

Environmental Product Declaration

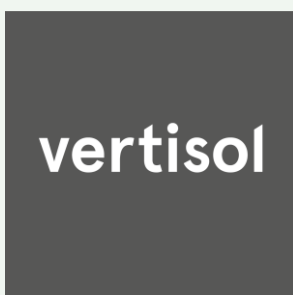


In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

VERTISOLFLOOR *vinyl flooring*

EPD of multiple products, based on the average results of the product group.

from



Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number	EPD-IES-0001029:001 (S-P-01029)
Publication Date:	2017-03-31
Revision Date:	2024-10-22
Valid until:	2029-10-22

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
E-mail:	info@environdec.com

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): <i>PCR 2019:14 Construction Products v 1.3.4 and c-PCR 004 Resilient, textile and laminate floor coverings.</i> CPC Code: 36910: <i>Floor coverings of plastics, in rolls or in the form of tiles; wall or ceiling coverings of plastics.</i>
PCR review was conducted by: <i>The Technical Committee of the International EPD® System.</i> Contact via: info@environdec.com (environdec.com)
Life Cycle Assessment (LCA)
LCA accountability: Mélanie Serra, ZIRKEL (zirkel.biz)
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: <i>Elisabet Amat Guasch, GREENIZE Projects, eamat@greenize.es</i> 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: Vertisol Internacional, SRL

Contact: mkg@vertisol.es

Description of the organisation:

Vertisol is a European manufacturer of technical fabrics for woven vinyl flooring, wallcovering, outdoor furniture upholstery, acoustic panels, and sun protection fabrics.

The focus of our operation is the constant improvement of our product and our anticipation of the market needs. At Vertisol, we have vertically integrated the design, manufacture, and distribution processes. This strategy allows us to control and verify that these processes meet our quality standards.

Product-related or management system-related certifications:

- ISO 9001:2015 Quality management systems.
- ISO 14001:2015 Environmental management systems.
- CE marking (2895-CPR-SH00981).
- Floorescore certification (SCS-FS-03251).
- Fire certification EN13501-1 Bfl-s1.

Name and location of production site(s):

- Moraña, Pontevedra, Galicia (Spain)

Product information

Product name: **VERTISOLFLOOR vinyl flooring**

This EPD® (Environmental Product Declaration) represents the VERTISOLFLOOR vinyl flooring collection, which is available in three distinct ranges, each tailored to specific needs and applications. Each model comes in a variety of colors and shapes, providing flexibility for customized design solutions. Below is a list of models included in this EPD:

Tiles			
Model	Composition	Weight	Thickness
CHROMA FLOOR	Fabric: 94% vinyl + 6% polyester Backing: 100% vinyl	3500 g/m ² +13% / -10%	2.70 mm +10% / -10%
MEMPHIS FLOOR	Fabric: 84% vinyl + 16% polyester Backing: 100% vinyl	3100 g/m ² +13% / -10%	2.30 mm +10% / -10%
PANAMA FLOOR	Fabric: 84% vinyl + 16% polyester Backing: 100% vinyl	2900 g/m ² +13% / -10%	2.25 mm +10% / -10%
POBO FLOOR	Fabric: 93% vinyl + 7% polyester Backing: 100% vinyl	3780 g/m ² +13% / -10%	2.80 mm +10% / -10%
WICKER FLOOR	Fabric: 84% vinyl + 16% polyester Backing: 100% vinyl	3500 g/m ² +13% / -10%	2.60 mm +10% / -10%

Raised Access Floor Tiles			
Model	Composition	Weight	Thickness
CHROMA FLOOR LL	Fabric: 94% vinyl + 6% polyester Backing: 100% vinyl	4275 g/m ² +13% / -10%	3.35 mm +10% / -10%
MEMPHIS FLOOR LL	Fabric: 84% vinyl + 16% polyester Backing: 100% vinyl	4300 g/m ² +13% / -10%	3.00 mm +10% / -10%
PANAMA FLOOR LL	Fabric: 84% vinyl + 16% polyester Backing: 100% vinyl	4500 g/m ² +13% / -10%	2.90 mm +10% / -10%
POBO FLOOR LL	Fabric: 93% vinyl + 7% polyester Backing: 100% vinyl	4625 g/m ² +13% / -10%	3.45 mm +10% / -10%
WICKER FLOOR LL	Fabric: 84% vinyl + 16% polyester Backing: 100% vinyl	4275 g/m ² +13% / -10%	3.30 mm +10% / -10%

