GlobalEPD

A VERIFIED ENVIRONMENTAL DECLARATION

AENOR

Environmental Product Declaration

EN ISO 14025:2010

EN 15804:2012+A2:2019

EN 15804:2012+A2:2019/AC:2021

EN 17160:2019

VIVES AZULEJOS Y GRES S.A.

Ceramic tiles. Earthenware (BIII)

Date of first issue:	2026-03-23
Expiration date:	2031-03-22

The declared validity is subject to registration and publication at www.aenor.com

Registration code: GlobalEPD EN 17160 - 082

VIVES

The owner of this Declaration is responsible for its content, as well as for keeping the supporting documentation that justifies the data and statements included during the period of validity.

Owner of the Declaration

VIVES AZULEJOS Y GRES S.A.

Ctra. Castellón, km. 23
12110 L'Alcora, Castellón, Spain

Tel. (+34) 964 36 07 25
Mail contacto @vivesceramica.com
Web https://www.vivesceramica.com/

LCA Study

Instituto de Tecnología Cerámica – (ITC-AICE)
Campus Universitario Riu Sec
Av. Vicent Sos Baynat s/n
12006, Castelló, Spain

Tel. (+34) 964 34 24 24
Mail sostenibilidad@itc.uji.es
Web www.itc.uji.es

Operator of the Global EPD Programme EPD

AENOR CONFÍA, S.A.U.
C/ Génova 6
28004 – Madrid
Spain

Tel. (+34) 902 102 201
Mail aenordap@aenor.com
Web www.aenor.com

AENOR is a founding member of ECO Platform, the European Association of Environmental Product Declaration Verification Programmes.

The Standards EN 17160:2019 PCR for Ceramic tiles and EN 15804:2012+A2:2019 serve as the basis for the PCR
Independent verification of the declaration and data, in accordance with the Standard EN ISO 14025:2010 ☐ Internal ☒ External
Verification body AENOR Product certification organization accredited by ENAC with accreditation No.1/C-PR468

1. General information

1.1. Description of the organisation

VIVES Azulejos y Gres is a company involved in the manufacture of ceramic products such as floor and wall tiles, porcelain tiles and special pieces, with the aim of offering an innovative and efficient product. Our evolution is based on a constant concern to advance and satisfy the most demanding needs of the market. Vives represents everything in ceramics with great efforts in R&D that allow us to offer quality ceramic products with the latest trends in design, capable of delighting architectural design and creating elegant, avant-garde and select environments.

A constant effort makes VIVES an innovative company in continuous renovation and adaptation to new technologies, with the most advanced production systems and a committed environmental policy through EcoVives, all backed by more than fifty years of experience.

1.2. Scope of the declaration

This Environmental Product Declaration includes environmental information on a group of products manufactured at two Vives production centres in a geographical and technological environment in Spain in 2024.

The location of the production centres is shown below:

Ctra. Castellón, km. 23 12110 L'Alcora, Castellón, Spain
Ctra. Castellón, 67, 12110 L'Alcora, Castellón, Spain

The results shown the environmental performance of the earthenware tiles, as average weighted by production. Moreover, the environmental data of the tiles with the lowest and highest impact, thus narrowing down the results obtained in the LCA are also declared. The scope of this Environmental Product Declaration (hereinafter EPD) is from cradle to grave.

1.3. Life cycle and compliance

This EPD has been developed and verified in accordance with EN ISO 14025:2010 and EN 15804:2012+A2:2019 the following Category Rules:

INFORMATION ABOUT PRODUCT CATEGORY RULES	
Descriptive title	Product Category Rules for Ceramic Tiles
Registration code and version	EN 17160:2019
Publication date	2019
Compliance	EN 15804:2012+A2:2019
Programme administrator	AENOR

This Environmental Statement includes the following life cycle stages:

Limits of the system.

Information modules considered

Product Stage	A1	Raw materials supply	X
	A2	Transport	X
	A3	Manufacturing	X
Construction	A4	Transport of the product	X
	A5	Installation and construction processes	X
Use	B1	Use	X
	B2	Maintenance	X
	B3	Repair	X
	B4	Replacement	X
	B5	Refurbishment	X
	B6	Use of energy in service	X
	B7	Use of water in service	X
End of Life	C1	Deconstruction	X
	C2	Transport	X
	C3	Waste management	X
	C4	Waste disposal	X
	D	Potential for reuse, recovery and recycling of materials	X

X = Module included in the LCA

This EPD may not be comparable with those developed in other Programmes or according to different reference documents, in particular it may not be comparable with EPDs not developed according to EN 15804+A2.

Similarly, this EPD may not be comparable if the origin of the data is different (e.g. databases), not all relevant information modules are included, or they are not based on the same scenarios.

The comparison of construction products should be done on the same function, applying the same functional unit and at the level of the building (or architectural or engineering work), i.e. including the behaviour of the product throughout its life cycle, as well as the specifications of section 6.7.2 of the EN ISO 14025:2010 standard.

2. Product information

2.1. Product identification

The ceramic tiles included in this study belong to group BIII (Earthenware), a classification based on standard EN 14411: 2016 (equivalent to standard ISO 13006:2018), meaning that they have a water absorption rate of less than 10% and are formed by pressing. Their common name is earthenware.

The earthenware tiles included in this study include 14 commercial formats, all of them are glazed, with thicknesses of 9.2 mm and an average fired weight of 15.64 kg/m^2 and an average unfired weight of 17.66 kg/m^2.

In the annexes, the results of the formats included in the scope of this EPD with the minimum and maximum environmental impact can be found, corresponding to the formats: 10x20 cm with a thickness of 7.4 mm and minimum weight of 12.93 kg/m^2, and 20x50 cm with a thickness of 11.0 mm and 19.11 kg/m^2 of final weight of the product.

