ENVIRONMENTAL PRODUCT DECLARATION

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

Artcoustic ECOpanel Panel Range

By Aistec Aislamientos S.L.U.

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This EPD must provide current information and may be updated if conditions change. Therefore, the validity indicated is subject to continued registration and publication in ww.environdec.com This EPD corresponds to an EPD of a weighted average product of the products: ECOPANEL of 12mm and 24 mm, manufactured in a single location.
This EPD is an EPD multi-product-based a product average.

Program Information

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Product category rules (PCR):	**PCR 2019:14 Construction products version 1.3.4 (EN 15804+A2)** **c-PCR-014 Acoustical wall and ceiling solutions**

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.

Independent third-party verification of EPD and data, in accordance with ISO 14025:2006:

☐ EPD process certification ☒ EPD verification

Third-Party Verifier: Verifier approved by the International EPD® System**.**

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Approved by: The International EPD® System

The procedure for tracking data during the validity of the EPD involves a third-party verifier:

☐ Yes ☒ No

Manufacturer Information:

EPD Owner: Aistec Aislamientos, S.L.U.

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Web: https://aistec.com/

Development of the EPD: **SGS TECNOS S.A.U**

General information

Maker: Aistec Aislamientos, S.L.U.
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Spain

Company Overview:

Since its founding in 1998, **AISTEC** It has been able to adapt to the demands of the construction market, the demands of customers and consumers, a fact that is reflected in its constant growth as a company and in the continuous expansion of the range of products and services it offers. During these years, AISTEC has developed all kinds of acoustic solutions and AISTEC is currently focused on acoustic conditioning solutions for interior spaces.

In addition, AISTEC has a design department for the creation of products and customization of the customer's customized solutions, which together with the production team make prototypes and verify each product.

AISTEC creates innovative solutions exceeding market expectations and showing its firm commitment to excellence in the distribution of quality products. In addition, as a complement to acoustic solutions, it offers biophilia solutions and furniture that complement its portfolio.

ECOpanel is an acoustic panel that is born from the recycling of PET plastic bottles. It has a **excellent acoustic performance and a textile-like finish,** Perfect to combine with any surface. Panels made from recycled PET plastic bottles provide a versatile and functional solution capable of adapting to any type of application. This material allows the design of a wide range of products, from interior space coverings to decorative elements. The ECOpanel has a thickness availability of the customer's choice that varies between 6, 9, 12 and 24 mm.

It should be noted that Aistec's philosophy has led to the renewal of the vehicle fleet and the incorporation of hybrid cars. In addition, packaging made from recycled materials has been adopted, and Aistec ensures that its suppliers also share its environmental commitment. The framework of reference through which environmental objectives are intended to be achieved can be defined through the following objectives:

- Ensure that the quality of the product and service meets the needs and expectations of the customer, describing the processes and listening carefully to their complaints, claims and suggestions.

- To enhance the growth of the organization including the international market.
- Reduce the consumption of natural resources used by the organization and encourage the use of more sustainable materials.

The ECOpanel comes in several sizes, being an excellent option to customize and improve any environment, since its textile finish allows it to combine perfectly with any surface. This model offers a palette of up to 64 colors. Likewise, the ECOprint model allows any type of design, brand, photograph and even logos to be captured, facilitating its implementation in innovative projects.

This EPD is specific for 12mm and 24mm ECOpanel.

The objective of this report and the EPD is to become a useful tool for those interested in the construction sector who are increasingly demanding more information on the environmental impact of buildings and works.

Product Life Cycle Assessment (LCA) also allows for a better understanding of manufacturing processes and their environmental impact.

Product Category Rule (PCR): PCR 2019:14 Construction products version 1.3.4 (EN 15804+A2)

Product Information

Name of the product or family of products covered by this EPD:

This Environmental Product Declaration (EPD) describes the environmental impacts corresponding to the application from the ECOpanel range of Aistec. The EPD describes the environmental impacts corresponding to the per m^2 of average ECOpanel product. This EPD is specific for 12mm and 24mm ECOpanel.

CPC CODE: 54790

Description of the product and its use:

The artcoustic ECOpanel product is the product and the main image of the Aistec brand. Panels made from recycled PET plastic bottles provide a versatile and functional solution capable of adapting to any type of application.

This material allows the design of a wide range of products, from interior space coverings to decorative elements. Although the ECOpanel has an availability of thicknesses of the customer's choice that varies between 6, 9, 12 and 24 mm, this EPD refers to the ECOpanel of 12mm and 24mm.