Acoustic			
Model	Composition	Weight	Thickness
CHROMA FLOOR ACOUSTIC	Fabric 94% vinyl + 6% polyester Backing 85% vinyl + Felt PES 15%	3800 g/m ² +13% / -10%	4.56 mm +10% / -10%
MEMPHIS FLOOR ACOUSTIC	Fabric 84% vinyl + 16% polyester Backing 85% vinyl + Felt PES 15%	3400 g/m ² +13% / -10%	4.23 mm +10% / -10%
PANAMA FLOOR ACOUSTIC	Fabric 84% vinyl + 16% polyester Backing 85% vinyl + Felt PES 15%	3430 g/m ² +13% / -10%	4.56 mm +10% / -10%
POBO FLOOR ACOUSTIC	Fabric 93% vinyl + 7% polyester Backing 85% vinyl + Felt PES 15%	4000 g/m ² +13% / -10%	4.85 mm +10% / -10%
WICKER FLOOR ACOUSTIC	Fabric 84% vinyl + 16% polyester Backing 85% vinyl + Felt PES 15%	3880 g/m ² +13% / -10%	4.63 mm +10% / -10%

Product identification:

VERTISOLFLOOR is a woven vinyl flooring product, composed primarily of polyester threads coated with PVC, designed according to relevant industry standards such as EN ISO 10874 for vinyl flooring. The product is available in various formats, including tiles, raised access floor tiles, and acoustic flooring, each model catering to different aesthetic and functional requirements.

Product Description:

VERTISOLFLOOR is a highly technical material, easy to use and practical, with a textile appearance.

VERTISOLFLOOR seamlessly combines durability, functionality, and design versatility. The product is offered in three main ranges, each targeting different applications:

- **Tiles:** Highly durable and versatile, ideal for residential, commercial, and light industrial settings.
- **Raised Access Floor Tiles (LL):** Featuring a self-supporting design making installation quick and efficient.
- **Acoustic:** Includes a polyester felt layer to offer superior noise reduction, ideal for spaces where acoustic performance is a priority.

With customization options in terms of colors and shapes, VERTISOLFLOOR provides tailored solutions to meet both functional and aesthetic requirements.

Technical Properties:

VERTISOLFLOOR stands out for its superior fire classification, rated Bfl-s1, which ensures excellent fire resistance with minimal smoke production. This makes it an ideal choice for commercial and public buildings where fire safety is paramount.

Moreover, VERTISOLFLOOR is formulated to be antimony-free and phthalate-free, meeting the highest safety and environmental standards. This ensures the product is safe for indoor use, promoting healthier environments and improving indoor air quality.

It is also classified Heavy commercial use according to EN 1307.

EPD Coverage:

This EPD® represents all VERTISOLFLOOR models across its three product ranges (Tiles, Raised Access Floor Tiles, and Acoustic). It is essential to note that while the EPD includes all models, **the environmental impact values provided are based on an average model (fictitious)**. These values have been calculated by averaging the data for each model, weighted according to the actual sales volumes from the year 2023. This average reflects the content and environmental performance of VERTISOLFLOOR in a representative manner, ensuring that the data is accurate and relevant. The specific impacts of individual models may vary, but the average figures provide a representative baseline for the product family.

Material Composition:

The table below outlines the average material composition of VERTISOLFLOOR, including the range of content across all models. These values represent the material composition of the fictitious product used for calculating the environmental impacts presented.

Material	Unit	Average Content	Content Range
PVC (Yarn)	g/m ²	671	480-917
Polyester (Yarn)	g/m ²	88	51-124
PVC Backing	g/m ²	2,620	2,313-3,913
Polyester Felt	g/m ²	52	0-450
Adhesive Web	g/m ²	5	0-40
Total	g/m ²	3,436	2,900-4,625

UN CPC code:

36910: Floor coverings of plastics, in rolls or in the form of tiles; wall or ceiling coverings of plastics

Geographical scope:

For modules **A1-A2** a Global or European scale has been considered depending on the location of the supplier.

For module **A3**, the geographical scope of VERTISOLFLOOR manufacturing was Spain.

For modules **A4-A5**, a Global scale has been considered.

Finally, for **modules B and C**, a Global scale has been considered.