The CPC code of the product is 37370.

2.2. Product technical features

This EPD covers residential interior walls as a study scenario. However, the versatility of these ceramic tiles allows them to be installed in other locations such as roofs, façades, exterior paving and other types of buildings with varying levels of foot traffic, such as hospitals, schools, offices and shopping centres.

The manufacturer declares the following information on the technical specifications of the product:

Product technical features

Group BIa unrectified

Description	Standard	Requirements
Dimensions and surface quality	EN-ISO 10545-2	Complies with the standard
Water absorption	EN-ISO 10545-3	E>10%
Modulus of rupture	EN-ISO 10545-4	e=7.5 mm >15 e <7.5 mm >12
Modulus of rupture	EN-ISO 10545-4	e >=7.5 mm >600 e <7.5 mm >200
Resistance to surface abrasion	EN-ISO 10545-7	-
Slip resistance	UNE 41901:2017 EX / UNE 41902:2017 EX DIN 51130 / DIN 51097 BS 7976-2 :2002 / DCOF	-
Linear thermal expansion	EN-ISO 10545-8	7 x10^{-6} ºC^{-1}
Resistance to thermal shock	EN-ISO 10545-9	Complies with the standard
Moisture expansion	EN-ISO 10545-10	<0.6%
Crazing resistance	EN-ISO 10545-11	Complies with the standard
Frost resistance	EN-ISO 10545-12	-
Chemical resistance	EN-ISO 10545-13	A A Minimum LB
Stain resistance	EN-ISO 10545-14	Class 4

2.3. Product composition

The composition declared by the manufacturer is as follows:

Product composition

Substance/Component	Content
Support (clays, carbonates, sands, and pre-consumer recycled material)	96%
Decoration raw materials (grits, glazes and inks)	4%

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

3. LCA information

3.1. Life cycle assessment

The LCA has been carried out with the support of the LCA for Experts software (Sphera-GaBi) [7] and with the last database version 2024.2. (SP40.0) [8]) (SpheraSolutions). The characterisation factors used are those included in the EN 15804:2012+A2:2019 standard.

3.2. Functional unit

The functional unit considered is *"Covering and decoration of 1 m^2 of interior walls with ceramic tiles from group BIII (various formats of 9.2 mm and 15.64 Kg/m^2 average fired weight) for 50 years".*

3.3. Reference service life (RSL)

The reference service life 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 long-lasting product that does not require replacement. A service life of 50 years has been considered.

Reference service life

Parameter	Unit (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 L of the EN 14411. 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: https://www.vivesceramica.com/productos/soluciones-tecnicas/recomendaciones/
Estimated quality of work, when installed according to the manufacturer's specifications	For more information, request technical data sheets according to model.
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 L of the EN 14411. 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 L of the EN 14411. 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.
Maintenance, for example the required frequency, type and quality, and replacement of replaceable components	For more information: https://www.vivesceramica.com/productos/soluciones-tecnicas/recomendaciones/

3.4. Allocation rules

In accordance with the standards and PCR, the principle of causality has been applied when assigning inputs and outputs in processes with multiple inputs and/or outputs. Therefore, an attempt has been made to establish the physical relationship between the inputs and outputs of the system and its different products.

In general, the inputs and outputs assigned to the declared unit have been weighted averages based on the classified saleable production, total production or specific weight of the tiles before and after firing, according to the criteria for each stage of the process.

3.5. Cutt of rule and exclusions

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 excluded data are the following:

- Diffuse emissions of particles into the atmosphere.
- Channelled atmospheric emissions, not regulated by law.
- Consumables used in the maintenance of batteries, water softeners and inkjet machines.
- Glue and wax used in the packaging process, as this accounts for 0.041% of the total weight of the product and packaging.
- La Long-term emissions (>100 years).
- The processes of recycling and reusing waste generated throughout the life cycle of ceramic coverings that will form part of another system, based on the PCR.
- The production of goods, machinery, infrastructure, and industrial equipment that can be replaced in less than a year.
- Mortar losses in stage A5.

3.6. Representativeness, quality and selection data

The primary data have been provided directly by Vives company, with two production centres located in L´Alcora (Castellón). Secondary data was obtained from the most up-to-date Sphera-GaBi databases [8] and modelled using LCA for Experts (Sphera-GaBi) [7]. All data refers to a geographical scenario for Spain in 2024.

The results presented are representative of ceramic tiles, expressed as an average weighted by the production of the ceramic tiles belonging to the BIII group range, limiting this average by the products with the minimum and maximum environmental impact.

The global warming potential (GWP-total) of the different technologies that make up the electricity mix used is 0.3777 kgCO2 eq/kWh. In the case of natural gas consumption, emissions are 0.0747 kgCO2 eq/MJ.

Information on data quality	
Data collection	01/01/2024 – 31/12/2024
Sites used	Two (Vives and Ferraes) manufacturing plants located in L'Alcora (Castellón)
Geography	Vives produces 100% of its products in L'Alcora. The product is sold in Spain, Europe and the rest of the world. EPD is modelled for use and disposal in Spain, Europe and the rest of the world. BIII product sales are 39.19% in Spain, 35.69% in Europe and 25.11% in the rest of the world.
Technology	The product consists of a base and decorative material. The technologies involved are granule spray drying, tile firing, mechanical treatments and the manufacture of decorative materials.
Average	Weighted average production covering Vives Cerámica's production: Vives Plant BIII 20% Ferraes Plant BIII 21%
ICV/ACV database	Sphera databases. 2024.2 Edition. January 2024.

