ENVIRONMENTAL PRODUCT DECLARATION

Favemanc
Sistemas de fachada ventilada

FAVEMANC ventilated façade
(Alla classification according to UNE-EN 14411:2016)

DAPcons®.NTe.002

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

EPD of multiple products

According to the standards:
ISO 14025 and UNE-EN 15804:2012+A2:2020/AC:2021

cateb
Arquitectura Tècnica
Barcelona

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GENERAL INFORMATION

Product

FAVEMANC ventilated façade (AIIa classification according to UNE-EN 14411:2016)

Company

Product description

The included product is an average ceramic panel for ventilated façades of absorption group AIIa (shaped by extrusion with water absorption 3% < Eb ≤ 6%), which includes different product families. The results presented in this declaration refer to an average product encompassing various series. The average product has been calculated by considering the weights per m^2 of the different series included and weighting them according to the production during the studied period.

Reference RCP

UNE-EN 17160:2019 Product category rules for ceramic tiles.

Production plant

GRESMANC Group Plant
Carretera de Consuegra, Km 1.200
45470 Los Yébenes, Toledo – Spain

Validity

From: 03/10/2025 Until: 03/10/2030

The validity of DAPcons®.NTe.002 is subject to the conditions of the regulation DAPcons®. The current edition of this DAPcons® is the one that appears in the registry maintained by Cateb; for informational purposes, it is included on the Program website www.dapcons.com

EXECUTIVE SUMMARY

FAVEMANC ventilated façade (AIIa classification according to UNE-EN 14411:2016)

	DAPconstruction® Programme Operator Environmental Product Declarations in the Construction sector www.dapcons.com
	Programme Manager Colegio de la Arquitectura Técnica de Barcelona (Cateb) Bon Pastor, 5 · 08021 Barcelona www.cateb.cat
	Owner of the declaration Gresmanc Internacional S.L. Carretera de Consuegra km 1.200 45470 - YEBENES, LOS (España) https://www.gresmanc.com/
	Author of the Life cycle assessment: ReMa-INGENIERÍA, S.L. Calle Crevillente, 1, entlo., 12005 - Castelló, España

Declared product

FAVEMANC ventilated façade (AIIa classification according to UNE-EN 14411:2016)

Geographic representation

The raw materials of the product are of global origin. The product is manufactured at the GRESMANC Group plant (Los Yébenes, Toledo – Spain) and distributed worldwide.

Variability between different products

The variability of the impact categories in stages A1–A3 of the different products included in this declaration is 76%.

Declaration number

DAPcons®.NTe.002

Issue date

06/06/2025

Validity

This verified declaration authorizes its holder to carry the logo of the operator of the ecolabelling program DAPconstruction®. The declaration is applicable exclusively to the mentioned product and for five years from the date of registration. The information contained in this statement was provided under the responsibility of: **Gresmanc Internacional S.L.**

Programme Administrator Signature

Celestí Ventura Cisternas. President of Cateb

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Verifier Signature

Ferran Pérez Ibáñez. Institut de Tecnologia de la Construcció de Catalunya - ITeC. Verifier accredited by the administrator of the DAPcons® Programme

FERNANDO PÉREZ IBÁÑEZ
FERNANDO PÉREZ IBÁÑEZ 03.10.2025 16:55:09 +0200

ENVIRONMENTAL PRODUCT DECLARATION

1. PRODUCT DESCRIPTION AND USE

Water absorption group UNE-EN 14411:2016 Group AIIa: Glazed extruded ceramic tiles for wall cladding, both indoors and outdoors, with water absorption 3% < Eb ≤ 6% (Group AIIa).

The formats considered within the scope of this study have a surface density ranging from 11.78 kg/m² to 91.73 kg/m², with an average weight of 27.45 kg/m².

The results presented in this declaration refer to an average product encompassing various series. The average product has been calculated by considering the weights per m² of the different series included and weighting them according to the production of the year studied.

Intended uses: Glazed extruded ceramic tiles for wall cladding, both indoors and outdoors.