LCA information

This EPD® represents VERTISOLFLOOR based on the average of the products included. The selected model reflects a weighted average based on the production volumes of VERTISOLFLOOR during the year 2023, providing a representative overview of the environmental performance across various configurations.

Functional unit:

The functional unit for VERTISOLFLOOR is defined as 1 square meter (1 m²) of installed and operational flooring designed for specified applications and areas according to EN ISO 10874 with a reference service life (RSL) of 1 year.

Reference service life:

The service life of a floor covering for a given application on a floor is too disparate to give a common number. For this EPD model the reference service life (RSL) is fixed at one year. This means that all impacts for the use phase are based on the one-year cleaning and maintenance model.

Time representativeness:

The primary data used for the LCA calculation were obtained from VERTISOLFLOOR's production for the year 2023 and are representative of the product and its production processes during this period.

Database(s) and LCA software used:

The LCA was conducted using primary data from the VERTISOLFLOOR manufacturer and secondary data from the Ecoinvent V.3.10 database, with calculations performed using the SimaPro V.9.6.0.1 software.

Description of system boundaries:

The EPD covers the entire life cycle "**cradle to grave**," including production (A1-A3), installation (A4-A5), use (B2), and end-of-life stages (C1-C4), plus potential recycling benefits (D), in accordance with EN 16810:2017 for resilient, textile, and laminate floor coverings.

The life cycle steps analysed are described below:

A1-A3 Production Stage:

- **A1:** Extraction and Processing of Raw Materials, Material Reuse, Electricity, Steam, and Heat Generation, and Recovery of Energy and Secondary Fuels.

For the production of VERTISOLFLOOR, the manufacturer acquires the following components and materials:

- PVC resin.
 - Pigments for PVC production.
 - Additives for PVC production.
 - Polyester filaments.
 - PVC backing (applied by an external supplier).
 - Polyester felt.
 - Adhesive web for applying the felt.
 - Electricity for product manufacturing.
- **A2:** Transportation to the Factory Gate and Internal Transport

This module includes the transportation of the following components required for PVC manufacturing: resin, pigments, and additives, as well as polyester filaments, felt, adhesive web, and packaging used for shipment to the external supplier and final customer. Transportation is carried out by road (truck) or sea (cargo ship), depending on the supplier.

Additionally, transportation by truck (round trip) to the external supplier responsible for applying the PVC backing is considered.

- **A3:** Production of Auxiliary Materials, Product and Packaging Manufacturing, and Waste Management

Once the materials arrive at the manufacturing facility in Moraña (Galicia), the production of VERTISOLFLOOR begins.

1. **Phase 1:** The initial stage involves PVC production, starting with the preparation of the dry blend, which includes mixing the resin with additives. Pigments are then added, depending on the specific model. This process requires electricity and generates waste, including initial scraps (offcuts), dust, and PVC.
2. **Phase 2:** In this phase, the produced PVC pellets are combined with polyester (monofilament or multifilament) through an extrusion process. This process also requires electricity and generates waste such as thread trimmings and PVC scraps.
3. **Phase 3:** The PVC-coated polyester yarn undergoes a preliminary warping phase, which consumes electricity and generates yarn waste.
4. **Phase 4:** The material then moves to the weaving phase, consuming electricity and generating edge waste.
5. **Phase 5:** The polyester fabric is subjected to dimensional stabilization in a heat-sealing oven, consuming electricity and natural gas. The oven has two emission sources that generate direct emissions.

6. **Phase 6:** The polyester fabric in rolls is cut and undergoes quality control. During cutting, ends (8m per side) are removed, generating waste (RM). The material is then packaged for shipment to Belgium for PVC backing application.
7. **Phase 7:** In Belgium, the PVC backing is applied, after which the product is repackaged and sent to Galicia. The management of packaging waste is accounted for.
8. **Phase 8 (optional):** For the acoustic range, the polyester felt is applied with adhesive, consuming electricity.
9. **Phase 9:** Finally, the final cutting and finishing process is performed, followed by packaging for shipment to the customer. This process consumes electricity and generates waste. The waste generated by the packaging used from Belgium is also accounted for.

A4-A5 Construction Stage:

- **A4:** Transport of the product from the factory to the installation site.

The distribution of the product VERTISOLFLOOR is primarily carried out by land, complemented by some sea and air shipments, depending on the location. A weighted scenario has been developed based on the analysis of the list of shipments made in 2023, considering the location of the customers, the type of transportation used, and the square meters shipped. Additionally, both the weight of the product and the packaging have been included.