Information on data quality	
EPD used	Frits - Spanish sector EPD. The International EPD® System. Registration number: EPD-IES-0015440. Grits - Spanish sector EPD. The International EPD® System. Registration number: EPD-IES-0015441. Dry-basis glazes - Spanish sector EPD. The International EPD® System. Registration number: EPD-IES-0015443. Liquid-basis glazes Spanish sector EPD. The International EPD® System. Registration number: EPD-IES-0015444. Micronized glazes - Spanish sector EPD. The International EPD® System. Registration number: EPD-IES-0015445. Inks of Digital inkjet - Spanish sector EPD. The International EPD® System. Registration number: EPD-IES-0015447. ASCER 2024. Sectoral life cycle assessment of ceramic tiles. Valid until September 2029
Data quality scheme	EN 15804:2012+A2:2019, Annex E, table E.1
Use of regular data with more than 30% basic impact	Regular data with more than a 30% impact is not used
Use of poor relevant data	Poor data is not used
Use of very poor relevant data	Very poor data is not used

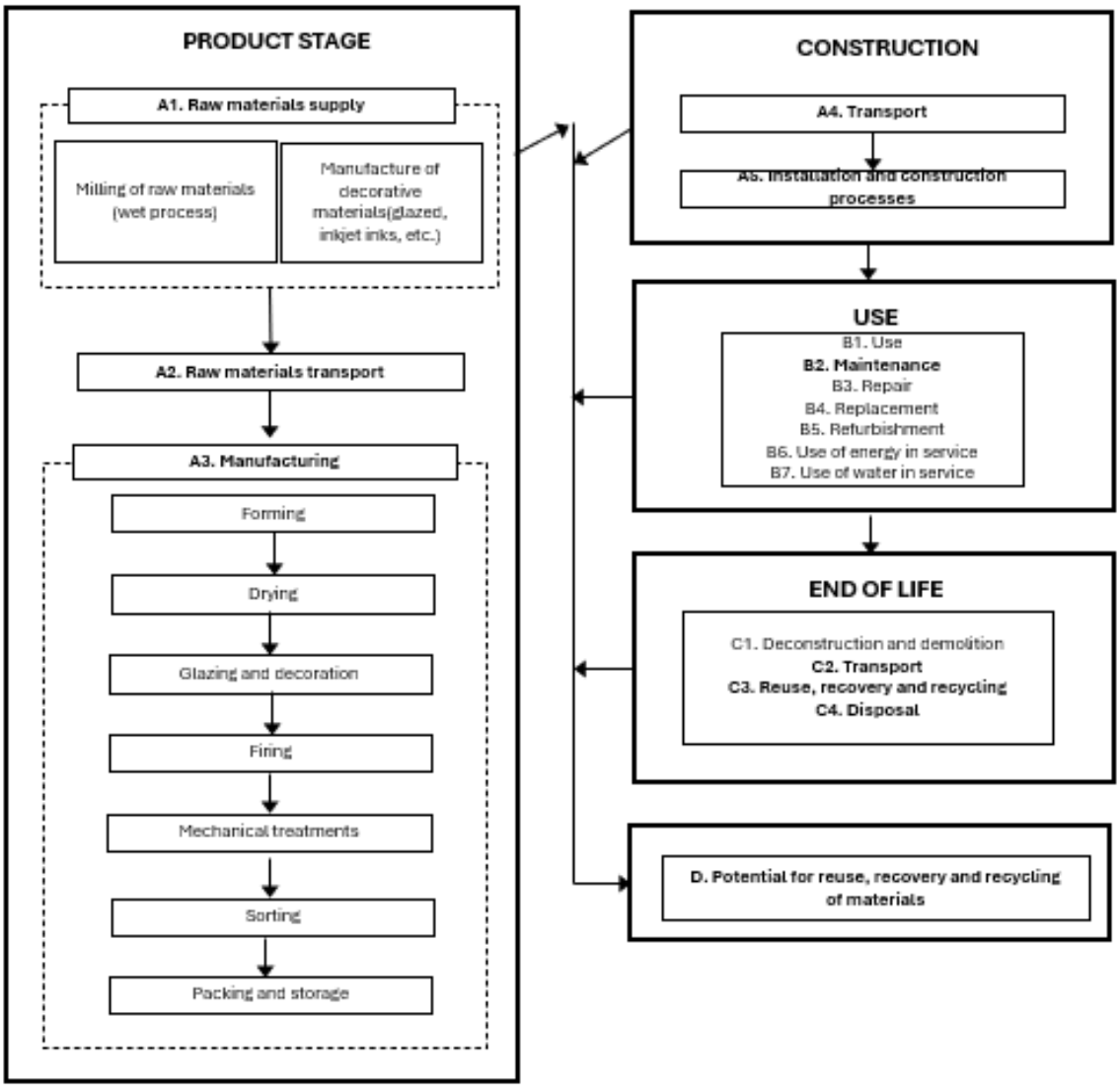
3.7. Other calculation rules and assumptions

The 14 ceramic tile references have different weights and environmental impacts. The following table shows the deviations between the formats with the highest and lowest environmental impact and the average, in relation to the product stage (A1-A3). Annex I and Annex II show the environmental impact results, expressed in absolute values and for all modules of the life cycle of the format that has the lowest and highest environmental impact, respectively.

Impact Indicator	Relative variation from the average
GWP-total	-32%/+6%
AP	-55%/-29%
POCP	-48%/-24%

4. System limits, scenarios and additional technical information

All life cycle modules relevant to ceramic tiles according to the PCRs have been included:



4.1. Pre-manufacturing processes (upstream)

Raw materials (A1) and Transport (A2)

Ceramic tiles are composed of a ceramic support and a decorative layer.

The raw materials included in the composition of the substrate are mainly clays, feldspars, sands, and ceramic waste generated during manufacture.

Ceramic tiles are composed of a ceramic support and a decorative layer.

The raw materials for decoration (grits, pigments, glazes, engobes and inks) are produced in specialised plants.