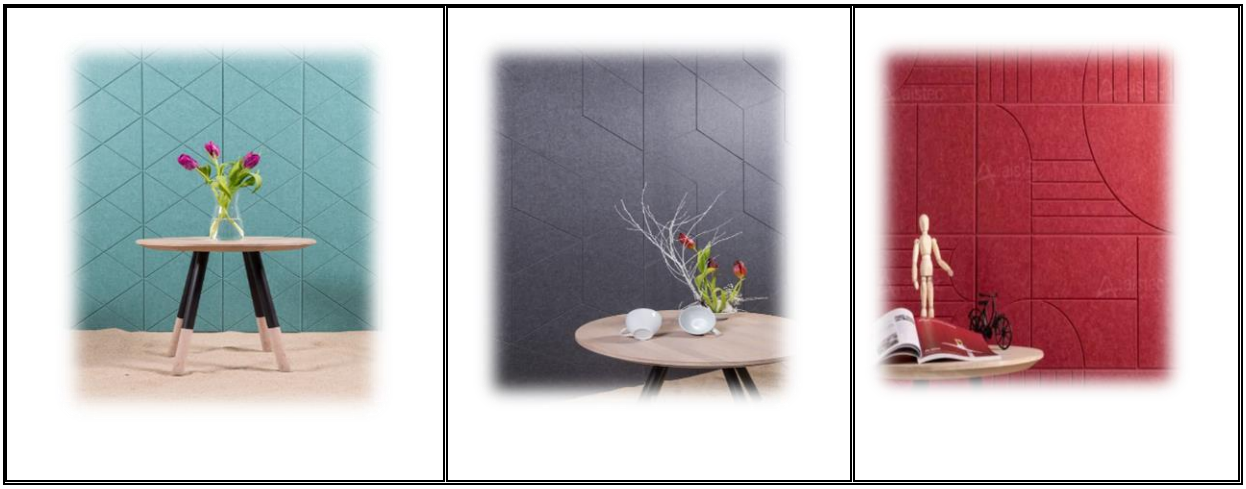

Figure 1: ECOpanel panels.

The ECOpanel products that have been considered according to thickness in this EPD have been the following:

Product	Thickness
ECOpanel	12 mm
ECOpanel	24 mm

Technical data and physical properties:

Designation of the reference	Raw material	Certifications	Fireproof	Antibacterial test
ECOpanel with a thickness of 12mm and 24 mm	100% polyester fiber	REACH, GRS, LEED	ASTM E84 Class A	E. coli reduction rate 96%

Description of System Components:

The virtual ECOpanel analysed corresponds to an average based on the annual production at AISTEC, of the different references that are part of the panels of the ECOpanel range that are part of this EPD during the year 2022. The main composition of this virtual ECOpanel is shown in the table below.

Of the amount of PET that makes up the ECOpanel (95%), 75% is recycled PET and 25% is Virgin PET (Table 1).

Table 1: Amount of PET that makes up the ECOpanel

Main component	Weight (%)
Recycled PET	75
Virgin PET	25
TOTAL	**100**

Table 2: ECOpanel virtual composition for the Average Product.

Main component	Weight (kg/m2)	Post-consumer recycled material, weight %	Biogenic material, kg C/kg
Recycled PET	1,738	100,00	0,00
Virgin PET	0,579	0,00	0,00
Painting	0,122	0,00	0,00
TOTAL	**2,439**	**71,26**	**0,00**
Packaging material	Weight (**kg/m2**)	Weight % (about product)	Biogenic material, kg C/kg
Pallets	0,8236	33,37	1,51
Cardboard	0,0230	0,94	0,04
Bubble	0,0130	0,53	0,00
Corner	0,0131	0,54	0,00
Strapping	0,0003	0,01	0,00
Clear adhesive tape	0,0005	0,02	0,00
Adhesive tape with Aistec logo	0,0002	0,01	0,00
TOTAL	**0,8738**	**35,83**	**1,55**

During the life cycle of the product, no hazardous substances included in the "List of Candidates for Authorisation (SVHC)" have been used at a rate greater than 0.1% of the weight of the product. All

quantities specified in the virtual ECOpanel component description table refer to the ECOpanel panel panel range, unifying all stages of the life cycle.

Table 3: Amount of biogenic carbon in the product.

Results by functional unit		
BIOGENIC CARBON CONTENT	**UNIT**	**QUANTITY**
Biogenic carbon contained in the product	kg C	0
Biogenic carbon contained in packaging	kg C	1,55

LCA Information

FUNCTIONAL UNIT	2,439 kg of product per m^2 with a thickness of 12.443 mm.
SYSTEM LIMITS	From "Cradle to Grave + Module D" (A + B + C + D)
REFERENCE SERVICE LIFE (RSL)	50 years
COURT RULES	Minimum 99% energy consumption is considered for manufacturing facilities. 99% of the raw material is considered by mass. The following processes have been excluded: - Manufacture of equipment used in production, buildings, or any other capital goods - Transportation of personnel to the plant - Transportation of personnel within the plant - Research and development activities - Long-term issuances.
ASSIGNMENTS	Whenever possible, assignments have been avoided. For cases where this has not been possible, a mass-based physical assignment is made. The data referring to the composition of the system have been obtained directly and have been analysed following the principles of *modularity* and *polluter pays*. The allocations of the composition declared in this EPD have been made for the weighted average of raw materials according to manufacturing data for each of the references.
GEOGRAPHICAL COVERAGE	Global
PERIOD	2022
LCA SOFTWARE USED FOR CALCULATION	Ecoinvent 3.10 (allocation, cut-off by classification) with the database Simapro 9.6.0.1 used for LCS calculations. The LCA methods used are in accordance with the UNE-EN 15804 Standard: EN 15804:2012 + A2:2019

Data quality

The data collected regarding components and energy correspond to the year 2022 and include data on raw materials consumed and energy consumption. The plausibility and consistency of the data collected has been verified. It can therefore be considered good data quality.

In the calculation of the LCA of the system, the flows related to the construction of the production plants, the application machines or the transport of the employees have not been considered and the methodology indicated in the UNE-EN 15804 standard: EN 15804:2012 + A2:2019 has been followed.

Other information:

This LCA has been carried out by **SGS TECNOS S.A.U**. The bills for material and energy consumption have been collected and checked. The study covers at least 95% of the materials and energy per module and at least 99% of the total material and energy use of each unit process.

Life cycle and Compliance:

This EPD includes the steps shown in Table 3. This statement is of the cradle-to-grave type. The EPD of the ECOpanel panel product range has been made from a weighted average of raw materials according to the production of each included reference.