Parameter	Unit (expressed per functional unit)
Vehicle type used for transport e.g. long distance truck, boat etc.	Land: Long-distance truck; Sea: Cargo ship; Air: Cargo plane
Distance	Land: 1,000.78 km; Sea: 1,480.14 km; Air: 74.32 km
Capacity utilization (including empty returns)	Assumed byecoinvent
Bulk density of transported products	3.824 kg / m ² (including packaging)

The bulk density is the weight and volume of transported products.

- **A5:** Waste management of packaging and the product during construction, up to its final disposal. This includes the installation of the product in the building, the manufacturing and transportation of auxiliary materials, as well as the use of energy and water for installation, and on-site operations related to the product.

The waste management of the final product's packaging includes transportation to the waste handler, with an estimated distance of 50 kilometers. A waste scenario based on European data has been developed for cardboard, wood, and plastic. In addition, the use of 400 g of adhesive per square meter for the installation of the flooring has been estimated, using as a source the technical data sheet of a vinyl flooring adhesive manufacturer.

Parameter	Unit (expressed per functional unit)
Ancillary materials for installation (specified by material)	Adhesive: 400 g/m ²
Water use	None
Water resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	None (manual installation)

Waste materials on the building site before waste processing, generated by the product's installation (specified by type)	Cardboard: 0.125 kg; Plastic: 0.013 kg; Wood: 0.250 kg
Output materials (specified by type) as result of waste processing at the building site, e.g. of collection for recycling for energy recovery, disposal (specified by route)	Cardboard: <ul style="list-style-type: none"> Recycled: 81.6% Landfill: 6.6% Incineration: 11.8% Wood: <ul style="list-style-type: none"> Recycled: 50% Landfill: 18% Incineration: 32% Plastic: <ul style="list-style-type: none"> Recycled: 32.5% Landfill: 24.9% Incineration: 42.6%
Direct emissions to ambient air, soil and water	None

Data sources used for the development of waste scenarios:

- Statista (2023). Recycling rate of paper and cardboard packaging waste in the EU-27 2005-2020.
- European Parliament (2023). Waste management in the EU: Facts and figures (Infographic).
- European Parliament (2023). Plastic waste and recycling in the EU: Facts and figures.

B1-B7: Use Stage

- **B2:** Cleaning and maintenance

For floor coverings, only module B2, which addresses cleaning and maintenance, is relevant. Floor coverings do not impact the environment during normal use, and they are not repaired, replaced, or refurbished until the end of their useful life. Consequently, modules B1 and B3 through B7 are considered zero.

Module B2 includes all planned maintenance activities during the flooring's lifetime, covering the water and energy required. Maintenance tasks may involve vacuuming, wiping with a damp cloth, or wet cleaning, depending on the level of use (domestic, commercial, or industrial). The following values represent annual consumption and are based on the same assumptions used in the previous EPD version.

Parameter	Unit (expressed per functional unit)
Cleaning and maintenance process	Regular maintenance (vacuuming, damp cloth wiping, or wet cleaning)
Cleaning and maintenance cycle	Annually
Ancillary materials for cleaning and maintenance, e.g. cleaning agent, waxes or polishes, (specify materials)	Detergent: 0.001 kg/m ²
Waste material resulting from cleaning and maintenance (specify materials)	Minimal waste (detergent and wastewater)
Net fresh water consumption during cleaning maintenance	5.2 liters/m ²
Energy input during cleaning and maintenance, e.g. vacuum cleaning or rotary machine, energy carrier type e.g. electricity, and amount, if applicable and relevant	Electricity: 0.15 kWh/m ²

C1-C4: End-of-life Stage

The end-of-life stage for the floor covering begins when it is removed or replaced from the building and no longer serves any functional purpose. The different stages are as follows:

- **C1:** Removal of the floor covering from the building. This process is performed manually, so no environmental impacts are accounted for.
- **C2:** Transportation to the waste handler. An estimated distance of 50 km to the waste handler is assumed.
- **C3:** Processing of the waste for recovery, reuse, and/or recycling.
- **C4:** Disposal