The raw materials used have different origins, according to their nature and properties; they are transported by road or by ship in bulk, depending on the distance and location of the extraction point.

4.2. Manufacturing of the product

Manufacturing (A3)

At the granule manufacturing plant of Vives y Ferraes' supplier, the raw materials are prepared by wet grinding and spray drying, using a high-performance cogeneration system.

At Vives y Ferraes, this spray-dried granule is shaped by unidirectional dry pressing and placed in a continuous dryer. The pieces fresh out of the dryer are coated with one or more thin layers of slip and glaze, sometimes with pigments, and then decorated, mainly by ink injection and the application of granules.

The pieces are then fired in single-layer roller kilns, resulting in a hard material that is resistant to water and chemicals.

After passing quality control processes, some of the sorted parts undergo mechanical treatment, after which they are sorted again, boxed and packaged. Others are stored boxed and packaged, and others are placed in stock to be machined in subsequent years.

4.3. Construction processes

Transport (A4)

The product is distributed 39,19% in Spain, 35,69% in Europe and 25,11% in the rest of the world.

A4 Transport to site

Scenario information	Unit (expressed per functional unit)
Type and fuel consumption of the vehicle, type of vehicles used for transport	According to the destinations in the distribution as described above: 0.154 l diesel (Truck Euro 6, 27 t) 0.0130 l fuel oil (ship)
Distance	300 km national distribution: 39.19% 1390 km resto of Europe: 35,.69% 6520 km rest of the world distribution: 25.11%
Capacity utilisation (including no-load return)	85% in truck 100% ship
Bulk density of transported products	300 kg/m^3
Usable capacity factor (factor: = 1 or < 1 or ≥ 1 for products that are packed compressed or nested)	Not applicable

Product installation and construction process (A5)

Once the product has been unpacked, it is installed using mortar, in accordance with the standard operating procedures for ceramic tiles.
Packaging waste is managed separately depending on the geographical location of the installation site.
On the other hand, a 5.6% product loss during the tile installation stage has been considered as a hypothesis, a percentage used in the ASCER EPD for Spanish ceramic coverings.

A5 Installation

Scenario information	Unit (expressed per functional unit)
Supplementary materials for installation (specify each material)	3.3 kg/m^2 of tile adhesive
Water use	0.8 l/m^2
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: 876 g Packaging wastes: Cardboard: 175 g Plastic: 16 g Wood: 212 g
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: 613 g Product losses for final deposition: 263 g Incinerated cardboard: 4 g Recycled cardboard: 160 g Cardboard for final deposition: 11 g Incinerated plastic: 2 g Recycled plastic: 11 g Plastic for final deposition: 3 g Incinerated wood: 60 g Recycled wood: 116 g Wood for final deposition: 36 g
Direct emissions to ambient air, soil and water	Not applicable

4.4. Use linked to the structure of the building

B1 Use

Once installed, the tiles do not require any energy or water to operate. The only maintenance required after installation is normal cleaning. For this reason, only the environmental burdens attributable to the maintenance of the product (module B2) are considered

B2 Maintenance

Cleaning is carried out using a damp cloth and cleaning agents.

.

B2 Maintenance

Scenario information	Unit (expressed per functional unit)
Maintenance process	According to RCP for ceramic tiles (EN17160) residential floor cleaning scenario
Maintenance cycle	Wash once a week with water and once every two weeks with detergent.
Auxiliary materials for maintenance (e.g. cleaning products) (specify each material)	Detergent: 1,34E-04 kg/m^2 per wash
Material wastage during maintenance (specify type))	Not applicable
Net tap water consumption	0.1 l/m^2 per wash
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

Ceramic tiles do not require repair, replacement or refurbishment, and their potential impact is not significant.

4.5. Use linked to the operation of the building

B6-B7 Energy and water use for operation.

These modules are not relevant for ceramic tiles.

4.6. End of life

C1 Deconstruction and demolition

The impacts attributable to the removal of the product as part of a building renovation or during its demolition are negligible, as specified in the PCR for ceramic tiles.

C2 Transport

The product waste is transported 50 km by truck for management, either by disposal in inert waste landfills or for recycling.

C3 Waste management for reuse, recovery and recycling

70% of tiles are considered to be recycled and/or reused, as indicated in the PCR.

C4 Final disposal

It was assumed that 30% of the product was sent to controlled landfills after its service life had ended.

End of life

Parameter	Unit (expressed per functional unit)
Collection process, specified by type	19.66 kg total
Recovery system, specified by type	13.76 kg for recycling
Disposal, specified by type	5.9 kg to landfill
Assumptions for scenario development (e.g.: transport)	Product waste is transported in a Euro 6 compliant heavy-duty truck (27 t) to be managed either to landfilling or recycling. An average distance of 50 km from the building site to the final destination is considered. The return journey of the lorries is also included, Euro6 of 27 t (100% empty return).

4.7. Benefits and burdens beyond the system

Module D

The net environmental burdens and net benefits of obtaining the secondary material from waste at the installation stage and at the end of life of the product have been considered. It has been considered that burdens are avoided in the recycling of packaging generated during the construction stage and in the recovery of waste generated at the end of the life of ceramic tiles as filler material.

4.8. Information on biogenic carbon content

Ceramic tiles are mineral products and therefore do not contain biogenic carbon; and plastic packaging contains carbon from fossil sources. However, other packaging such as cardboard or wooden pallets contains biogenic carbon. In this regard, the information corresponding to each product studied is shown.

Biogenic carbon content

Parameter	Unit (per FU)	Value
Biogenic carbon content of the product	kg C/m^2	-
Biogenic carbon content of the packaging	kg C/m^2	1,6E-01

5. Declaration of the environmental parameters of the LCA and the ICV

Environmental impacts

The estimated impact results are relative and do not indicate the final value of the impact categories, nor do they refer to threshold values, safety margins or risks.

