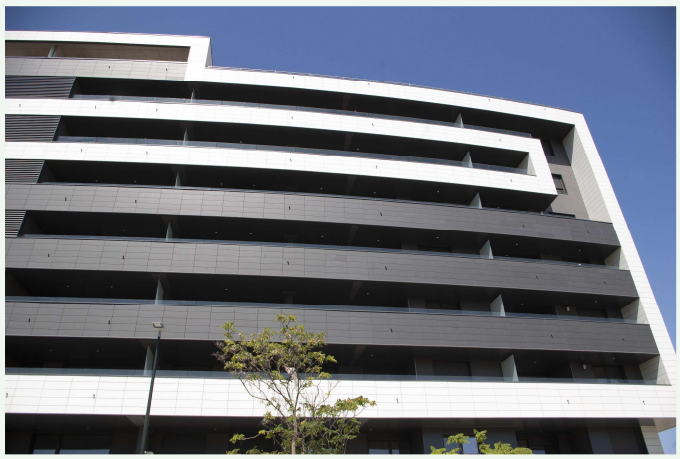
Environmental Product Declaration

In accordance with:
ISO 14025
EN 15804:2012+A2:2019 for:

EXTRUDED PORCELAIN VENTILATED FAÇADE
GA16 & GA20

(AIa classification based on EN 14411:2016) of

FAVEKER- Ventilated Façade by Gres Aragón



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1. Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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CEN standard EN 15804:2012+A2:2019 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14 Construction products, version 1.1 C-PCR-002 Ceramic tiles (EN 17160:2019), version 2019-12-20
PCR review was conducted by: The Technical Committee of the International EPD®System. See www.environdec.com/TC 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 the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification
Third party verifier: Accredited by: International EPD® System **Marcel Gómez Ferrer** **Marcel Gómez Consultoría Ambiental** (www.marcelgomez.com) Tlf 0034 630 64 35 93 Email: info@marcelgomez.com Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☒ Yes ☐ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804:2012+A2:2019. For further information about comparability, see EN 15804:2012+A2:2019 and ISO 14025.

2. Company information

FAVEKER - Fachadas Ventiladas by Gres Aragón

Polígono Industrial El Regatillo, 2

44550 Alcorisa, Teruel (España)

Contact

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faveker@gresaragon.com

https://faveker.com/

Description of the organisation

Faveker is a company belonging to Gres de Aragón that was created in 2020 for the manufacture of porcelain stoneware tiles by horizontal extrusion with two main product branches:

Faveker es una empresa perteneciente a Gres de Aragón que nació en el año 2020 para la fabricación de productos porcelánicos por extrusión horizontal con dos ramas principales de producto:

- large format ventilated façades.
- Special large-format parts such as staircases, overflow edges and ceramic gratings that are part of the product kit marketed by Gres de Aragón

Faveker provides sustainable, quality, innovative and healthy ceramic architectural solutions in partnership with customers and specifiers, creating stable employment and high added value. Faveker® products can be found in residential buildings, public facilities or hotel, commercial and leisure complexes around the world.

Certification

Faveker's plant is certified, as a production centre of GRES ARAGÓN, in quality management systems in accordance with the EN ISO 9001 Standard (Certificate ES10/7810) and in environmental management systems in accordance with the EN ISO 14001 Standard (Certificate ES10/7812).

In addition, in 2021 we obtained the Zero Waste Verification Declaration from SGS.Name and location of production sites

For the production of extruded porcelain ventilated façade included in this EPD, the following facilities are considered:

FAVEKER - Fachadas Ventiladas by Gres Aragón Polígono Industrial El Regatillo, 2 44550 Alcorisa, Teruel (España)

3. Product information

Product name

Extruded porcelain tile coverings for ventilated façades.

UN CPC code

373 Refractory products and structural nonrefractory clay products

Product identification

The 2 formats included in this EPD cover the ceramic coverings belonging to the group AIa (extruded porcelain ventilated façade) classification based on EN 14411:2016 (equivalent to ISO13006:2018). That is, its water absorption is less than 0.5% and its forming process is by extrusion.

Tile coverings of extruded porcelain for ventilated façades included in the study cover different models with different formats (GA16 and GA20). The thickness formats included in the scope of this EPD range from 18mm (31.6kg/m^2) to 20mm (33.0kg/m^2), with an average weight of 32.4kg/m^2.