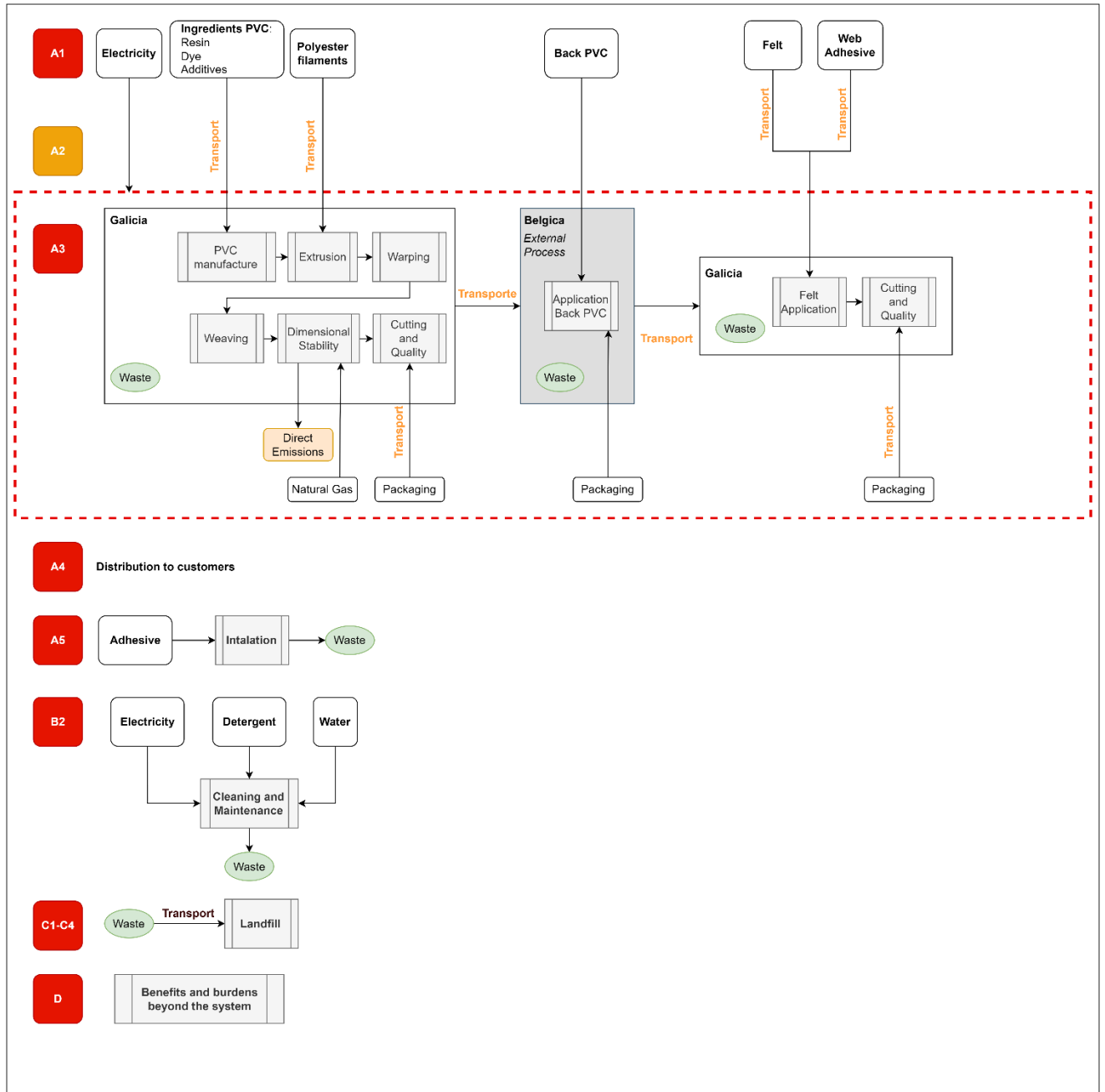
Given that there are no viable methods for separating and recycling the floor covering, a scenario has been established where 100% of the material is sent to landfill. This decision is based on the specific characteristics of the product and current limitations in available recycling techniques.

Parameter	Unit (expressed per functional unit)
Collection process specified by type	Manual removal of the floor covering
Recovery system specified by type	None (material is sent to landfill)
Disposal specified by type	Landfill
Assumptions for scenario development, e.g. transportation	Transportation distance to waste handler: 50 km

Module D

Module D includes the benefits and loads of reuse, recovery and/or recycling. Only packaging waste generated in phase A5 has been included, since the final product is sent entirely to landfill. For the modeling, the percentage of recycling according to the type of waste in the previous modules has been incorporated as a net benefit (avoided virgin material). The amount of energy generated through incineration has also been considered as avoided energy produced with fossil sources.

