04	
GWP-luluc	kg CO_2 eq.	3,51E-03	5,71E-06	3,26E-06	4,55E-05	6,39E-06	4,76E-06	-2,95E-04	
GWP-total	kg CO_2 eq.	1,87E+01	1,98E-01	9,47E-02	1,39E-01	3,88E-03	8,07E-03	-2,64E-01	+/- 52,9%
ODP	kg CFC 11 eq.	6,06E-07	3,95E-09	1,49E-09	2,77E-09	8,00E-11	1,09E-10	-6,58E-09	+/- 55,6%
AP	mol H^+ eq.	3,70E-02	9,68E-04	8,85E-04	4,36E-04	1,31E-05	5,05E-05	-8,50E-04	+/- 60,3%
EP-freshwater	kg P eq.	4,74E-04	1,89E-07	8,94E-08	1,07E-06	2,03E-07	5,18E-08	-9,47E-06	+/- 53,5%
EP-marine	kg N eq.	8,81E-03	3,03E-04	4,16E-04	1,45E-04	2,09E-06	2,49E-05	-2,01E-04	+/- 54,2%
EP-terrestrial	mol N eq.	1,00E-01	3,34E-03	4,56E-03	1,60E-03	2,32E-05	2,55E-04	-2,21E-03	+/- 53,9%
POCP	kg NMVOC eq.	4,64E-02	1,17E-03	1,36E-03	6,83E-04	8,71E-06	7,51E-05	-8,07E-04	+/- 55,2%
ADP-minerals&metals*	kg Sb eq.	2,41E-05	6,19E-09	3,96E-09	4,46E-07	1,35E-10	8,23E-10	-1,62E-08	+/- 67,4%
ADP-fossil*	MJ	2,47E+02	2,61E+00	1,25E+00	1,96E+00	7,24E-02	7,37E-02	-4,68E+00	+/- 55,1%
WDP*	m^3	3,65E+00	1,16E-03	9,83E-04	8,02E-03	1,02E-01	1,12E-03	-3,70E-02	+/- 57,1%
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.

[3] Version EF 3.1 of JRC characterization factors has been used.

[4] The balance of CO2 from biogenic origin entering and leaving the system is 0. Biogenic carbon enters the system as wood and cardboard packaging in A1-A3. Since A5 is not included, CO2 from biogenic origin has been balanced in A3.

8. ENVIRONMENTAL PERFORMANCE (results per 1m^2 of average product)

Additional mandatory and voluntary impact category indicators

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D	Delta
GWP-GHG*	kg CO_2 eq.	1,87E+01	1,98E-01	9,47E-02	1,39E-01	3,88E-03	8,07E-03	-2,64E-01	+/- 52,9%

*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 CO_2 is set to zero.

8. ENVIRONMENTAL PERFORMANCE (results per 1m^2 of average product)

Resource use indicators

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	4,99E+01	1,06E-02	2,79E-03	3,33E-02	1,09E-02	1,60E-03	-6,48E-01
PERM**	MJ	2,14E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	7,13E+01	1,06E-02	2,79E-03	3,33E-02	1,09E-02	1,60E-03	-6,48E-01
PENRE	MJ	2,47E+02	2,61E+00	1,25E+00	1,96E+00	7,24E-02	7,37E-02	-4,68E+00
PENRM**	MJ	8,24E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	2,47E+02	2,61E+00	1,25E+00	1,96E+00	7,24E-02	7,37E-02	-4,68E+00
SM	kg	3,26E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	5,18E+00	5,21E-04	2,66E-04	2,00E-03	1,74E-03	3,53E-04	-8,02E-02
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							

**In accordance with option B of Annex 3 of the PCR 2019:14 v1.3.4, it is considered that the energy contained in the packaging is lost as it does not leave the system as useful energy.

8. ENVIRONMENTAL PERFORMANCE (results per 1m^2 of average product)

Waste indicators

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste disposed*	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed*	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radioactive waste disposed**	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Hazardous waste disposed and Non-hazardous waste disposed indicators are set to 0 because all the relevant waste treatment processes are included within the system boundaries.
**Radioactive waste is considered not relevant within the value chains included in the study

Output flow indicators

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
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
Material for recycling	kg	4,30E-03	0,00E+00	0,00E+00	0,00E+00	1,28E+01	0,00E+00	0,00E+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
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,03E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,27E+00	0,00E+00

9. REFERENCES

Bibliography

- ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations – Principles and procedures;
- EN 15804:2012 + A2:2019 + AC, Sustainability of buildings – Environmental product declarations – Framework rules for development by product category
- International EPD System, General Programme Instructions, versione 4.0
- International EPD System, PCR 2019:14 – Construction products – versione 1.3.4
- Life Cycle Assessment of flat sheets report 2025 Rev00 (20/05/2025)

For data elaboration the following tools are used:
- Software: SimaPro v.10.1.0.6
- Main database: Ecoinvent 3.10
- Reference year: 2024
- Geographical scope of the EPD: Global

Differences versus previous versions

- 2025/06/05: Update of the calculation model according to GPI 4.0 and PCR 2019:14 version 1.3.4
- 2025/07/17: Editorial changes: update of the ISO standards references and commercial description of the product range

Contacts

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