This declaration may not be comparable with those developed in other programs or according to different reference documents; specifically, it may not be comparable with Declarations not prepared according to standard EN 15804:2012 + A2:2019/AC:2021. Similarly, environmental declarations may not be comparable if the source of the data is different, the same information modules are not included, or they are not based on the same scenarios.

Table 3: System limits. X: Declared module; ES: Spain; GLO:Global

	Product Stage				Stage of the construction process	Stage of use								End-of-life stage				Resource Recovery Stage
	Supply of raw materials	Transport	Manufacturing	Transport	Construction Facility	Use	Maintenance	Repair	Replacement	Restoration	Operational Energy Use	Operational use of water	Deconstruction, demolition	Transport	Waste treatment	Disposal	Reuse-Recovery-Recycling-Potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Declared Modules	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	GLO	GLO	IS	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO
Specific data used	18% GWP-GHG				-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	26%				-	-	-	-	-	-	-	-	-	-	-	-	-
Variation: Sites	0%				-	-	-	-	-	-	-	-	-	-	-	-	-

Table 4. Total Participation of Primary Data in GWP-GHG Results for A1-A3 for Virtual ECOpanel

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP GHG results for A1-A3
Manufacturing of product	Collected data	EPD owner	2022	Primary data	0,00%
Generation of electricity used in manufacturing of product	Database	Ecoinvent v3.9	2022	Secondary data	12,49%
Transport of raw materials	Database	Ecoinvent v3.9	2022	Primary data	4,20%
Production of packaging	Collected data	EPD owner	2022	Primary data	0,01%
Other processes	Database	Ecoinvent v3.9	2022	Primary data	1,46%
Total share of primary data, of GWP-GHG results for A1-A3					**18,15%**

Stages of Life cycle

Understanding System Boundaries: **Cradle to grave +module D**

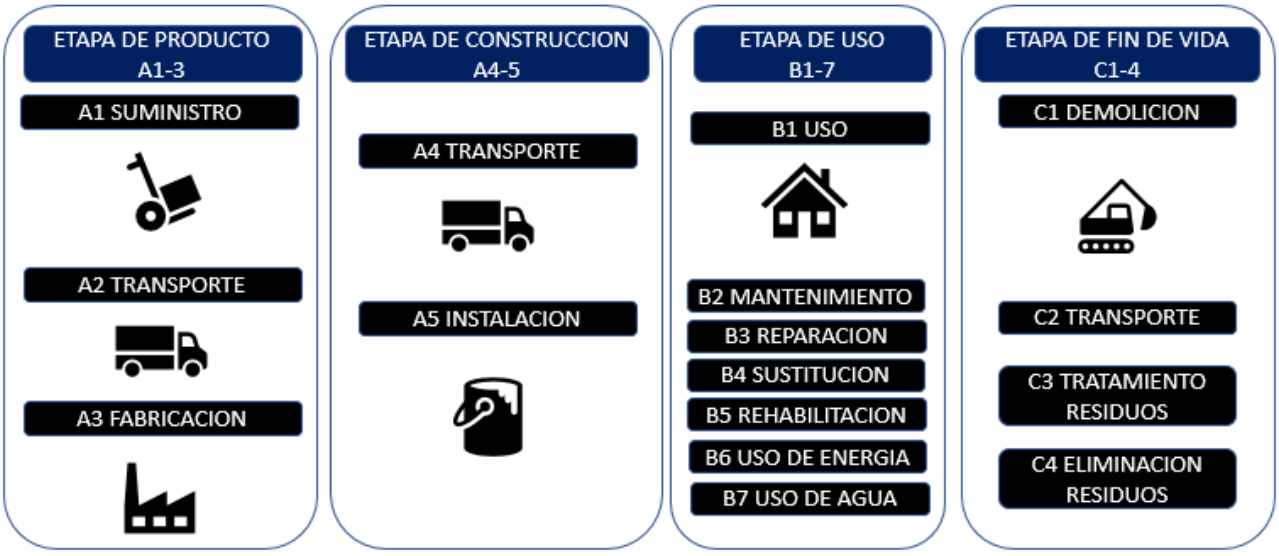

Figure 2: Stages of the life cycle of a product according to the "cradle to the grave" analysis.

Product Stage A1 - A3

Stage Description:

The product stage of the virtual panel analysed included in the ECOpanel range it is subdivided into modules A1 supply of raw materials, A2 transport to the manufacturer and A3 manufacturing. The grouping of these three modules is contemplated in the UNE-EN15804: EN 15804:2012 + A2:2019/AC:2021 standard that is applied in this EPD.

A1 Supply of raw materials

This module refers to the extraction and pre-processing of raw materials and energy sources used in the manufacture of the products that make up the system.

A2 Transportation

This module includes the transport of raw materials to the manufacturing plant. For this module, a Euro VI truck and a Container Ship ship are used as transport.

A3 Manufacturing

This module mainly contemplates energy consumption during the manufacture of the product, as well as the manufacture of the product. The A3 stage, corresponding to manufacturing, begins with an exhaustive study of the customer's needs, to determine what type of product they need, as well as the specific requirements and a study of the project. The electricity production model used corresponds to the year 2022, of own elaboration, specific for AISTEC's 12 mm and 24 mm ECOpanel.