System diagram:



	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	ES	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO
Specific data used	23% GWP-GHG			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	27% ¹			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

^[1] The percentage difference between the declared GWP-GHG result and the extremes of the analyzed products is –16%/+27%, based on the best case (model: PANAMA) and worst case (model: POBO LL).

The following table presents the variation in each environmental impact indicator, with results aggregated across all included modules (A to C), showing those with variations exceeding 10% among any of the included products.

Impact Category	Maximum Variation (%)
Climate change - Fossil	23%
Climate change - Biogenic	37%
Climate change - Land use and LU change	31%
Climate change	23%
Ozone depletion	24%
Acidification	21%
Eutrophication, freshwater	21%
Eutrophication, marine	21%
Eutrophication, terrestrial	23%
Photochemical ozone formation	22%
Resource use, minerals and metals	28%
Resource use, fossils	23%
Water use	33%
Climate change (GWP-GHG)	23%

Additional information:

Energy source: It has been considered the residual electricity mix from a specific supplier for the year 2023 (source: CNMC Spain). The electricity consumed is medium voltage electricity taking into account direct emissions and losses in the grid. This mix has a factor of 0.262 kg CO_{2e} / kWh.

Allocation processes In this study, there are no co-products in the manufacture of VERTISOLFLOOR, so material allocation is not required. The methodological choices for allocation for reuse, recycling and recovery have been set according to the polluter pays principle (PPP).

For waste allocation, the manufacturer has provided detailed data on the quantities of waste generated by each production process, categorized by type. The amount of waste generated per square meter (m²) of VERTISOLFLOOR produced has been calculated based on the percentage of VERTISOLFLOOR production relative to the total production at the plant.

In terms of packaging, three packaging systems have been quantified: packaging used for transport from Galicia to Belgium, packaging from Belgium to Galicia, and packaging destined for the end customer. To determine the attributable weight per functional unit (m²), each packaging system material was weighed individually. The kg/m² of each type of packaging was established according to its capacity to package the product. Some materials are reused, and the frequency of reuse is reflected in the results by estimating the amount of reuse.

Cut-off rules and considerations: According to EN 15804, at least 95% of inputs (mass and energy) per module must be included. All relevant inputs have been considered to ensure a thorough assessment of the environmental impacts. The lubricant used in Galicia has been excluded from the analysis due to its low consumption and the difficulty of assigning specific quantities to the different processes. This exclusion does not exceed 5% of the total inputs, thereby ensuring transparency in the analysis.

Flows less than 1% of the total inventory were excluded:

- Construction of company plant and processing machinery
- Staff travel and homework transfers.
- Research and development activities
- The materials necessary for cleaning the machinery.

Assumptions: In any study of the life cycle there are data that are difficult to obtain and corroborate. These data, necessary for modeling and calculations, are presented as an assumption in the most careful way possible, leaving clearly explicit what are the hypotheses considered, so that they can be easily modified if necessary.

In relation to the felt application process, the cutting and final finishing phase, the procurement of packaging materials for the customer and the distribution module have been modelled using data from the Granollers factory due to the availability of data from 2023.

Calculation methodologies: In this study, EN 15804 + A2 method is selected as Impact assessment method. The EN 15804 standard covers Environmental Product Declarations (EPDs) of Construction Products. In addition, a supplementary indicator for climate impact has been added:

GWP-GHG. This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. Temporary and permanent carbon storage is not allowed therefore the 15804 standard provides a set of requirements to prevent its accounting.

Content information

Product Components	Weight	Post-consumer material, weight	Biogenic material, weight	Biogenic material
Unit	kg/m ²	%	%	kg C / kg
PVC	0.671	0%	0%	0
Polyester	0.088	0%	0%	0
PVC Backing	2.620	0%	0%	0
Polyester Felt	0.052	0%	0%	0
Adhesive Web	0.005	0%	0%	0
TOTAL	3.436	0%	0%	0

Packaging materials	Weight	Weight (versus the product)	Post-consumer material, weight	Weight biogenic carbon
Unit	kg/m ²	%	%	kg C / kg
Wood	0.250	7.27%	0.00%	0.446
Cardboard	0.125	3.64%	97.75%	0.199
Plastic	0.013	0.39%	2.78%	
TOTAL	0.388	11.31%	31.57%	0.646

1 kg of biogenic carbon is equivalent to 44/12 kg CO₂.