The CPC code of the products is 37310 – Ceramic tiles and flags, glazed or unglazed.

1.1 Content information

Product components

The components of the AIIa tile are:

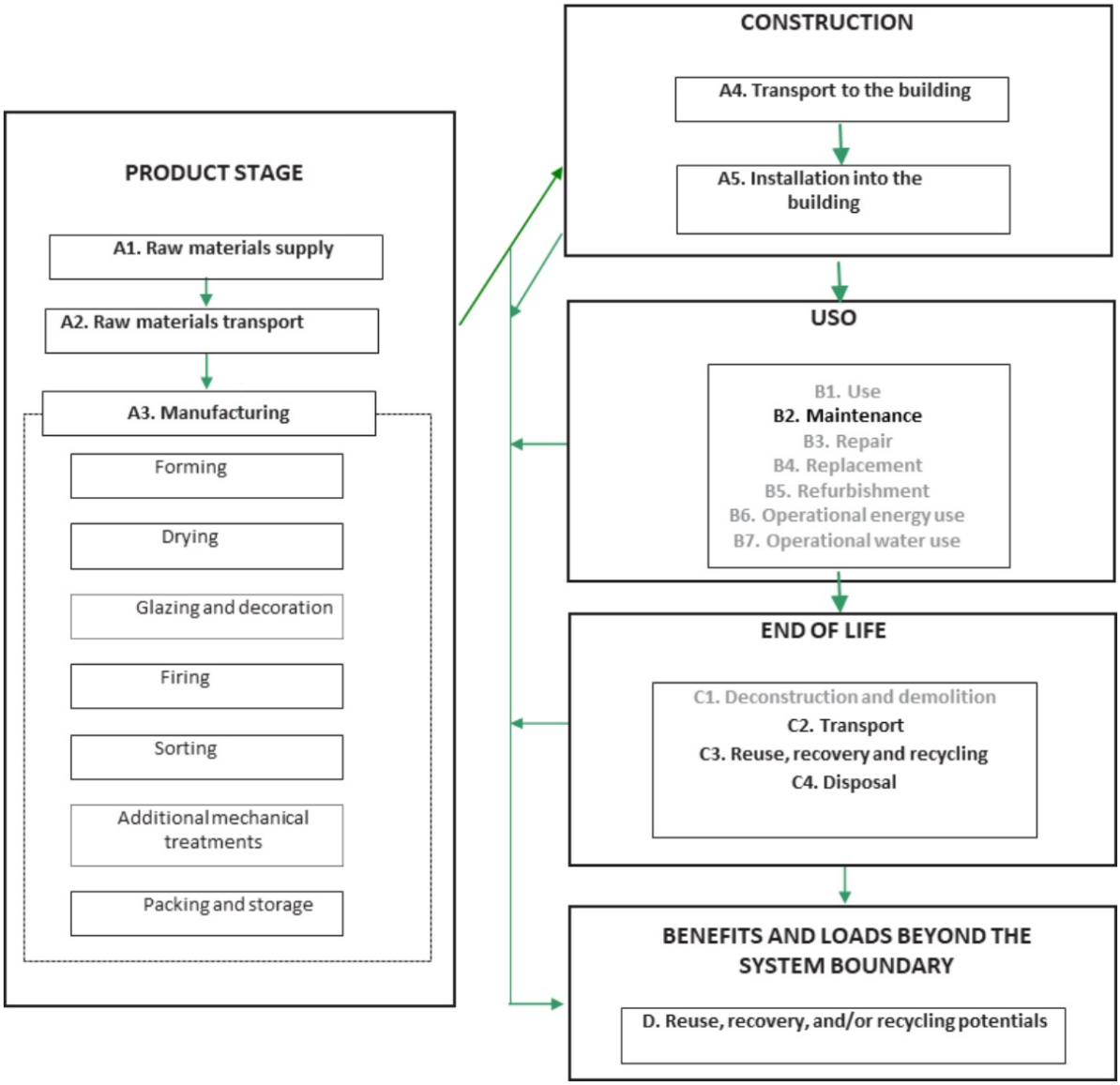
- White clay: 40–45%
- Red clay: 5–10%
- Internal chamotte: 20–25%
- Internal unfired ceramic waste: 25–30%
- Glaze: 0.4–0.5%