It is considered that 100% of the packaging waste generated during the production process in the Manufacturing are sent to landfill. El mix eléctrico empleado es el 0,488403 kg CO_{2eq}/Kwh

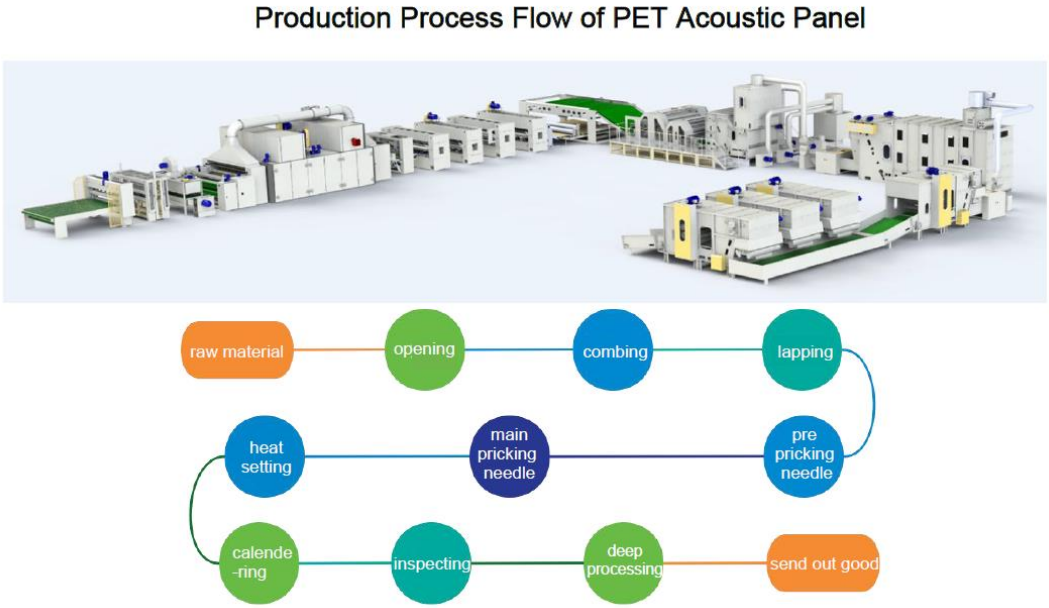

Figure 3: Simplified flow diagram of the acoustic panel production process carried out in the supplier's factory.

Construction process stage A4 - A5

Stage Description:

The process stage of the construction of the virtual panel is a representative weighted average of the panels in the ECOpanel range and subdivided into modules A4 transport to the customer and A5 installation.

A4 Transport to the site of application

This module provides for the transport of system components from the production site to the application site, including the possibility of intermediate storage. In this module, the weighted distances averaged according to the type of transport used and the final destination of the product have been considered, as shown in Figure 3.

Transport is calculated on the basis of a scenario whose characteristic parameters are described in the following table.

PARAMETER	VALUE (expressed by **functional unit)**
Fuel consumption of the vehicle or means of transport used	Truck with an average load of 16-32 t (euro 6) for land transport and medium-duty aircraft for air transport.
Weighted average total distance	540.8 km by land 68.4 km plane
Density per Unit of Surface of the Transported Product	195,998 kg/m3
Load capacity utilization (in volume, including return of unladen transport)	% assumed in the Ecoinvent database

Figure 4: Stage A4.

A5 Installation

This module covers the application of the product, and includes:

- The waste derived from the application of the panel corresponds to the waste derived from the product packaging, being the same sent to landfill.
- Losses during the installation of the panel have been taken into account in such a way that a 1% loss has been considered in accordance with the principle of modularity.

PARAMETER	VALUE (expressed by functional unit)
Secondary materials used in the installation	None
Electricity consumption during the installation process	It is regarded as minimal.
Material residue during installation at the customer	1% of components

Waste in installation (collection for recycling, energy recovery (recovery) or landfill (specifying the route)	100% of product packaging waste is landfilled. Conservation methodology: waste per square metre of product deposited in landfill.
Packaging waste to treatment centre	0,000 kg 0%
Packaging waste to landfill	0,87 kg 100%
Recycled packaging per m^2 Product Range	0,000 kg[1]

Figure5: Stage A5.

The declaration does not contemplate the impact related to the optional use of products or accessories not expressed in the technical data sheet of the system used.

Stage of Use (excluding possible savings) B1 - B7

Stage Description:

This stage refers to the operation of the building and includes emissions to the environment caused by the use of the product (module B1) or by subsequent technical operations: maintenance, repair, replacement or renovation (modules B2 to B5 respectively):

- B1: There are no inputs or outputs.
- B2 maintenance, B3 repair, B4 replacement, B5 rehabilitation: Although once the panels are applied, the system components do not require technical actions or operations until the end-of-life stage, it is considered that the product has no impact in these modules. However, certain cleaning recommendations are taken into account.
- B6, B7: The product does not use water or electricity during its lifetime. The use stage does not include the use of energy in service (module B6) and the use of water in service (module B7).

During the use stage (B) no waste is accounted for because the waste derived from use is out of AISTEC's control.

[1] There are no recycled materials in the product packaging.

End-of-life stage, C1 - C4

Stage Description:

This phase is made up of the modules related to the end of life, C1 to C4, which are detailed below:

- C1, deconstruction, demolition: As the demolition and/or dismantling of the product is part of the demolition of the system itself, it is assumed that the environmental impact is not significant and can therefore be underestimated.
- C2, transport: Includes the transfer of construction waste from the site to the waste treatment point, estimated at a distance of 50 km.
- C3, waste treatment: It includes the reuse, recovery, and/or recycling of waste. For Europe, it is assumed that 70% of the waste is recovered in a treatment facility according to DIRECTIVE (EU) 2018/851 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of May 30, 2018, amending Directive 2008/98/EC on waste (hereinafter, Directive (EU) 2018/851). For the case of the Dominican Republic, it is assumed to be landfilled.
- C4, waste disposal: 30% of waste is supposed to be disposed of in a landfill and an average distance of 50 km is considered.