Product technical features

The function of the product is to cover the exterior of buildings, providing a rain screen and thermal insulation for the building, as it allows continuous insulation to be installed between the exterior support of the load-bearing wall and the exterior cladding of the façade. For installation, clips or horizontal profiles are used to fix the ceramic pieces to the substructure that is anchored to the load-bearing support. The description and characteristics of the Faveker ® kit can be found in the European Technical Assessment ETA 16/0645.

The product complies with the requirements defined by EN 14411:2016 and ISO 13006 Annex M. A table with the main properties is presented below for both models GA16 and GA20.

Description	Test	Standards	Results	
Sizes			GA16	GA20
Width	EN-ISO 10545-2	±1 % Max. ±2 mm	Variable 250 -600 mm ± 2 mm	
Length		±1 % Max. ±2 mm	Variable 800 -1800 mm ± 1 mm	
Thickness		± 10%	18 mm ± 10%	20 mm ± 10%
Straightness of sides		± 0,5%	Length ≤ 0,2 % Width ≤ 0,4 %	
Rectangularity		± 1%	± 1,5 mm	
Lateral curvature		± 0,5%	Length ± 2 mm Width ± 0,5%	
Warpage		± 0,5%	± 2 mm	
Reaction to fire	EN 13501-1	Required	A1 No reacts	
Water absorption	EN-ISO 10545-3	E ≤ 0,5%	≤ 0,5 %	
Modulus of rupture	EN-ISO 10545-4	≥ 28 N/mm^2	≥14,5 N/mm^2	≥14,5 N/mm^2
Breaking strength	EN-ISO 10545-4	≥ 950 N	>3.200 N	>3.500 N
Resistance to surface abrasion	EN-ISO 10545-7	Minimum *128 mm^3*	<175 mm^3	
Linear thermal expansion	EN-ISO 10545-8	Not required	5,3 x 10^{-6} ºC^{-1}	

Description	Test	Standards	Results
Resistance to termal shock	EN-ISO 10545-9	Required	Guaranteed
Moisture expansion	EN-ISO 10545-10	Not required	< 0,1 mm/m
Crazing resistance	EN-ISO 10545-11	Required	Guaranteed
Frost resistance	EN-ISO 10545-12	Required	Guaranteed
Chemical resistance	EN-ISO 10545-13	Min B	HA/LA
Resistance to stains	EN-ISO 10545-14	Min Clase 3	Class 5
Antibacterial	JIS Z-2801 (ISO 22196)	Not required	Only Inkjet / Basic Blanco, Beige, marrón, Gris R> 2 Reduction >99%

4. LCA information

Unidad funcional

To cover 1 m^2 of a façade with extruded porcelain stoneware ceramic tiles (32.4kg/m^2 of weight) for 50 years.

Reference service life

The Reference Service Life (RSL) of the product is the same as that of the building where it is installed provided that it is installed correctly, as it is a durable product which does not require substitution. A Reference Service Life of 50 years has been considered.

Parameter	Result (expressed per functional unit)
Reference Service Life	Minimum 50 years
Declared product properties (on gate), coatings, etc.	Minimum values of the relevant characteristics according to Annex M of the EN 14411 standard. For more information request technical data sheets according to model.
Design parameters of the application (manufacturer's instructions), including references to good practices.	For more information request technical data sheets according to model.
Estimated quality of work, when installed according to the manufacturer's specifications	For more information request technical data sheets according to model.
Estimation of the quality of work, when installed from outside environment (for outdoor applications), e.g. weathering, pollutants, UV radiation and wind exposure, building orientation, shading, temperature, etc.	Minimum values of the relevant characteristics according to Annex M of the EN 14411 standard. For more information request technical data sheets according to model.
Indoor environment (for indoor applications), e.g. temperature, humidity, chemical exposure	Minimum values of the relevant characteristics according to Annex M of the EN 14411 standard. For more information request technical data sheets according to model.
Conditions of use, e.g.: frequency of use, mechanical exposure, etc.	For more information request technical data sheets according to model.

Parameter	Result (expressed per functional unit)
Maintenance, e.g.: required frequency, type and quality and replacement of replaceable components	For more information request technical data sheets according to model.