Packaging materials

The packaging materials are:

- Cardboard: 1.07E-01 kg/m²
- Plastic: 3.84E-02 kg/m²
- Wood: 5.45E-01 kg/m²
- Others (polystyrene foam): 1.17E-02 kg/m²

Características esenciales/ Essential characteristics	Clasificación/ Classification	Método ensayo/ Test method
Reacción al fuego Reaction to fire	A1	N/A
Fuerza de rotura Breaking strength	> 1100 N	EN ISO 10545-4
Resistencia al choque térmico Thermal shock resistance	Cumple Passed	EN ISO 10545-9
Durabilidad para usos interiores Durability for interior uses	Cumple Passed	N/A
Durabilidad para usos exteriores: Resistencia a la helada Durability for interior uses: Frost Resistance	Cumple Passed	EN ISO 10545-12
Emisiones de sustancias peligrosas Release of dangerous substances	NPD	N/A



2. DESCRIPTION OF THE STAGES OF THE LIFE CYCLE

2.1. Manufacturing (A1, A2 y A3)

Raw Materials and transport (A1 y A2)

The first stage of the production process is the reception and storage of the clays. Various virgin clays (red and white) and recovered ceramic material (chamotte, unfired ceramic waste, and internal sludges) are used as raw materials for the base of the AIb ceramic pieces. Once homogenized, the raw material is ready to be taken to the milling stage.

All the raw materials that make up the ceramic body are transported in bulk, meaning that no packaging material is required. It has been estimated that they are transported by road in a EURO VI truck with a 27-ton payload, over an average distance calculated based on the distances to the different suppliers and weighted by the quantities delivered in 2024.

For maritime transport, a medium-sized transoceanic cargo ship has been selected.

Manufacturing (A3)

The raw materials are transferred to the milling stage by loader or forklift, where the particle size of the raw materials is adjusted to the level required for dosing and mixing.

The different raw materials stored in their corresponding silos are dosed in the appropriate proportions and conveyed to the mixer, where they are blended with recycled water in a predetermined ratio. In the mixer, a homogeneous paste is obtained with a moisture content of approximately 20%, ready for extrusion.

The paste then passes to the shaping machine (extruder), where it is forced through a die with the required geometry, forming a continuous prism from which the pieces are cut. The pieces are then transferred to the dryer by means of an electric roller system.

The drying process aims to remove the water contained in the paste before glazing. For this purpose, the pieces are introduced into a roller dryer. Subsequently, glazing consists of the application, by different methods, of several layers of glaze covering the surface of the piece.

The firing of ceramic products is one of the most important stages in the manufacturing process, as many of the product's properties depend on it: mechanical strength, dimensional stability, chemical resistance, ease of cleaning, fire resistance, etc.

Once fired, the pieces proceed to classification, where they are visually inspected and defective items are set aside, with the rest moving on to the rectification process.

After rectification, the pieces are stacked and packaged, ready for dispatch.

2.2. Construction process stage (A4 y A5)

Transport to the building site (A4)

Gresmanc Internacional S.L.produces tiles that are marketed both nationally and in Europe, as well as in the rest of the world.

For transcontinental transport, an average transoceanic cargo ship has been considered. For road transport, the use of a EURO VI 27-ton truck has been estimated.

Table 1. Basic of a scenario with the parameters described in the following table

Destinations	Type of transport	Percentage	Average km
Spain	Road	84	600
Europe	Road	7	1815
	Sea	1	385
Rest of the world	Road	1	450
	Sea	7	7484

Product installation process and construction (A5)

To characterize the installation scenario of the product, the different components required for the installation of 1 m^2 of this product (aluminum profiles, steel, and polyamide parts) have been accounted for, along with the provisions of UNE-EN 17160:

Packaging waste management: Table 12 Packaging waste scenarios.