PARAMETER	VALUE (expressed by functional unit)	
Collection process (mixed with the rest of the CDW)	2.44 kg per m^2 of product.	
Recovery System	Recovery (70%) – 0.7 m^2 0,65 kg	
Disposal (in landfill)	ECOpanel	30% -0.3 m^2 0,27 kg
Transport assumptions for scenario development	Medium Duty Truck 16-32 t (Euro 6)	
Distance to landfill	50 km	

Figure 6: Stage C1-C4

Reuse/Recovery/Recycling Potential, D

Module D declares the environmental benefits of reusing and recycling products, as well as energy recovery.

In this EPD, the environmental burdens avoided as a result of recycling carried out throughout the life cycle of the product are considered, considering that 70% of the product is taken to recycling and 30% of the product is taken to landfill, so it has been considered an environmental benefit.

In this module, a 70% saving resulting from recycling carried out throughout the life cycle has not been computed and the net balance of raw material is considered.

Environmental impacts of the product

The LCA results are detailed in the tables on the following pages, along with the interpretation of the global impacts produced per functional unit (2.44 kg per m² of the average weighted product from Aistec's ECOpanel range with a thickness of 12.443mm). The estimated impact results are only relative statements that do not indicate the end points of the impact categories, the exceeding of threshold values, safety margins, or risks.

To perform the LCA, the Simapro 9.6.0.1 software has been used, together with the Ecoinvent 3.10 database.

The following impact models have been used:

- CML-IA baseline V3.07/ EU25.
- ReCiPe 2016 Midpoint (H) V1.06 / World (2010) H.
- EDIP 2003 V1.07 / Default.
- Cumulative Energy Demand V1.11
- EF 3.1 Method (adapted) V1.02 / EF 3.1 normalization and weighting set.
- IPCC 2021 GWP 100a

IMPACT RESULTS

The product studied in this EPD is the ECOpanel range of 12mm and 24mm panels, with a weighted average weight per square meter of 2.439 kg/m², considering painted panels, with a thickness of 12.443 mm and a density of 195.998 kg/m³.

POTENTIAL ENVIRONMENTAL IMPACTS OF THE VIRTUAL ECOPANEL PRODUCT

Parameters		Product Stage	Construction Process Stage		Stage of use							End-of-life stage				Module D
		A1 / A2 / A3	A4 Transportation	A5 Installation	B1 Application	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 In-Service Energy Use	B7 Use of water in service	C1 Deconstruction/demolition	C2 Transportation	C3 Waste treatment	C4 Waste disposal	Potential for Reuse, Recovery and Recycling
Global Warming Potential, GWP - *kg CO_2 eq (NA)*	Fossil- kg CO2 eq	1,17E+01	1,41E-01	1,23E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,84E-02	3,56E-01	3,71E-03	-5,41E-01
	Biogenic- kg CO2 eq	-3,96E-01	0,00E+00	3,96E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,39E-06	2,42E-01	2,52E-05	-1,18E-03
	Land use and transformation - kg CO2 eq	1,59E-02	4,26E-06	1,60E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,54E-07	2,34E-04	7,60E-07	-3,93E-04
	TOTAL – kg CO2 eq	1,13E+01	1,41E-01	5,19E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,84E-02	5,98E-01	3,73E-03	-5,42E-01
Stratospheric Ozone Depletion Potential (ODP)	kg CFC11 eq (NA)	8,98E-06	2,29E-09	8,99E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,98E-10	3,82E-09	6,27E-11	-1,66E-06
Acidification potential of soil and water resources, (PA)	mol H+ eq (NA)	5,84E-02	1,89E-04	6,15E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,42E-05	1,02E-05	2,40E-05	-2,34E-03
Eutrophication potential, Fraction of nutrients that reach freshwater as an end compartment (EP-freshwater) (NA)	kg P eq	6,55E-04	2,75E-07	6,59E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,59E-08	6,17E-04	2,79E-08	-2,97E-05
Eutrophication potential, Fraction of nutrients that reach seawater as an end compartment (EP-marine)	kg N eq.	1,28E-02	4,08E-05	1,41E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,11E-06	5,84E-03	1,04E-05	-4,26E-04
Eutrophication potential, Accumulated excess (EP-terrestrial)	*mol N eq (NA)*	1,33E-01	4,49E-04	1,47E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,63E-05	1,97E-03	1,14E-04	-4,42E-03

Tropospheric Ozone Formation Potential (POCP)	*kg NMVOC eq (NA)*	5,97E-02	3,30E-04	6,43E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,24E-05	2,99E-07	3,53E-05	-2,77E-03
Abiotic resource depletion potential for non-fossil resources (ADP -minerals & metals)	*kg Sb eq (2)*	7,39E-06	7,26E-09	7,42E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,46E-10	4,00E+00	1,33E-10	-3,93E-06
Abiotic resource depletion potential for fossil resources (ADP – fossil)	*MJ, net calorific value (2)*	1,70E+02	1,88E+00	1,78E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,45E-01	3,00E-02	4,91E-02	-1,03E+01
Water (use) potential, weighted deficiency and water consumption (WDP)	*m^3 depriv. (2)*	3,12E+00	1,44E-03	3,13E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,88E-04	9,28E-04	9,35E-05	-1,31E-01

Disclaimer-(1)- This category of impact mainly refers to the possible impact of low doses of ionizing radiation on human health from the nuclear fuel cycle. It does not take into account the effects due to possible nuclear accidents, occupational exposure or underground radioactive waste disposal facilities. Potential ionizing radiation from soil, radon, and some building materials is also not measured by this indicator.
Disclaimer-(2)- The results of this environmental impact indicator should be used with caution, as uncertainties about these results are high or experience with the indicator is limited.