Representativeness, quality and selection of data

The raw data has been directly provided by Faveker and this data corresponds to one production centre of the enterprise property. For the secondary data, the most updated GaBi ts databases have been used and modelled with GaBi version 10.5.1.128. All data belong to a geographical scenario of Spain 2021.

The results presented are representative of ceramic coverings, expressed as average values weighted by the production of the ceramic coverings pertaining AIa group.

Time-related coverage

The manufacturer's specific data represented a full year and were less than 5 years old. Specifically, the most recent stable data of the analysed product manufacturing plant were used (data relating to the year 2021).

Geographic coverage

Wherever possible, data were used relating to the country in which the process at issue was developed or, when this was not possible, regional or global data were applied.

Technological coverage

The data used reflected the technological reality of the system analysed.

Database(s) and LCA software used

- GaBi database: Database for Life Cycle Engineering. SpheraSolutions Upgrade 2021.2 Edition (February 21, 2021 - SP 40).
- GaBi v 10 software-system. SpheraSolutions. Compilation 10.5.1.128
- Ecoinvent v 3.7.1

Description of system boundaries

Cradle to grave and module D (A + B + C + D)

Allocation and cut-off rules

In this cradle-to-grave LCA study, a cut-off rule of 1% for the energy use (renewable and non -renewable) and 1% of total mass in those unitary processes, whose data is insufficient, have been applied. In total, more than 95% of all mass and energy inputs and outputs of the system have been included, excluding the not available nor quantified data. The principle of modularity in the allocation of environmental loads, i.e. that they apply where they occur, and the "polluter pays" principle have been followed. In addition, a physical allocation has been made on the basis of mass.

The excluded data are the following:

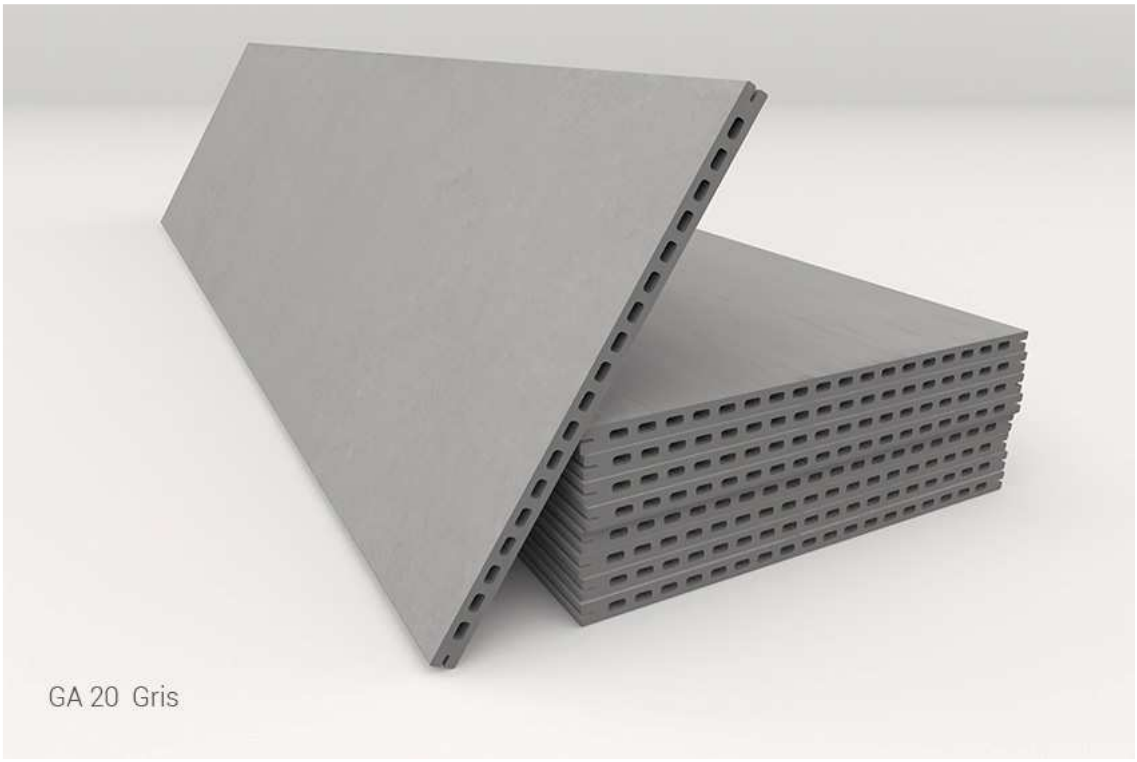
- Diffuse particle emissions to the atmosphere during the transportation and storage of powdery nature raw materials.
- Non-regulated channel emissions generated during combustion stages (spray drying, piece drying and firing).