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	14,4	5,7E-01	2,0	0	2,8E-02	0	0	0	0	0	0	1,0E-01	1,8E-02	9,5E-02	-1,6E-01
GWP-fossil	kg CO_2 eq	14,4	5,6E-01	1,9	0	2,7E-02	0	0	0	0	0	0	1,0E-01	1,8E-02	9,3E-02	-1,6E-01
GWP-biogenic	kg CO_2 eq	-6,7E-03	5,1E-05	6,2E-02	0	5,4E-04	0	0	0	0	0	0	0	8,4E-06	9,7E-04	5,4E-06
GWP-luluc	kg CO_2 eq	1,2E-02	7,8E-03	2,6E-03	0	1,8E-06	0	0	0	0	0	0	1,5E-03	4,3E-06	4,1E-04	-3,7E-04
ODP	kg CFC11 eq	1,4E-08	7,3E-14	7,6E-10	0	1,0E-11	0	0	0	0	0	0	1,4E-14	9,4E-14	5,4E-14	-6,0E-09
AP	mol H^+ eq	1,9E-02	2,1E-03	3,3E-03	0	9,1E-05	0	0	0	0	0	0	1,1E-04	2,8E-05	6,9E-04	-5,1E-04
EP-freshwater	kg P eq	9,2E-05	2,0E-06	8,1E-06	0	7,0E-07	0	0	0	0	0	0	3,9E-07	2,1E-09	2,0E-06	-2,1E-06
EP-marine	kg N eq	5,5E-03	5,6E-04	1,1E-03	0	2,0E-05	0	0	0	0	0	0	3,7E-05	7,1E-06	1,9E-04	-2,0E-04
EP-terrestrial	mol N eq	6,0E-02	6,3E-03	1,2E-02	0	2,1E-04	0	0	0	0	0	0	4,4E-04	7,7E-05	2,0E-03	-2,1E-03
POCP	Kg NMVOC eq	1,6E-02	1,7E-03	3,2E-03	0	5,6E-05	0	0	0	0	0	0	1,2E-04	2,2E-05	5,6E-04	-4,9E-04
ADP-minerals& metals [2]	kg Sb eq	3,4E-05	4,2E-08	1,9E-06	0	3,7E-10	0	0	0	0	0	0	8,0E-09	1,1E-09	9,7E-09	-6,9E-08
ADP-fossil [2]	MJ	160,9	6,7	15,1	0	4,7E-01	0	0	0	0	0	0	1,2	4,3E-01	1,3	-2,3E+00
WDP [2]	m^3	2,0	7,3E-03	2,3E-01	0	1,7	0	0	0	0	0	0	1,4E-03	7,3E-03	7,2E-03	1,3E-03

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.

Additional environmental impacts

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Incidence of diseases	5,6E-07	3,4E-08	7,0E-08	0	5,1E-10	0	0	0	0	0	0	1,1E-09	2,4E-10	8,4E-09	-1,9E-09
IRP [1]	kBq U235 eq	5,4E-01	1,7E-03	6,3E-02	0	3,2E-03	0	0	0	0	0	0	3,2E-04	4,3E-03	1,7E-03	-9,9E-03
ETP-fw [2]	CTUe	42,3	5,0	5,5	0	6,5E-01	0	0	0	0	0	0	9,0E-01	5,9E-02	7,6E-01	-1,3E+00
HTP-c [2]	CTUh	3,0E-09	9,9E-11	3,2E-10	0	3,8E-11	0	0	0	0	0	0	1,8E-11	2,6E-12	9,6E-11	6,2E-13
HTP-nc [2]	CTUh	7,3E-08	4,2E-09	1,5E-08	0	4,2E-09	0	0	0	0	0	0	8,2E-10	2,7E-11	1,0E-08	-1,3E-09
SQP [2]	-	107,0	3,0	18,0	0	1,1E-01	0	0	0	0	0	0	6,0E-01	1,3E-03	2,9E-01	-1,5E+00

PM: Potential for disease incidence due to emissions of particulate matter (PM); IRP : Exposure efficiency of human potential relative to U235; ETP-fw : Ecosystem toxic unit comparative potential - freshwater; HTP-c : Ecosystem toxic unit comparative potential - carcinogenic effects; HTP-nc : Ecosystem toxic unit comparative potential - non-carcinogenic effects; SQP : Soil quality potential index; NR: Not relevant

Note 1: This impact category deals mainly with potential impacts of low doses of ionising radiation on human health from the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents or occupational exposure due to disposal of radioactive waste in underground facilities. Ionising radiation potential of soil, due to radon or some building materials is also not measured by this parameter.

Note 2: The results of this environmental impact indicator should be used with caution, as the uncertainties of the results are high and experience with this parameter is limited.

Use of resources

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	51,2	5,3E-01	2,1	0	6,5E-01	0	0	0	0	0	0	1,0E-01	3,9E-02	1,5E-01	-2,2E+00
PERM	MJ	11,5	0	6,4E-01	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	62,8	5,3E-01	2,7	0	6,5E-01	0	0	0	0	0	0	1,0E-01	3,9E-02	1,5E-01	-2,2E+00
PENRE	MJ	160,9	6,7	5,8	0	4,7E-01	0	0	0	0	0	0	1,2	4,3E-01	1,3	-2,3E+00
PENRM	MJ	7,0E-01	0	3,9E-02	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	161,6	6,7	5,8	0	4,7E-01	0	0	0	0	0	0	1,2	4,3E-01	1,3	-2,3E+00
SM	kg	1,3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m3	3,8E-02	5,9E-04	4,7E-03	0	2,4E-02	0	0	0	0	0	0	1,2E-04	9,6E-05	2,4E-04	-1,5E-03

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water.