ADDITIONAL MANDATORY ENVIRONMENTAL IMPACTS OF THE VIRTUAL ECOPANEL PRODUCT

Parameters		Product Stage	Construction Process Stage		Stage of use							End-of-life stage				Module D
		A1 / A2 / A3	A4 Transportation	A5 Installation	B1 Application	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 In-Service Energy Use	B7 Use of water in service	C1 Deconstruction/demolition	C2 Transportation	C3 Waste treatment	C4 Waste disposal	Potential for Reuse, Recovery and Recycling
GWP –GHG2	*kg CO2 eq.*	1,25E+01	1,44E-01	1,32E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,88E-02	5,80E-01	3,79E-03	-5,57E-01

Disclaimer-(1)- This category of impact mainly refers to the possible impact of low doses of ionizing radiation on human health from the nuclear fuel cycle. It does not take into account the effects due to possible nuclear accidents, occupational exposure or underground radioactive waste disposal facilities. Potential ionizing radiation from soil, radon, and some building materials is also not measured by this indicator.
Disclaimer-(2)- The results of this environmental impact indicator should be used with caution, as uncertainties about these results are high or experience with the indicator is limited.

POTENTIAL ENVIRONMENTAL IMPACTS OF THE VIRTUAL ECOPANEL PRODUCT ADDITIONAL AND VOLUNTARY IMPACTS

Parameters		Product Stage	Construction Process Stage		Stage of use							End-of-life stage				Module D
		A1 / A2 / A3	A4 Transportation	A5 Installation	B1 Application	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 In-Service Energy Use	B7 Use of water in service	C1 Deconstruction/demolition	C2 Transportation	C3 Waste treatment	C4 Waste disposal	Potential for Reuse, Recovery and Recycling
Potential incidence of emission diseases	**PM (PM) - disease inc. (NA)**	5,24E-07	8,42E-09	6,01E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,10E-09	5,80E-08	5,57E-10	-2,33E-08
Potential of human exposure efficiency relative to	**U235 (IRP) - kBq U-235 eq (1)**	5,76E-01	1,65E-04	5,81E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,15E-05	1,65E-03	3,85E-05	-1,29E-02
Potential Comparative Toxic Unit for Humans (HTP-c)	**CTUh (2)**	1,38E+02	1,20E-01	1,38E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,57E-02	3,18E+00	4,51E-03	-6,84E+00
Potential Comparative Toxic Unit for Humans (HTP-nc)	**CTUh (2)**	1,42E-08	1,07E-11	1,43E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,39E-12	5,37E-09	6,68E-13	-1,47E-09
Potential comparative toxic unit for ecosystems	**CTUe (2)**	6,89E-08	9,44E-10	7,21E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,22E-10	6,88E-09	1,80E-11	-5,13E-09
Soil Quality Index (SQP) Potential	**Pt (2)**	1,09E+02	6,55E-03	1,16E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,56E-04	2,65E-01	5,61E-02	-1,48E+00

Disclaimer-(1)- This category of impact mainly refers to the possible impact of low doses of ionizing radiation on human health from the nuclear fuel cycle. It does not take into account the effects due to possible nuclear accidents, occupational exposure or underground radioactive waste disposal facilities. Potential ionizing radiation from soil, radon, and some building materials is also not measured by this indicator.
Disclaimer-(2)- The results of this environmental impact indicator should be used with caution, as uncertainties about these results are high or experience with the indicator is limited.

VIRTUAL ECOPANEL PRODUCT RESOURCE USAGE

Parameters		Product Stage	Construction Process Stage		Stage of use							End-of-life stage				Module D
		A1 / A2 / A3	A4 Transportation	A5 Installation	B1 Application	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 In-Service Energy Use	B7 Use of water in service	C1 Deconstruction/ demolition	C2 Transportation	C3 Waste treatment	C4 Waste disposal	Potential for Reuse, Recovery and Recycling
Primary Energy Resources - Renewables	Used as a MJ energy source, net calorific value	2,44E+00	4,10E-03	3,20E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,34E-04	3,99E-02	1,08E-03	-4,73E-01
	Used as raw material MJ, net calorific value	1,61E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	TOTAL, MJ, Net Calorific Value	3,18E+01	4,10E-03	3,20E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,34E-04	3,99E-02	1,08E-03	-4,73E-01
Primary Energy Resources - Non-Renewable	Used as a MJ energy source, net calorific value	7,84E+01	4,18E-02	7,91E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,47E-03	7,66E-01	5,19E-03	-2,56E+00
	Used as raw material - MJ, net calorific value	4,25E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	TOTAL, MJ, Net Calorific Value	7,88E+01	4,18E-02	7,91E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,47E-03	7,66E-01	5,19E-03	-2,56E+00

Secondary Materials	kg	1,83E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net freshwater use	m3	8,03E-02	6,39E-05	8,09E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,33E-06	9,28E-04	4,67E-06	-3,75E-03

VIRTUAL ECOPANEL PRODUCT WASTE CATEGORY

Parameters		Product Stage	Construction Process Stage		Stage of use							End-of-life stage				Module D
		A1 / A2 / A3	A4 Transportation	A5 Installation	B1 Application	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 In-Service Energy Use	B7 Use of water in service	C1 Deconstruction/demolition	C2 Transportation	C3 Waste treatment	C4 Waste disposal	Potential for Reuse, Recovery and Recycling
Hazardous waste disposed of	***kg***	1,24E-02	1,28E-05	1,25E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,67E-06	2,53E-05	2,97E-07	-6,28E-04
Non-hazardous waste disposed of	***kg***	8,36E-01	7,28E-05	3,92E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,49E-06	6,24E-03	7,32E-01	-3,68E-02
Radioactive waste disposed of	***kg***	3,73E-04	9,82E-08	3,76E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,28E-08	1,04E-06	2,77E-08	-8,63E-06