- The recycling and reutilization of the residues generated during the life cycle of the ceramic coverings according to PCR. However, the recycling process of the residues and the benefits obtained from this recycled will be quantified in module D.
- Waste management and transport to landfill have not been included in glaze manufacturing.
- Machinery and industrial equipment production.

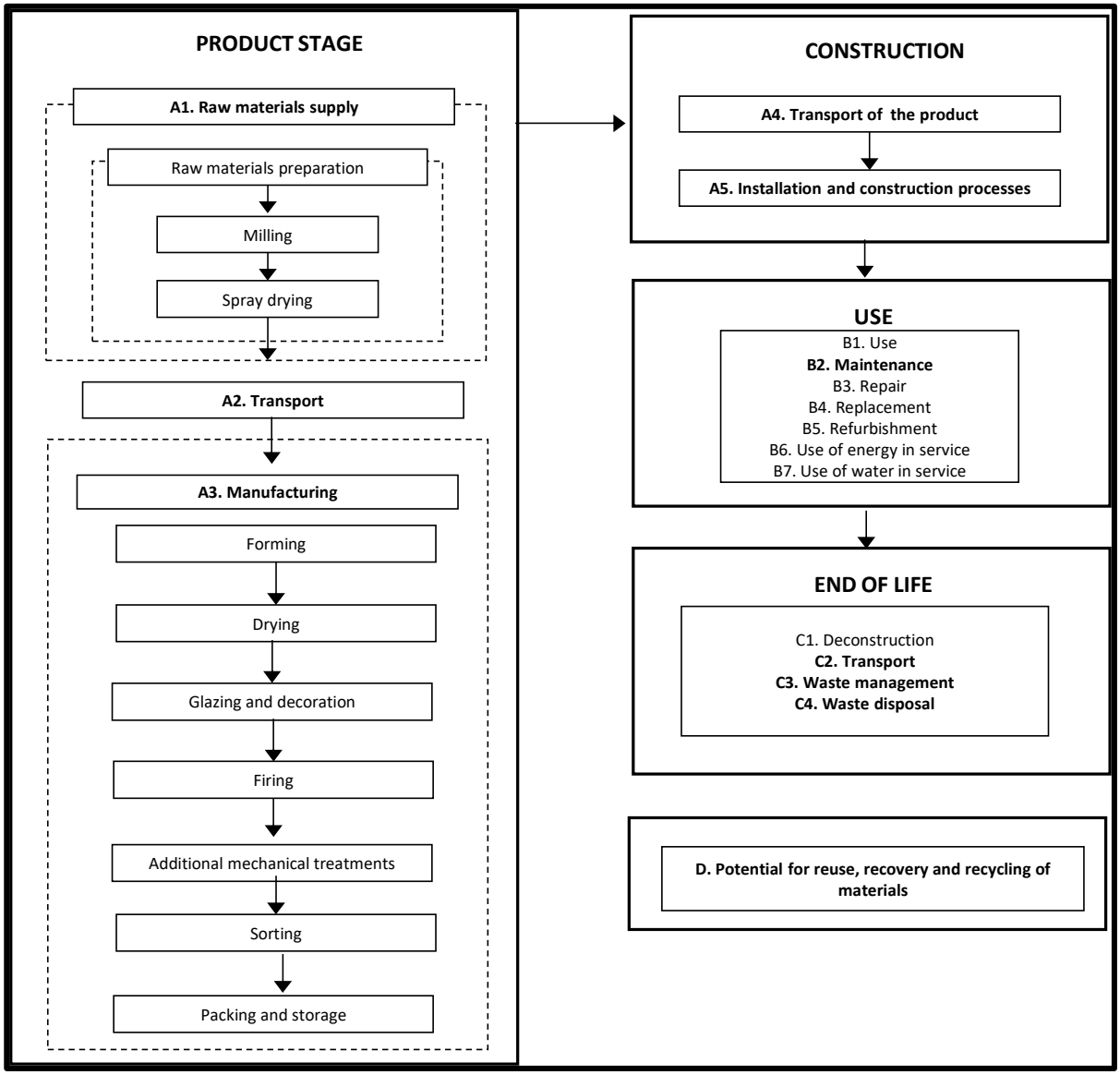
Electric mix

Renewables: 23.9%; Nuclear: 31.7%; Fossil: 30.3%.