Waste categories

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	1,0E-05	2,6E-10	5,8E-07	0	1,3E-11	0	0	0	0	0	0	4,7E-11	9,4E-11	2,0E-08	-2,8E-08
NHWD	kg	2,4E-01	1,0E-03	4,7E-01	0	5,9E-03	0	0	0	0	0	0	2,0E-04	6,0E-05	5,8	-7,8E-04
RWD	kg	7,1E-03	1,2E-05	6,1E-04	0	7,8E-07	0	0	0	0	0	0	2,2E-06	6,7E-05	1,7E-05	-3,5E-05

HWD: Hazardous waste disposed of; **NHWD:** Non-hazardous waste disposed of**; RWD:** Radioactive waste disposed of**.**

Output flows

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	5,2E-01	0	9,0E-01	0	0	0	0	0	0	0	0	0	13,8	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRU: Components for reuse**; MFR:** Materials for recycling; **MER:** Materials for energy recovery; **EE:** Energy exported.

6. Additional Environmental Information

Indoor air emissions

Ceramic tiles undergo a thermal process exceeding 1000°C during their manufacture. At these temperatures, any organic compounds present in the composition decompose, resulting in an inert end product free of volatile organic compounds that could be emitted during use.

Release to soil and water

Ceramic tiles do not emit any compounds into the soil or water during the use phase, as it is a totally inert product, which does not undergo physical, chemical or biological transformations, is not soluble or combustible, does not react physically, chemically or in any other way, is not biodegradable, does not adversely affect other materials with which it comes into contact in a way that could lead to environmental pollution or harm human health. It is a non-leaching product and therefore does not pose a risk to surface or groundwater quality.

Environmental information about the company

VIVES has an integrated and certified Quality and Environmental Management System, in accordance with international standards ISO 9001 and ISO 14001, which covers the design, development, manufacturing and marketing phases of its ceramic tiles.

Environmental Product Declarations on recycled content:

VIVES prepares Environmental Product Declarations to provide its customers and other interested parties with information on the recycled content in ceramic tiles. The self-declarations are made in accordance with the guidelines set out in the EN ISO 14021 standard on Environmental Labels and Declarations and ISO 17889-1: Ceramic tiling systems — Sustainability for ceramic tiles and installation materials — Part 1: Specification for ceramic tiles.

The materials recovered and recycled in the manufacturing process are always of the type referred to as ‘pre-consumer’ according to ISO nomenclature, being both water and mineral in nature, mixed with new water and virgin raw materials in the stage of preparing the slip that will give rise to the spray dried ceramic powder, which is subsequently used to make the ceramic tile substrates.

Annex I. Declaration of the environmental parameters of the LCA and LCI for the format with MINIMUM impacts

Environmental impacts

The estimated impact results are relative and do not indicate the final value of the impact categories, nor do they refer to threshold values, safety margins or risks.

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	13,4	5,2E-01	1,9	0	2,8E-02	0	0	0	0	0	0	9,6E-02	1,7E-02	8,8E-02	-1,5E-01
GWP-fossil	kg CO_2 eq	13,4	5,1E-01	1,9	0	2,8E-02	0	0	0	0	0	0	9,4E-02	1,7E-02	8,7E-02	-1,5E-01
GWP-biogenic	kg CO_2 eq	1,3E-02	4,7E-05	6,3E-02	0	5,4E-04	0	0	0	0	0	0	0	7,9E-06	9,0E-04	1,4E-05
GWP-luluc	kg CO_2 eq	1,2E-02	7,2E-03	2,6E-03	0	1,8E-06	0	0	0	0	0	0	1,4E-03	4,0E-06	3,8E-04	-3,4E-04
ODP	kg CFC11 eq	1,8E-08	6,7E-14	1,0E-09	0	1,0E-11	0	0	0	0	0	0	1,3E-14	8,8E-14	5,0E-14	-6,0E-09
AP	mol H+ eq	2,5E-02	1,9E-03	3,6E-03	0	9,1E-05	0	0	0	0	0	0	1,0E-04	2,6E-05	6,5E-04	-5,0E-04
EP-freshwater	kg P eq	1,7E-04	1,8E-06	1,2E-05	0	7,0E-07	0	0	0	0	0	0	3,7E-07	1,9E-09	1,9E-06	-2,1E-06
EP-marine	kg N eq	7,3E-03	5,2E-04	1,2E-03	0	2,0E-05	0	0	0	0	0	0	3,5E-05	6,6E-06	1,8E-04	-1,9E-04
EP-terrestrial	mol N eq	7,7E-02	5,8E-03	1,3E-02	0	2,1E-04	0	0	0	0	0	0	4,1E-04	7,2E-05	1,9E-03	-2,0E-03
POCP	Kg NMVOC eq	2,0E-02	1,5E-03	3,4E-03	0	5,6E-05	0	0	0	0	0	0	1,1E-04	2,1E-05	5,2E-04	-4,8E-04
ADP-minerals& metals [2]	kg Sb eq	1,0E-04	3,8E-08	5,8E-06	0	3,7E-10	0	0	0	0	0	0	7,5E-09	1,1E-09	9,0E-09	-6,5E-08
ADP-fossil [2]	MJ	153,2	6,2	14,7	0	4,8E-01	0	0	0	0	0	0	1,1	4,0E-01	1,2	-2,2E+00
WDP [2]	m^3	2,4	6,7E-03	2,5E-01	0	1,7	0	0	0	0	0	0	1,3E-03	6,8E-03	6,7E-03	-2,8E-03

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.