OTHER OUTPUT STREAMS OF THE VIRTUAL ECOPANEL PRODUCT

Parameters		Product Stage	Construction Process Stage		Stage of use							End-of-life stage				Module D
		A1 / A2 / A3	A4 Transportation	A5 Installation	B1 Application	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 In-Service Energy Use	B7 Use of water in service	C1 Deconstruction/demolition	C2 Transportation	C3 Waste treatment	C4 Waste disposal	Potential for Reuse, Recovery and Recycling
Components for reuse	***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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material to be recycled	***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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,70714226	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	0,00E+00	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported, thermal energy	***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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Interpretation of the LCA

The following graph allows us to determine which stages of the Life Cycle have the greatest impact on the selected environmental indicators.

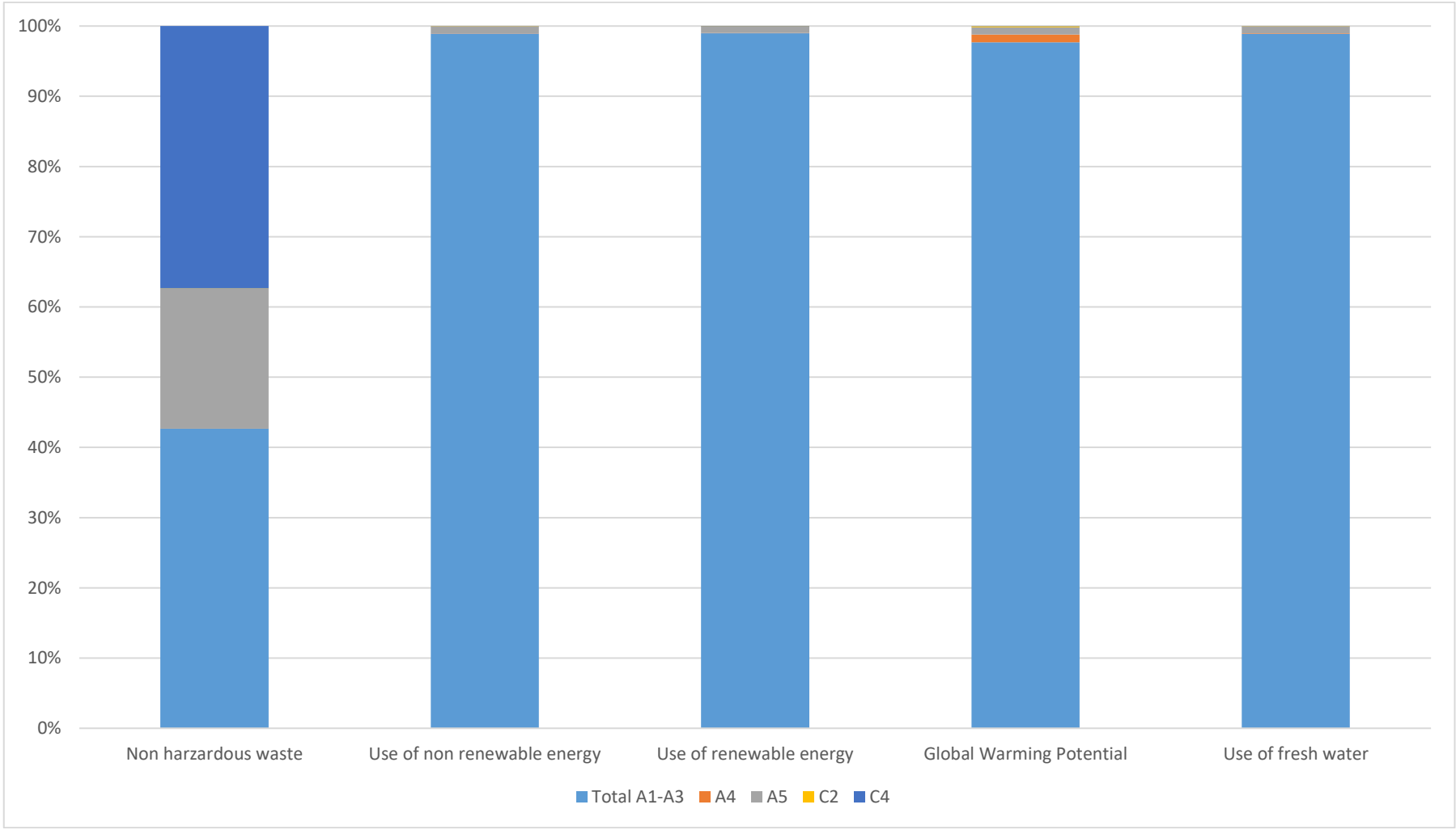

Figure 7: **Environmental impacts of the virtual panel.**

Health Information

View the safety data sheets for the system components.

https://aistec.com/cat/revestimiento-acustico/revestimientos-patterns/

Additional Environmental Information

AISTEC is an organization dedicated to developing all types of acoustic solutions and is currently focused on acoustic conditioning solutions for interior spaces, using acoustic panels made from recycled PET plastic bottles as the raw material. Additionally, it is committed to fulfilling its quality policy both in its products and services to meet the needs and expectations of its stakeholders.