Climate impact of electricity production: 0.062kg CO_2 eq./MJ



System diagram



Environmental impact methodologies

The selected impact categories and flow indicators, the applied impact assessment methods and the characterisation factors used were those recommended by standard EN 15804:2012+A2:2019 included in the Environmental Footprint method. The applied characterisation factors were those available at the following Web link: https://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml.

A1-A3 Product Stage

Raw materials supply and transport (A1 y A2)

The raw materials required for the ceramic tiles manufacturing are classified as: plastic raw materials and non-plastic or degreasing raw materials. Specifically, the raw materials included in the composition of the support are clays, feldspars and sands, as well as waste from the factory itself and external factories, which can be sludge or ceramic pieces generated before and after the firing stage, introduced in the grinding stage of the raw materials.

Regarding glaze raw materials, the most used in the formulation are the following ones: quartz, kaolin, borax, alkaline feldspars, nepheline, calcium carbonate, dolomite, zircon, wollastonite, calcined alumina and ceramic frits.

The ceramic frits are insoluble glasses, prepared in an external company by complete fusion of their original raw materials, called “frits”. It is estimated that around 32% of the raw materials used in the glaze applied on extruded porcelain ventilated façade tiles are submitted to fritting process.

The raw materials used have different origins according to their nature and properties. The raw materials coming from outside Spain are transported by freighter to the port of Castelló, and from there by truck to the spray-dried granule plant (external supplier). For sea transport the freighter selected is a transoceanic one, whose distance traversed depends on the origin of each case, whereas for road transport a 27t truck which meets the Euro6 standard has been chosen. All raw materials are transported in bulk, that is, they do not require packaging material, except the decoration materials which are transported in a 17.3t payload truck, from the frits and glaze factory to Faveker plant.

The preparation of raw materials for the support of Faveker's ceramic tiles is carried out in the company's own forming plant. In this process, the proportion of raw materials is defined and their origin is adjusted to the characteristics of the production process and the final performance required.

Part of these raw materials is spray-dried powder. The spray-dried powder is obtained by wet milling of the raw materials and subsequent spray drying. This spray-dried powder is transported to the Faveker plant by 27t truck.

Manufacturing (A3)

The grinding of raw materials at Faveker is carried out in a dry process, with different types of mills depending on the nature of the raw materials and materials used in the composition.

More than 45% of the raw materials used in the manufacture of porcelain façades come from the factory's own wastes. 26% fired scrap and 20 % unfired scrap.

Prior to the extrusion forming process, the already ground materials are dosed in the right proportions for the composition. Moreover, some water is added to form a kind of paste to facilitate extrusion forming. This process is called kneading.

The extrusion process consists of passing a quantity of paste, in a plastic state, through a matrix, by means of the thrust of a propulsion system. Once the extrusion has been carried out, the material obtained is cut to obtain the size of the required part.

The formed parts are placed in a continuous dryer to reduce their humidity, thus doubling or tripling their mechanical resistance, which allows them to be processed further.

All pieces just out of the dryer are coated with a thin layer or layers of engobe and glaze and applied to the support using spraying techniques and (to a lesser extent) grits. In addition, the product is decorated using inkjet inks. This treatment is carried out to give the surface of the fired product a series of technical and aesthetic properties, such as impermeability, ease of cleaning, gloss, colour, surface texture, chemical and mechanical resistance, well as to imitate natural materials such as wood, marble or natural stone.

Firing is the most important stage of the ceramic covering manufacturing process, as it is when the pieces, previously shaped, experience a fundamental modification of their features, resulting in a tough, water and chemical resistant product, as well as resistant to frost. The ceramic pieces are subject to a single firing single-deck roller kiln.

Once the piece is fired, in some cases mechanical treatments such as cutting or rectified etc. are applied to provide new effects. The cutting or rectified phase is necessary to transform the big pieces into the format requested by customers, thus improving the dimensional quality of the parts.