Recycling (%) – Recovery (%) – Landfill (%)
Plastic: 37.2 – 31.5 – 31.3
Paper and cardboard: 84.6 – 8.3 – 7.1
Wood: 36.1 – 30.0 – 33.9

A 3% installation loss has been considered, applying the same waste management scenario described in the end-of-life stages.

2.3. Product use (B1-B7)

Use (B1)

The impact of the product at this stage is negligible, since no material is consumed and no emissions to the environment occur during its service life.

Maintenance (B2)

To characterize the cleaning scenario, the following has been applied:

– Residential use: 0.134 ml of detergent and 0.1 l of water are used to clean 1 m^2 of ceramic tiles once per year.

Repair (B3)

According to Gresmanc Internacional S.L., the reference service life of the product will be the same as that of the building in which it is installed, since, when properly installed, it is a durable product. Therefore, it does not require any repair.

Replacement (B4)

The product does not require any replacement.

Refurbishment (B5)

The product does not require any refurbishment.

Operational energy use (B6)

Ceramic products do not require energy during the use stage of the building. The associated environmental impacts are considered to be zero.

Operational water use (B7)

Ceramic products do not require water during the use stage of the building. The associated environmental impacts are considered to be zero.

2.4. End of life (C1-C4)

Deconstruction and demolition (C1)

Once its service life has ended, the product will be removed, either as part of a building refurbishment or during demolition. In the context of building demolition, the impacts attributable to the deconstruction of the product

are negligible. Therefore, the impact of stage C1 Deconstruction/Demolition has been considered negligible.

Transport to waste processing (C2)

The transport of waste materials is carried out by a EURO VI 27-ton truck, with an average distance estimated at 50 km from the demolition site to the landfill and to the recycling plant, in accordance with the PCRs.

Waste processing for reuse, recovery and/or recycling (C3)

It has been estimated that 70% of the ceramic waste material is sent for recycling, in accordance with the PCRs. The collection loads have been assumed to be negligible.

Disposal (C4)

It has been estimated that 30% of the ceramic waste material is sent to landfill, in accordance with the PCRs. 100% of the mortar waste is sent to landfill.

2.5. Reuse/recovery/recycling potential (D)

In the present module D, the existence of environmental loads and credits (i.e., avoided environmental impacts) outside the system boundaries is declared due to the reuse, recovery, or recycling of some of the system's output flows. The net impacts are reported as the result of accounting for the impacts of the recycling and energy recovery processes and subtracting the impacts of producing the primary materials or fuels displaced or substituted by the recycled ones, taking into account the difference in quality between primary and secondary material.

As indicated in the PCR and UNE-EN 15804, the loads and benefits of waste materials destined for recycling generated in stages A1–A3 have not been included in this module. Therefore, the environmental loads and benefits accounted for correspond to the recycling of waste generated during the installation stage (packaging materials) and at End of Life.

3. LIFE CYCLE ASSESSMENT

This study has been carried out using the LCA tool SimaPro 9.6.0.1 by PRé Sustainability, developed in accordance with UNE-EN ISO 14040–14044 standards, and the Ecoinvent v3.10 (2023) database.
This LCA is of the "cradle-to-grave" type, meaning that it covers the product manufacturing, construction, use, and end-of-life stages. Specific data from the GRESMANC GROUP plant (Los Yébenes, Toledo) for the year 2024 were used to inventory the manufacturing stage.
The study is based on UNE-EN 15804:2012+A2:2020 (and its corrigendum UNE-EN 15804:2012+A2:2020/AC:2021), UNE-EN 17160:2019 Product Category Rules for ceramic tiles, and follows the principles of modularity and the "polluter pays" approach.

3.1. Functional Unit

Cladding of 1 m^2 of a residential ventilated façade with AIIa stoneware ceramic tiles for a period of 50 years.