The VESTISOLFLOOR product covered by this EPD stands out for its ease of cleaning and maintenance. It is free from harmful compounds such as phthalates, formaldehyde, halogens, and antimony trioxide, ensuring a safe and healthy environment for various types of spaces, including residential, commercial, and high-traffic areas. Additionally, VERTISOLFLOOR does not contain Substances of Very High Concern (SVHC) as defined in Article 59 (10) of Regulation (EC) No 1907/2006 (dated 2023-01-17), also known as the REACH Candidate List, in a concentration equal to or greater than 0.1% by weight.

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.

Usage of results from A1-A3 without considering the results of module C is not encouraged.

Mandatory impact category indicators according to EN 15804+A2 (Reference package EF3.1)

Results per Functional Unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	1,13E+01	7,27E-01	2,29E+00	0	1,16E-01	0	0	0	0	0	0	1,98E-02	0	9,33E-03	-1,80E-02
GWP-biogenic	kg CO ₂ eq.	-4,84E-01	3,90E-05	5,05E-01	0	5,03E-04	0	0	0	0	0	0	1,27E-06	0	7,62E-07	2,94E-05
GWP-luluc	kg CO ₂ eq.	6,78E-02	1,72E-03	6,35E-03	0	1,56E-03	0	0	0	0	0	0	7,68E-05	0	3,82E-07	-1,11E-06
GWP-total	kg CO ₂ eq.	1,09E+01	7,29E-01	2,81E+00	0	1,18E-01	0	0	0	0	0	0	1,99E-02	0	9,33E-03	-1,80E-02
ODP	kg CFC 11 eq.	5,76E-06	1,17E-08	8,91E-08	0	6,97E-10	0	0	0	0	0	0	3,31E-10	0	1,38E-10	-7,36E-10
AP	mol H ⁺ eq.	3,87E-02	4,51E-03	1,05E-02	0	5,63E-04	0	0	0	0	0	0	8,36E-05	0	8,48E-05	-6,99E-05
EP-freshwater	kg P eq.	3,17E-04	1,42E-06	7,23E-05	0	1,40E-05	0	0	0	0	0	0	5,39E-08	0	3,36E-08	-2,82E-07
EP-marine	kg N eq.	8,82E-03	1,61E-03	1,85E-03	0	2,08E-04	0	0	0	0	0	0	3,60E-05	0	3,85E-05	-1,07E-05
EP-terrestrial	mol N eq.	1,03E-01	1,76E-02	2,12E-02	0	1,16E-03	0	0	0	0	0	0	3,87E-04	0	4,22E-04	-1,53E-04
POCP	kg NMVOC eq.	4,77E-02	5,35E-03	8,19E-03	0	3,33E-04	0	0	0	0	0	0	1,23E-04	0	1,28E-04	-8,99E-05
ADP-minerals&metals*	kg Sb eq.	2,12E-04	3,80E-08	8,34E-06	0	2,61E-08	0	0	0	0	0	0	1,32E-09	0	3,69E-10	-2,31E-08
ADP-fossil*	MJ	2,83E+02	9,60E+00	4,09E+01	0	1,49E+00	0	0	0	0	0	0	2,64E-01	0	1,20E-01	-3,94E-01
WDP*	m ³	1,12E+01	8,35E-03	7,35E-01	0	1,77E-02	0	0	0	0	0	0	2,65E-04	0	1,09E-04	-5,20E-03
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 Functional Unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1,13E+01	7,29E-01	2,30E+00	0	1,17E-01	0	0	0	0	0	0	0	1,99E-02	0	9,33E-03	-1,80E-02

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.