After passing the quality control processes, the sorted pieces are packed in a primary cardboard container and packed on wooden pallets, covered with LDPE film and strapped to prevent load movement.

A4-A5 Construction Process Stage

A4 Transport

Product distribution is as follows: 53% in Spain, 37% in Europe and 11% to the rest of the world.

For road transport, a 27t truck classified Euro 6 has been considered (national transport and European, average distance of 300km and 1390km, respectively). For transcontinental transport, an average transoceanic freighter has been estimated (transport to the rest of the world, 6520km), as indicated in EN 17160.

Parameter	Result (expressed per functional unit)
Fuel type and consumption	According to the destinations in the distribution as described above: 0.3656 l diesel (truck Euro 6, 27 t) 0.0139 l fueloil (freighter)
Distance	300 km national distribution: 53% 1390 km European distribution: 37% 6520 km rest of the world distribution: 11%
Capacity utilisation (including no-load return)	85% in truck 100% freighter
Bulk density of transported products	≈1800kg/m^3

A5 Product installation and construction process

Once the product is unpacked, it is installed. According to the company recommends the use of various auxiliary materials for the installation of the product on the façade.

The waste derived from the packaging of the pieces is managed separately according to the geographical location of the installation site. Otherwise, 3% of product losses have been considered at the installation stage.

Parameter	Result (expressed per functional unit)
Material 1: **alumunium**	1.0kg
Material 2: **Stainless steel**	1.4E-01
Material 3: **EPDM**	1.8E-01
Water use	Not applicable
Use of other resources	Not applicable
Quantitative description of the type of energy (regional mix) and consumption during the installation process	Not applicable
Waste of materials at the construction site before processing of waste generated at the product installation (specified by type)	Product losses: 970g Packaging wastes: - Cardboard: 138 g - Plastic: 35g - Wood: 963 g

Parameter	Result (expressed per functional unit)
Output of materials (specified by type) as a result of waste treatment waste at the construction site, e.g. from waste collected for recycling, energy recovery, disposal (specified by route)	Product losses for recycling: 679g Product losses for final deposition: 291g Cardboard for incinerating: 1g Cardboard for recycling: 138g Cardboard for final deposition: 0 g Plastic for incinerating: 4g Plastic for recycling: 27g Plastic for final deposition:4g Wood for incinerating: 244g Wood for recycling: 698g Wood for final deposition: 21 g
Direct emissions to ambient air, soil and water	Not applicable

B1-B7 Use Stage

B1 Use

Once installed, the tiles do not require any energy input for their use, nor do they require maintenance after installation, except for normal cleaning operations. For this reason, of all the aforementioned modules, only the environmental loads attributable to product maintenance (module B2) are considered.

B2 Maintenance

Cleaning is done with a damp cloth and, if the surface is dirty or greasy, cleaning agents such as detergents or bleaches can be used. For the calculation of the amount of detergent, understood as surfactant, it has been estimated that the cleaners on the market contain 5% of this type of compound in their formulation.

For maintenance, according to the information provided by the company, a scenario of exterior use on façades has been considered, with a cleaning frequency of once a year with water and detergent during the 50-year life of the product. The results are presented in the following table.

Parameter	Result (expressed per functional unit)
Maintenance process	Cleaning of ventilated ceramic façades
Maintenance cycle	Washing once a year with water and detergent.
Auxiliary materials for maintenance (e.g. cleaning products) (specify each material)	Detergent: 1.34E-04 kg/m^2
Material wastage during maintenance (specify type)	Not applicable
Net tap water consumption	0.1 l/m^2
Energy input during maintenance (e.g. vacuum cleaning), type of energy carrier (e.g. electricity) and amount, if applicable and relevant	Not applicable

B3-B4-B5 – Repair, replacement and refurbishment

The tiles do not require repair, replacement or renovation

B6-B7 – Operational energy use and Operational water use

These modules are not relevant for ceramic tiles.

C1-C4 End of Life Stage

C1 Deconstruction and demolition

At the end of its service life, the product will be removed, either as part of a building renovation or during demolition. In the context of the demolition of a building, the impacts attributable to the removal of the product are negligible.