Additional comments

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3.2. Scope and modules that are declared

Table 2. Declared modules

Product stage			Construction Process Stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw materials supply	Transport	Manufacturing	Transport	Construction - Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal	Reuse, recovery, recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

X = Declared module **MND** = Undeclared module

3.3. LCA results of potential environmental impact referred to the declared unit (ACV)

Table 3. Parameters of environmental impact

Parameter	Unit	Life cycle stage														Module D
		Product stage	Construction Process Stage		Use stage							End of life stage				
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Climate change - total (GWP-total)	kg CO2 eq	2,09E+01	1,77E+00	7,50E+00	0,00E+00	2,13E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,18E-01	0,00E+00	2,73E-02	-3,20E+00
Climate change - fossil (GWP-fossil)	kg CO2 eq	2,15E+01	1,77E+00	6,38E+00	0,00E+00	1,15E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,18E-01	0,00E+00	2,73E-02	-3,13E+00
Climate change - biogenic (GWP-biogenic)	kg CO2 eq	-1,04E+00	0,00E+00	1,04E+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
Climate change - land use and changes in land use (GWP-luluc)	kg CO2 eq	7,26E-03	1,72E-04	8,28E-02	0,00E+00	9,81E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,13E-05	0,00E+00	6,88E-06	-6,51E-02
Ozone layer depletion (ODP)	kg CFC 11 eq	4,02E-07	3,69E-08	8,69E-08	0,00E+00	1,92E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,72E-09	0,00E+00	4,23E-10	-3,67E-08
Acidification (AP)	mol H+ eq	6,13E-02	7,45E-03	3,94E-02	0,00E+00	1,15E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,44E-04	0,00E+00	2,32E-04	-1,83E-02
Eutrophication of fresh water (EP-freshwater)	kg P eq	2,30E-04	3,15E-06	2,46E-04	0,00E+00	1,05E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,41E-07	0,00E+00	1,52E-07	-1,09E-04
Eutrophication of sea water (EP-marine)	kg N eq.	1,54E-02	1,94E-03	5,30E-03	0,00E+00	9,79E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,01E-04	0,00E+00	1,05E-04	-2,68E-03
Terrestrial eutrophication (EP-terrestrial)	mol N eq.	1,68E-01	2,16E-02	5,88E-02	0,00E+00	3,85E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,13E-03	0,00E+00	1,12E-03	-2,95E-02
Photochemical ozone formation (POCP)	kg NMVOC eq	9,22E-02	8,61E-03	2,32E-02	0,00E+00	5,98E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,81E-04	0,00E+00	3,40E-04	-1,15E-02
Depletion of abiotic resources - minerals and metals (ADP-minerals&metals)	kg Sb eq	6,00E-05	3,83E-07	4,74E-06	0,00E+00	3,93E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,98E-08	0,00E+00	2,14E-09	-8,32E-06
Depletion of abiotic resources - fossil fuels (ADP-fossil)	MJ, net calorific value	3,69E+02	2,47E+01	8,79E+01	0,00E+00	1,24E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,09E+00	0,00E+00	3,72E-01	-3,95E+01
Water consumption (WDP)	m3 worldwide eq. private	2,66E+00	2,52E-02	1,56E+00	0,00E+00	2,33E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,79E-03	0,00E+00	-3,62E-02	-1,37E+00
Eco-toxicity - freshwater (ETP-fw)	CTUe	2,90E+01	1,44E+00	2,13E+01	0,00E+00	3,94E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,48E-01	0,00E+00	3,88E+01	4,48E-01
Human toxicity, cancer effect (HTP-c)	CTUh	4,58E-08	2,21E-09	4,57E-08	0,00E+00	6,62E-11	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,04E-10	0,00E+00	1,20E-11	-1,38E-08
Human toxicity, non-cancer effects (HTP-nc)	CTUh	3,49E-08	2,33E-09	4,85E-08	0,00E+00	4,62E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,49E-10	0,00E+00	8,92E-10	3,90E-08
The Indicador includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This Indicador is thus equal to the GWP Indicador originally defined in EN 15804:2012+A1:2013. Can be obtained from IPCC characterization factors.																
Global Warming Potential (GHG)	kg CO2 eq	2,15E+01	1,77E+00	6,38E+00	0,00E+00	1,15E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,18E-01	0,00E+00	2,73E-02	-3,13E+00