Resource use indicators

Results per Functional Unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1,10E+01	3,36E-02	6,97E+00	0	2,57E-01	0	0	0	0	0	0	1,19E-03	0	5,68E-04	-1,14E-01
PERM	MJ	5,22E+00	0	-5,22E+00	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	1,62E+01	3,36E-02	1,75E+00	0	2,57E-01	0	0	0	0	0	0	1,19E-03	0	5,68E-04	-1,14E-01
PENRE	MJ	2,30E+02	1,02E+01	3,48E+01	0	1,58E+00	0	0	0	0	0	0	2,80E-01	0	8,27E+01	-4,24E-01
PENRM	MJ	7,35E+01	0	9,06E+00	0	0	0	0	0	0	0	0	0	0	-8,25E+01	0
PENRT	MJ	3,04E+02	1,02E+01	4,39E+01	0	1,58E+00	0	0	0	0	0	0	2,80E-01	0	1,27E-01	-4,24E-01
SM	kg	1,27E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m ³	1,08E+01	8,32E-03	7,29E-01	0	1,80E-02	0	0	0	0	0	0	2,64E-04	0	1,09E-04	-5,19E-03
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 Functional Unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C3	D
Hazardous waste disposed	KG	4,66E-03	6,46E-05	8,65E-04	0	2,57E-06	0	0	0	0	0	0	1,81E-06	0	7,93E-07	-7,10E-06
Non-hazardous waste disposed	KG	2,93E-01	3,29E-04	6,70E-02	0	1,64E-03	0	0	0	0	0	0	1,10E-05	0	3,43E+00	-1,87E-04
Radioactive waste disposed	KG	6,56E-04	4,01E-07	3,53E-05	0	3,81E-06	0	0	0	0	0	0	1,07E-08	0	7,34E-09	-8,36E-08

Output flow indicators

Results per Functional Unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	KG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	KG	8,90E-02	0	2,30E-01	0	0	0	0	0	0	0	0	0	0	0	0
Materials for energy recovery	KG	2,09E-01	0	1,02E-01	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Interpretation of the environmental performance results

The stage of the life cycle with the highest environmental load is the product phase (A1-A3), with the following contributions:

Contribution of the product phase (A1-A3) to the total life cycle:	
Impact Category	Functional unit
Climate Change (GWP-GHG)	78%
Ozone depletion	98%
Resource use, minerals, and metals	96%
Water Use	94%

The next stage is the construction phase (A4-A5), the second most impactful stage with the following contributions.

Contribution of the construction phase (A4-A5) to the total life cycle:	
Impact Category	Functional unit
Climate Change (GWP-GHG)	21%
Acidification	28%
Eutrophication, marine	28%

Additional environmental information

Conversion Factor for GWP-GHG (Module A1-A3):

The following conversion factor applies exclusively to the GWP-GHG category for modules A1-A3. This factor allows for the calculation of the impacts in the GWP-GHG category for the models presented in this EPD (included in the Product Information section).

The conversion factor has been calculated by dividing the kg CO₂e from the A1-A3 module of the declared product (in the GWP-GHG category) by the declared weight (3.436 kg). This results in the factor expressed in kg CO₂e per kg of product.

Since the density of each model may vary, users should apply this factor by multiplying it by the established density for their purchased model to obtain an indicative value for GWP-GHG emissions.

Conversion Factor (kg CO ₂ e / kg)
3.3

How to Apply the Conversion Factor: Multiply the established density for your model (in kg/m²) by the conversion factor (3.3 kg CO₂e / kg).

This method offers an indicative estimate of the environmental impact of your specific product for module A1-A3.

It is important to emphasize that the results obtained through this calculation are not exact but are considered sufficiently representative to contribute to the transparency and accuracy of this EPD.

Differences versus previous versions

For the updated Environmental Product Declaration (EPD), the following differences compared to the previously published version are noted:

- **Product Name Change:** The product name has been updated from "Fitnice" to "VERTISOLFLOOR."
- **Declared Product:** The declared product now reflects an average based on 2023 sales for the group of products represented. This update ensures that the EPD more accurately represents current market conditions.
- **Addition of Acoustic Range:** A new acoustic range has been added to the product offering, which was not included in the previous version. This addition reflects an expanded product line and the updated EPD now covers this new category.

References

- ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework.
- ISO 14044:2006 Environmental Management - Life Cycle Assessment - Requirements and Guidelines.
- ISO 14025:2006 Environmental Labels and Declarations - Type III Environmental Declarations - Principles and Procedures.
- EN 15804:2012+A2:2019/AC:2021. Sustainability in construction. Environmental product declarations. Basic product category rules for construction products.
- GPI, General Program Instructions for the International EPD[®] System v4.0.
- PCR 2019:14 Construction Products v 1.3.4
- c-PCR 004 Resilient, textile, and laminate floor coverings.
- Zirkel (2024). Life Cycle Analysis Report of VERTISOLFLOOR.