C2 Transport

The product waste is transported in a heavy-duty truck (27 t) that complies with Euro 6 standards to be managed either by deposition in inert landfills or recycling. An average distance of 50km from the building site to the destination is considered. Also included is the return of the trucks (100% empty return).

C3 Waste management for reuse, recovery and recycling

It has been estimated that 70% of tiles are recycled and/or reused, as indicated in the PCR.

C4 Final disposal

It is estimated that 30% of the product is sent to controlled landfill after the end of its service life.

Parameter	Result (expressed per functional unit)
Collection process, specified by type	33.7 kg/m^2
Recovery system, specified by type	24.0 kg recycled as filler material
Disposal, specified by type	9.7 kg to controlled landfill
Assumptions for scenario development (e.g.: transport)	The product waste is transported in a heavy-duty truck (27 t) that complies with Euro 6 standards to be managed either by deposition in inert landfills or recycling. An average distance of 50km from the installation site to the final destination is considered. The return trip of the trucks is also included (100% empty return).

Module D Potential environmental benefits and burdens of reuse, recovery and recycling activities

The environmental burdens and benefits of obtaining secondary material from waste generated at the manufacturing stage (waste such as cardboard, plastic and wood), at the installation stage (product losses, tile packaging waste: cardboard, plastic and wood) and at the end of life of the product have been considered.

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

	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	Benefits and burdens beyond the system
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
Geography	ES			EU													EU
Specific data used	>90%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-1%/+1%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-

5. Content information

Product components		Weight (%)	Post-consumer material, weight-%	Renewable material, weight-%
CERAMIC'S BODY	Clay, feldspar, unfired scrap, fired scrap…	98%	0%	0%
GLAZE	Borates, feldspar, clay, etc	2%		0%
INKS				
	TOTAL	**100%**	**0%**	**0%**

The substances contained in the product listed in the "Candidate List of Substances of Very High Concern (SVHC) for authorisation" do not exceed 0.1% by weight of the product.

6. Biogenic carbon content

As required by standard EN 15804:2012+A2:2019, the carbon content of both the product and its packaging was separately declared. In the case of the product at issue, ceramic tiles, the tile components were inorganic, so that the biogenic carbon calculation did not apply.

In regard to the packaging used for tile distribution, its mass was less than 5% of the total product mass, so that the declaration of packaging biogenic carbon content was omitted. The mass percentage of the packaging used was declared for each type of studied tile in the following table.

Packaging materials	Weight, kg/m^2	Weight-% (versus the product)
Cardboard	1.4E-01	0.4%
Plastic	3.6E-02	0.1%
Wood	9.6E-01	3.0%

7. Environmental Information

The results refer to 1 m^2 of a surface (flooring) of a residential area for 50 years with extruded porcelain tile coverings for ventilated façades. (32.4 kg/m^2 average weight). The results of the Life Cycle Impact Assessment are relative expressions and do not predict final impacts by category, threshold exceedances, safety margins or risks.

Potential environmental impact – mandatory indicators according to EN 15804:2012+A2:2019

Results per functional unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq,	19,2	1,2	13,3	0	1,2E-02	0	0	0	0	0	0	1,3E-01	0	1,3E-01	-2,7
GWP-fossil	kg CO_2 eq,	19,5	1,2	13,4	0	1,6E-02	0	0	0	0	0	0	1,4E-01	0	1,3E-01	-2,9
GWP-biogenic	kg CO_2 eq,	1,6E-01	-1,5E-03	5,8E-02	0	9,3E-05	0	0	0	0	0	0	-1,9E-04	0	1,4E-03	6,7E-02
GWP-luluc	kg CO_2 eq,	4,9E-03	6,5E-03	5,3E-03	0	5,1E-07	0	0	0	0	0	0	7,5E-04	0	5,7E-04	-7,2E-03
GWP-total	kg CO_2 eq,	19,6	1,2E+00	13,5	0	1,6E-02	0	0	0	0	0	0	1,4E-01	0	1,3E-01	-2,8
ODP	kg CFC 11 eq,	7,3E-08	7,3E-14	2,2E-09	0	6,0E-09	0	0	0	0	0	0	8,1E-15	0	7,5E-14	-8,0E-09
AP	mol H^+ eq,	8,2E-02	3,5E-03	6,5E-02	0	1,4E-04	0	0	0	0	0	0	1,1E-04	0	9,7E-04	-4,0E-03
EP-freshwater	kg P^- eq,	1,9E-04	3,5E-06	1,5E-05	0	2,9E-07	0	0	0	0	0	0	4,0E-07	0	2,8E-06	-5,5E-06
EP-freshwater	kg PO_4^{3-} eq,	5,7E-04	1,1E-05	4,5E-05	0	8,9E-07	0	0	0	0	0	0	1,2E-06	0	8,5E-06	-1,7E-05