A1 Supply of raw materials. **A2** Transport to waste processing. **A3** Manufacturing. **A4** Transport to waste processing. **A5** Installation and construction processes. **B1** Use. **B2** Maintenance. **B3** Repair. **B4** Replacement. **B5** Refurbishment. **B6** Operational energy use. **B7** Operational water use. **C1** Deconstruction and demolition. **C2** Transport to waste processing. **C3** Waste management for reuse, recovery and recycling. **C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary. **MND** Undeclared module.

Table 4. Parameters for the use of resources, waste and output material flows

Parameter	Unit	Life cycle stage														Module D
		Product stage	Construction Process Stage		Use stage							End of life stage				
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy excluding renewable primary energy resources used as feedstock	MJ, net calorific value	8,22E+00	1,00E-01	2,38E+01	0,00E+00	4,04E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,16E-02	0,00E+00	3,38E-03	-1,54E+01
Use of renewable primary energy used as raw material	MJ, net calorific value	8,10E+00	0,00E+00	-5,68E+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 use of renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	1,47E+01	1,00E-01	1,82E+01	0,00E+00	4,04E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,16E-02	0,00E+00	3,38E-03	-1,54E+01
Non-renewable primary energy use, excluding non-renewable primary energy resources used as feedstock	MJ, net calorific value	4,06E+02	2,62E+01	9,37E+01	0,00E+00	1,46E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,29E+00	0,00E+00	3,96E-01	-4,22E+01
Use of non-renewable primary energy used as raw material	MJ, net calorific value	1,58E+00	0,00E+00	-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	4,01E+02	2,62E+01	9,26E+01	0,00E+00	1,46E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,29E+00	0,00E+00	3,96E-01	-4,22E+01
Use of secondary materials	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
Use of 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
Use of 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 use of freshwater resources	m3	5,15E-02	8,97E-04	1,31E-01	0,00E+00	5,85E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,02E-04	0,00E+00	-8,36E-04	-1,01E-01
Hazardous waste removed	kg	1,76E-03	1,63E-04	1,88E-03	0,00E+00	1,34E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,08E-05	0,00E+00	2,45E-06	-1,56E-04
Non-hazardous waste eliminated	kg	2,33E-01	6,61E-03	3,94E-01	0,00E+00	1,29E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,67E-04	0,00E+00	8,45E+00	-1,49E-02
Radioactive waste disposed of	kg	9,13E-04	2,25E-06	2,37E-04	0,00E+00	1,68E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,76E-07	0,00E+00	6,00E-08	-8,71E-05
Components for reuse	kg	2,58E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	1,83E+01	0,00E+00	9,66E-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	2,01E+01	0,00E+00	0,00E+00
Materials for energy recovery (energy recovery)	kg	0,00E+00	0,00E+00	5,13E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ by energy vector	0,00E+00	0,00E+00	4,04E-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	4,04E-01
Exported electrical energy (AEE)	MJ	0,00E+00	0,00E+00	1,34E-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	1,34E-01
Exported thermal energy (EET)	MJ	0,00E+00	0,00E+00	2,70E-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	2,70E-01

A1 Supply of raw materials. **A2** Transport to waste processing. **A3** Manufacturing. **A4** Transport to waste processing. **A5** Installation and construction processes. **B1** Use. **B2** Maintenance. **B3** Repair. **B4** Replacement. **B5** Refurbishment. **B6** Operational energy use. **B7** Operational water use. **C1** Deconstruction and demolition. **C2** Transport to waste processing. **C3** Waste management for reuse, recovery and recycling. **C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary. **MND** Undeclared module.