Additional environmental impacts

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Incidence of diseases	1,6E-06	3,2E-08	1,3E-07	0	5,1E-10	0	0	0	0	0	0	1,1E-09	2,3E-10	7,9E-09	-1,8E-09
IRP [1]	kBq U235 eq	5,4E-01	1,6E-03	6,3E-02	0	3,2E-03	0	0	0	0	0	0	3,0E-04	4,0E-03	1,5E-03	-9,6E-03
ETP-fw [2]	CTUe	72,6	4,6	7,2	0	6,6E-01	0	0	0	0	0	0	8,4E-01	5,5E-02	7,1E-01	-1,2E+00
HTP-c [2]	CTUh	4,4E-09	9,1E-11	3,9E-10	0	3,9E-11	0	0	0	0	0	0	1,7E-11	2,4E-12	9,0E-11	6,3E-13
HTP-nc [2]	CTUh	2,9E-07	3,9E-09	2,7E-08	0	4,2E-09	0	0	0	0	0	0	7,6E-10	2,5E-11	9,5E-09	-1,2E-09
SQP [2]	-	136,8	2,8	19,6	0	1,1E-01	0	0	0	0	0	0	5,6E-01	1,2E-03	2,7E-01	-1,5E+00

PM: Potential for disease incidence due to emissions of particulate matter (PM); IRP : Exposure efficiency of human potential relative to U235; ETP-fw : Ecosystem toxic unit comparative potential - freshwater; HTP-c : Ecosystem toxic unit comparative potential - carcinogenic effects; HTP-nc : Ecosystem toxic unit comparative potential - non-carcinogenic effects; SQP : Soil quality potential index.

Note 1: This impact category deals mainly with potential impacts of low doses of ionising radiation on human health from the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents or occupational exposure due to disposal of radioactive waste in underground facilities. Ionising radiation potential of soil, due to radon or some building materials is also not measured by this parameter.

Note 2: The results of this environmental impact indicator should be used with caution, as the uncertainties of the results are high and experience with this parameter is limited.

Use of resources

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	65,2	4,9E-01	2,1	0	6,5E-01	0	0	0	0	0	0	9,8E-02	3,7E-02	1,4E-01	-2,2E+00
PERM	MJ	11,5	0	6,4E-01	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	76,7	4,9E-01	2,7	0	6,5E-01	0	0	0	0	0	0	9,8E-02	3,7E-02	1,4E-01	-2,2E+00
PENRE	MJ	153,2	6,2	5,7	0	4,8E-01	0	0	0	0	0	0	1,1	4,0E-01	1,2	-2,2E+00
PENRM	MJ	7,0E-01	0	3,9E-02	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	153,9	6,2	5,8	0	4,8E-01	0	0	0	0	0	0	1,1	4,0E-01	1,2	-2,2E+00
SM	kg	1,0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	4,8E-02	5,4E-04	5,3E-03	0	2,4E-02	0	0	0	0	0	0	1,1E-04	8,9E-05	2,2E-04	-1,5E-03

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water.

Waste categories

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	9,1E-08	2,3E-10	8,9E-09	0	1,3E-11	0	0	0	0	0	0	4,3E-11	8,7E-11	1,9E-08	-2,6E-08
NHWD	kg	3,7E-01	9,7E-04	4,6E-01	0	6,0E-03	0	0	0	0	0	0	1,9E-04	5,6E-05	5,4	-7,1E-04
RWD	kg	7,1E-03	1,1E-05	6,1E-04	0	7,9E-07	0	0	0	0	0	0	2,1E-06	6,3E-05	1,6E-05	-3,5E-05

HWD: Hazardous waste disposed of**; NHWD**: Non-hazardous waste disposed of**; RWD:** Radioactive waste disposed of.

Output flows

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	6,4E-01	0	7,9E-01	0	0	0	0	0	0	0	0	0	11,9	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRU: Components for reuse**; MFR:** Materials for recycling**; MER:** Materials for energy recovery**; EE:** Energy exported.

Annex II. Declaration of the environmental parameters of the LCA and LCI for the format with MAXIMUM impact

Environmental impacts

The estimated impact results are relative and do not indicate the final value of the impact categories, nor do they refer to threshold values, safety margins or risks.

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	18,9	7,6E-01	2,3	0	2,8E-02	0	0	0	0	0	0	1,3E-01	2,3E-02	1,2E-01	-1,9E-01
GWP-fossil	kg CO_2 eq	18,9	7,5E-01	2,2	0	2,7E-02	0	0	0	0	0	0	1,3E-01	2,3E-02	1,2E-01	-1,9E-01
GWP-biogenic	kg CO_2 eq	1,9E-02	6,9E-05	6,3E-02	0	5,3E-04	0	0	0	0	0	0	0	1,1E-05	1,2E-03	-3,2E-05
GWP-luluc	kg CO_2 eq	1,6E-02	1,0E-02	3,0E-03	0	1,8E-06	0	0	0	0	0	0	2,0E-03	5,5E-06	5,2E-04	-4,7E-04
ODP	kg CFC11 eq	1,8E-08	9,8E-14	1,0E-09	0	1,0E-11	0	0	0	0	0	0	1,7E-14	1,2E-13	6,8E-14	-6,0E-09
AP	mol H+ eq	3,0E-02	2,8E-03	4,0E-03	0	9,0E-05	0	0	0	0	0	0	1,4E-04	3,5E-05	8,8E-04	-5,7E-04
EP-freshwater	kg P eq	1,7E-04	2,7E-06	1,3E-05	0	6,9E-07	0	0	0	0	0	0	5,0E-07	2,6E-09	2,5E-06	-2,3E-06
EP-marine	kg N eq	8,6E-03	7,5E-04	1,3E-03	0	2,0E-05	0	0	0	0	0	0	4,7E-05	9,0E-06	2,4E-04	-2,2E-04
EP-terrestrial	mol N eq	9,2E-02	8,5E-03	1,4E-02	0	2,1E-04	0	0	0	0	0	0	5,6E-04	9,8E-05	2,6E-03	-2,4E-03
POCP	Kg NMVOC eq	2,4E-02	2,2E-03	3,6E-03	0	5,5E-05	0	0	0	0	0	0	1,5E-04	2,8E-05	7,1E-04	-5,5E-04
ADP-minerals& metals [2]	kg Sb eq	1,0E-04	5,6E-08	5,8E-06	0	3,7E-10	0	0	0	0	0	0	1,0E-08	1,5E-09	1,2E-08	-8,7E-08
ADP-fossil [2]	MJ	206,0	9,0	17,8	0	4,7E-01	0	0	0	0	0	0	1,5	5,4E-01	1,6	-2,5E+00
WDP [2]	m^3	2,6	9,8E-03	2,7E-01	0	1,7	0	0	0	0	0	0	1,8E-03	9,3E-03	9,1E-03	1,9E-02

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.