[1] The indicator includes all greenhouse gases included in GWP-total, excluding biogenic carbon dioxide and product biogenic carbon emissions. This indicator is equivalent to the GWP indicator defined in EN 15804:2012+A1:2013.

Results per functional unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
EP-marine	kg N eq,	9,3E-03	9,4E-04	8,5E-03	0	1,5E-05	0	0	0	0	0	0	3,0E-05	0	2,7E-04	-1,3E-03
EP-terrestrial	mol N eq,	1,0E-01	1,1E-02	9,3E-02	0	5,9E-04	0	0	0	0	0	0	3,7E-04	0	2,8E-03	-1,4E-02
POCP	kg NMVOC eq,	3,1E-02	2,8E-03	2,6E-02	0	1,1E-04	0	0	0	0	0	0	1,0E-04	0	7,8E-04	-3,8E-03
ADP-minerals&metals[2]	kg Sb eq,	5,9E-05	1,0E-07	4,8E-05	0	5,0E-10	0	0	0	0	0	0	1,1E-08	0	1,4E-08	-1,9E-07
ADP-fossil[2]	MJ	350,0	16,3	172,0	0	7,8E-02	0	0	0	0	0	0	1,8	0	1,8	-49,6
WDP	m^3, global private equivalent	5,1	1,1E-02	2,5E+00	0	4,7E-01	0	0	0	0	0	0	1,2E-03	0	1,0E-02	-8,3E-01
Acronyms	Global Warming Potential, UNE EN15804:2012+A1:2014 (GWP-GHG); Total Global Warming Potential (GWP-total); 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															

[2] *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.*

Use of resources

Results per functional unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	89,5	8,9E-01	71,9	0	3,2E-01	0	0	0	0	0	0	1,0E-01	0	2,0E-01	-18,6
PERM	MJ	20,4	0	6,1E-01	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	109,9	8,9E-01	72,5	0	3,2E-01	0	0	0	0	0	0	1,0E-01	0	2,0E-01	-18,6
PENRE	MJ	350,0	16,4	172,0	0	7,8E-02	0	0	0	0	0	0	1,8	0	1,8	-49,7
PENRM	MJ,	1,5	0	4,5E-02	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	351,5	16,4	172,0	0	7,8E-02	0	0	0	0	0	0	1,8	0	1,8	-49,7
SM	kg	13,1	0	3,9E-01	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	8,3E-02	1,0E-03	1,8E-01	0	6,0E-03	0	0	0	0	0	0	1,2E-04	0	3,3E-04	-1,2E-02
Acronyms	**PERE** = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; **PERM** = Use of renewable primary energy resources used as raw materials; **PERT** = Total use of renewable primary energy resources; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; **PENRM** = Use of non-renewable primary energy resources used as raw materials; **PENRT** = Total use of non-renewable primary energy re-sources; **SM** = Use of secondary material; **RSF** = Use of renewable secondary fuels; **NRS**F = Use of non-renewable secondary fuels; **FW** = Use of net fresh water															

Waste production and output flows

Waste production

Results per functional unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	1,9E-02	7,8E-11	6,3E-04	0	6,7E-13	0	0	0	0	0	0	8,7E-12	0	2,8E-08	-5,6E-09
Non-hazardous waste disposed	kg	2,5E-01	2,3E-03	3,6	0	1,7E-03	0	0	0	0	0	0	2,6E-04	0	8,1	-1,2E-02
Radioactive waste disposed	kg	1,8E-02	2,0E-05	1,0E-02	0	8,2E-07	0	0	0	0	0	0	2,2E-06	0	2,4E-05	4,1E-04

Output flows

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	2,8E-01	0	1,5	0	0	0	0	0	0	0	0	0	24,0	0	0
Materials for energy recovery	kg	0	0	0	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

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