Table 5. Kg of biogenic carbon

Carbon content (biogenic) - packaging	2,83E-01
Carbon content (biogenic) - product	0,00E+00

3.4. Recommendations of this EPD

The comparison of construction products must be made by applying the same functional unit and at the building level, that is, including the performance of the product throughout its entire life cycle. Environmental Product Declarations (EPDs) from different type III ecolabelling systems are not directly comparable, since the calculation rules may differ.
Construction product EPDs (DAPcons®) may not be comparable with other EPDs if they are not based on EN 15804+A2:2020/AC:2021.
This declaration represents the performance of the AIIa residential flooring product manufactured by Gresmanc Internacional S.L.

3.5. Cut-off rules

More than 99% of all mass and energy inputs and outputs of the system have been included, while excluding, among others, the production of machinery and industrial equipment, as indicated in section 6.3.5 of UNE-EN 17160:2019.

3.6. Additional environmental information

The included product does not release hazardous substances into indoor air, soil, or water during the use phase.
The product does not contain substances included in the Candidate List of Substances of Very High Concern (SVHC) for authorisation of the European Chemicals Agency (ECHA).

3.7. Other data

Ceramic industry waste is classified as non-hazardous waste in the European List of Waste under code EWC 10 12 08 “Ceramic, brick, tile and construction materials waste [after firing]” and EWC 17 01 07 “Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in code EWC 17 01 06.”

4. ADDITIONAL TECHNICAL INFORMATION AND SCENARIOS

4.1. Transport to the building site (A4)

Parameter	Parameter expressed per functional unit
Type and fuel consumption, type of vehicle used for transportation	EURO VI 27-t truck: 2.23E-05 kg diesel/kg·km Cargo ship – Transport, freight, sea, container ship {GLO} | market for transport, freight, sea, container ship
Distance	Average based on the distances considered for Spain, Europe, and the rest of the world: – 687 km by road – 595 km by sea
Capacity utilization (including empty return)	85% for road transport and 100% for the cargo ship.
Apparent density of transported product	approx. 3050 kg/m^3
Useful capacity factor (1, <1 or >1 for products that are packed compressed or nested)	1

4.2. Installation processes (A5)

Parameter	Parameter expressed per functional unit
Auxiliary materials for construction (specifying each material)	Aluminium: 9.61E-01 kg/m^2 Steel: 1.21E-01 kg/m^2 Polyamide: 3.43E-03 kg/m^2
Water use	-
Use of other resources	-
Quantitative description of the type of energy (regional mix) and consumption during the installation process	-
Waste of materials in the work before the treatment of waste, generated by the installation of the product (specify by type)	Packaging waste (product + packaging losses): 2.38E-01 kg Losses: 0.824 kg

Parameter	Parameter expressed per functional unit
Material outputs (specified by type) as a result of waste treatment on the building site. For example: collection for recycling, energy recovery, disposal (specified by route)	Cardboard energy recovery: 7.93E-03 kg Cardboard recycling: 8.09E-02 kg Cardboard landfill: 6.79E-03 kg Plastic energy recovery: 1.41E-02 kg Plastic recycling: 1.67E-02 kg Plastic landfill: 1.40E-02 kg Pallet energy recovery: 2.93E-02 kg Pallet recycling: 3.52E-02 kg Pallet landfill: 3.31E-02 kg Scrap recycling: 0.577 kg Scrap landfill: 0.247 kg
Direct emissions to air, soil and water	-

4.3. Reference life (B1)

Parameter	Parameter expressed per functional unit
Reference Lifetime (RSL)	50 years
Characteristics and properties of the product	Water absorption 3% < Eb ≤ 6%
Requirements (conditions of use, frequency of maintenance, repair, etc.)	Cleaning cycle: annual.