Below are the variability tables corresponding to the impacts of the Virtual ECOpanel compared to the maximum and minimum impacts. Values greater than 10% are included.

Table 5. Significance Analysis of Virtual ECOpanel Products vs 24mm ECOpanel (A1-A3)

CATEGORÍA DE IMPACTO	UNIDAD	ANÁLISIS DE SIGNIFICANCIA
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO2 eq.	24%
Global Warming Potential - biogenic (GWP-biogenic)	kg CO2 eq.	41%
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO2 eq.	20%
Global Warming Potential - total (GWP-total)	kg CO2 eq.	23%
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	26%
Acidifications potential, Accumulated Exceedance (AP)	mol H+ eq.	25%
Eutrophication potential - freshwater (EP-freshwater)	kg P eq	26%
Eutrophication potential - marine (EP-marine)	kg N eq.	26%
Eutrophication potential - terrestrial (EP-terrestrial)	mol N eq.	26%
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	26%
Abiotic depletion potential - non-fossil resources (ADPE)	kg Sb eq.	26%
Abiotic depletion potential - fossil resources (ADPF)	MJ	24%
Global Warming Potential (GWP-GHG)	kg CO2 eq.	24%
Particulate Matter emissions (PM)	Disease incidence	26%
Ionizing radiation, human health (IRP)	kBq U235 eq.	16%
Eco-toxicity - freshwater (ETP-fw)	CTUe	26%
Human toxicity, cancer effect (HTP-c)	CTUh	28%
Human toxicity, non-cancer effects (HTP-nc)	CTUh	26%
Land use related impacts/Soil quality (SQP)	dimensionless	31%
Total use of renewable primary energy (PERT)	MJ	28%
Use of non-renewable primary energy as energy carrier (PENRE)	MJ	23%
Total use of non- renewable primary energy resource (PENRT)	MJ	23%

Use of secondary material (SM)	kg	0%
Net use of fresh water (FW)	m3	24%
Hazardous waste disposed (HWD)	kg	26%
Non harzardous waste disposed (NHWD)	kg	31%
Radioactive waste disposed (RWD)	kg	16%

Table 6: Análisis de significancia de los productos ECOpanel VIRTUAL vs ECOpanel 12mm (A1-A3)

CATEGORÍA DE IMPACTO	UNIDAD	ANÁLISIS DE SIGNIFICANCIA
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO2 eq.	-1,22%
Global Warming Potential - biogenic (GWP-biogenic)	kg CO2 eq.	-0,39%
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO2 eq.	-0,93%
Global Warming Potential - total (GWP-total)	kg CO2 eq.	-1,25%
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	-1,39%
Acidifcation potential, Accumulated Exceedance (AP)	mol H+ eq.	-1,31%
Europhication potential - freshwater (EP-freshwater)	kg P eq	-1,36%
Europhication potential - marine (EP-marine)	kg N eq.	-1,31%
Europhication potential - terrestrial (EP-terrestrial)	mol N eq.	-1,30%
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	-1,32%
Abiotic depletion potential - non-fossil resources (ADPE)	kg Sb eq.	-1,38%
Abiotic depletion potential - fossil resources (ADPF)	MJ	-1,21%
Global Warming Potential (GWP-GHG)	kg CO2 eq.	-1,23%
Particulate Matter emissions (PM)	Disease incidence	-1,36%
Ionizing radiation, human health (IRP)	kBq U235 eq.	-0,75%
Eco-toxicity - freshwater (ETP-fw)	CTUe	-1,38%
Human toxicity, cancer effect (HTP-c)	CTUh	-1,30%
Human toxicity, non-cancer effects (HTP-nc)	CTUh	-1,33%
Land use related impacts/Soil quality (SQP)	dimensionless	-1,02%
Total use of renewable primary energy (PERT)	MJ	-1,01%
Use of non-renewable primary energy as energy carrier (PENRE)	MJ	-1,14%
Total use of non- renewable primary energy resource (PENRT)	MJ	-1,13%
Net use of fresh water (FW)	m3	-1,19%
Hazardous waste disposed (HWD)	kg	-1,39%
Non harzardous waste disposed (NHWD)	kg	-1,34%
Radioactive waste disposed (RWD)	kg	-0,74%

Information on the EPD sector

This EDP is a product declaration for ECOpanel panels.

Differences from previous versions

This is the first version of the Environmental Product Declaration (EPD) and LCA.

Source of information

Ambit: Spain

Period: 2022

The information has been obtained from the Ecoinvent 3.10 databases and/or from raw material suppliers.

Raw Materials	Generic databases, and information from suppliers or producer associations
Production	Own data
Transport	Generic or specific information
Application	Generic or specific information
Life in Use	Generic information
End of Life	Generic information
Energy	Supplier Average

References

1. General Program Instructions of the International EPD® System. Version 4.0.
2. ISO 14020:2000: Environmental labels and declarations — General principles
3. ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures (2010).
4. ISO 14040, Environmental Management – Life Cycle Analysis – Principles and Framework (2006).
5. ISO 14044:2006, Environmental management – Life cycle analysis – Requirements and guidelines (2006).
6. PCR 2019:14 Construction products - version 1.3.4 - EN (2019): EN 15804:2012+A2:2019, Sustainability of construction works – Environmental product declarations – Core rules for product category of construction products)
7. UNE-EN 15804:2012+A2:2019/AC:2021 – Environmental Product Declarations – Basic Product Category Rules for Construction Products (2021).
8. c-PCR-014 Acoustical wall and ceiling solutions
9. ACV AISTEC v3 (2024).