4.4. Maintenance (B2), Repair (B3), Replacement (B4), or Refurbishment (B5)

Maintenance (B2)

Parameter	Parameter expressed per functional unit
Maintenance process, for example; cleaning agent, surfactant type	Cleaning with detergent: annual
Maintenance cycle	Outdoor use: annual cleaning.
Auxiliary materials for the maintenance process (specifying each material)	0.134 ml of detergent once every two weeks and 0.1 l of water to clean 1 m^2 of ceramic floor tiles once per year.
Energy inputs for the maintenance process (quantity and type of energy vector)	-
Net consumption of fresh water during maintenance or repair	5kg
Material waste during maintenance (specifying the type)	-

Repair (B3)

Parameter	Parameter expressed per functional unit
Repair process	Not applicable
Proceso de inspección	-
Repair cycle	-
Auxiliary materials (specifying each material], for example lubricant	-
Interchange of parts during the product life cycle	-
Energy inputs during maintenance, type of energy, example: electricity, and quantity	-
Energy input during the repair, renovation, replacement process if applicable and relevant (quantity and type of energy vector)	-
Material waste during repair (specifying each material)	-
Consumo neto de agua dulce	-

Replacement (B4)

Parameter	Parameter expressed per functional unit
Energy input during substitution, for example for the use of cranes (quantity and energy vector)	Not applicable
Change of worn parts in the product life cycle (specifying each material)	-
Net freshwater consumption	-

Refurbishment (B5)

Parameter	Parameter expressed per functional unit
Rehabilitation process	Not applicable
Rehabilitation cycle	-

Parameter	Parameter expressed per functional unit
Energy input during rehabilitation, for example for the use of cranes (quantity and energy vector)	-
Input material for rehabilitation, including auxiliary materials (specifying by material)	-
Waste of material during rehabilitation (specifying each material)	-
Other scenario development assumptions	-

4.5. Reference life

Parameter	Parameter expressed per functional unit
Reference life	50 years
Declared properties of the product, finishes, etc.	Water absorption 3% < Eb ≤ 6%
Application design parameters (manufacturer's instructions)	The installation of ceramic tiles requires qualified personnel with proven experience, as well as appropriate tools and equipment.
Estimation of the quality of execution, when installed according to the manufacturer's instructions	50 years
Outdoor environment for outdoor applications. For example, weather, pollutants, UV radiation, temperature, etc.	The product is suitable for outdoor installation.
Indoor environment for indoor applications. For example, temperature, humidity, chemical exposure	The product is suitable for indoor installation.
Terms of use. For example, frequency of use, mechanical exposure, etc.	Not applicable
Maintenance. For example, the required frequency, etc.	Cleaning – Outdoor use: 0.134 ml of detergent and 0.1 l of water are used to clean 1 m^2 of ceramic tiles once per year.

4.6. Operational energy use (B6) and operational water use (B7)

Parameter	Parameter expressed per functional unit
Auxiliary materials (specified by material)	Not applicable

Parameter	Parameter expressed per functional unit
Type of energy vector. For example, electricity, natural gas, district heating	-
Equipment output power	-
Net freshwater consumption	-
Characteristic features (energy efficiency, emissions, etc.)	-
Other scenario development assumptions. For example, transportation	-

4.7. End of life (C1-C4)

	Process				
	Collection processes (specified by types)	Recovery systems (specified by type)			Elimination
	kg collected with mixed construction waste	kg for reuse	kg for recycling	kg for energy recovery	kg for final disposal
	27.67	0	20.08	0	8.67
Assumptions for scenario development	The transport of waste materials is carried out by a EURO VI 20–28 t truck. The distance to recycling and to landfill is 50 km.				

5. ADDITIONAL INFORMATION

CE Marking DDP-FAVEMANC-231103

The company holds the following certifications:

- ISO 14001:2015 Certificate. Certificate number: ES155676-1 (GRESMANC GROUP) / ES155676–001-1 (GRESMANC INTERNACIONAL, S.L.)

- ISO 9001:2015 Certificate. Certificate number: ES155677-1 (GRESMANC GROUP) / ES155677–001-1 (GRESMANC INTERNACIONAL, S.L.)

6. PCR AND VERIFICATION

This statement is based on Document

UNE-EN 17160:2019 Product category rules for ceramic tiles. Ceramic tile

Independent verification of the declaration and data, in accordance with ISO 14025 and IN UNE-EN 17160:2019

☑ External

Third party Verifier

Ferran Pérez Ibáñez
Accredited by the administrator of the DAPcons® Programme

Verification date:

03/10/2025

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