Additional environmental impacts

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Incidence of diseases	1,6E-06	4,6E-08	1,3E-07	0	5,0E-10	0	0	0	0	0	0	1,4E-09	3,1E-10	1,1E-08	-2,2E-09
IRP [1]	kBq U235 eq	6,3E-01	2,3E-03	6,8E-02	0	3,2E-03	0	0	0	0	0	0	4,1E-04	5,5E-03	2,1E-03	-1,2E-02
ETP-fw [2]	CTUe	80,6	6,7	7,7	0	6,5E-01	0	0	0	0	0	0	1,1	7,5E-02	9,6E-01	-1,5E+00
HTP-c [2]	CTUh	4,8E-09	1,3E-10	4,2E-10	0	3,8E-11	0	0	0	0	0	0	2,3E-11	3,3E-12	1,2E-10	5,9E-13
HTP-nc [2]	CTUh	2,9E-07	5,7E-09	2,7E-08	0	4,2E-09	0	0	0	0	0	0	1,0E-09	3,4E-11	1,3E-08	-1,5E-09
SQP [2]	-	140,9	4,0	19,9	0	1,1E-01	0	0	0	0	0	0	7,6E-01	1,7E-03	3,7E-01	-1,9E+00

PM: Potential for disease incidence due to emissions of particulate matter (PM); IRP : Exposure efficiency of human potential relative to U235; ETP-fw : Ecosystem toxic unit comparative potential - freshwater; HTP-c : Ecosystem toxic unit comparative potential - carcinogenic effects; HTP-nc : Ecosystem toxic unit comparative potential - non-carcinogenic effects; SQP : Soil quality potential index.

Note 1: This impact category deals mainly with potential impacts of low doses of ionising radiation on human health from the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents or occupational exposure due to disposal of radioactive waste in underground facilities. Ionising radiation potential of soil, due to radon or some building materials is also not measured by this parameter.

Note 2: The results of this environmental impact indicator should be used with caution, as the uncertainties of the results are high and experience with this parameter is limited.

Use of resources

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	71,1	7,1E-01	2,1	0	6,4E-01	0	0	0	0	0	0	1,3E-01	5,0E-02	1,9E-01	-2,2E+00
PERM	MJ	11,5	0	6,4E-01	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	82,6	7,1E-01	2,7	0	6,4E-01	0	0	0	0	0	0	1,3E-01	5,0E-02	1,9E-01	-2,2E+00
PENRE	MJ	206,0	9,0	5,8	0	4,7E-01	0	0	0	0	0	0	1,5	5,4E-01	1,6	-2,5E+00
PENRM	MJ	7,0E-01	0	3,9E-02	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	206,7	9,0	5,8	0	4,7E-01	0	0	0	0	0	0	1,5	5,4E-01	1,6	-2,5E+00
SM	kg	1,6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	5,3E-02	7,9E-04	5,6E-03	0	2,3E-02	0	0	0	0	0	0	1,5E-04	1,2E-04	3,0E-04	-1,6E-03

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water.

Waste categories

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	1,0E-03	3,4E-10	5,6E-05	0	1,3E-11	0	0	0	0	0	0	5,9E-11	1,2E-10	2,5E-08	-3,6E-08
NHWD	kg	4,4E-01	1,4E-03	5,7E-01	0	5,9E-03	0	0	0	0	0	0	2,5E-04	7,6E-05	7,4	-1,1E-03
RWD	kg	8,1E-03	1,6E-05	6,7E-04	0	7,8E-07	0	0	0	0	0	0	2,8E-06	8,6E-05	2,2E-05	-3,4E-05

HWD: Hazardous waste disposed of**; NHWD**: Non-hazardous waste disposed of**; RWD:** Radioactive waste disposed of.

Output flows

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	6,4E-01	0	1,0	0	0	0	0	0	0	0	0	0	16,2	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRU: Components for reuse**; MFR:** Materials for recycling**; MER:** Materials for energy recovery**; EE:** Energy exported.

References

[1] General Rules of the GlobalEPD Programme. 3ª revision. AENOR. October 2023.

[2] EN ISO 14025:2010 Environmental labels. Type III environmental declarations. Principles and procedures (ISO 14025:2006).

[3] EN 15804:2012+A2:2019 Sustainability in construction. Environmental product declarations. Basic product category rules for construction products.

[4] EN ISO 14040:2006 Environmental Management. Life Cycle Assessment. Principles and framework.

[5] EN ISO 14044:2006 Environmental Management. Life Cycle Assessment. Requirements and guidelines.

[6] EN 17160:2019 Product Category Rules for ceramic tiles.

[7] LCA for experts (Sphera-GaBi) v 10 software-system. SpheraSolutions. Compilation 10.9.3.0. Further information: https://sphera.com/life-cycle-assessment-lca-software/

[8] Managed LCA Content (Sphera databases). SpheraSolutions Upgrade 2024.2 Edition. January 2024. Further information: https://sphera.com/life-cycle-assessment-lca-database/

[9] Estudio de LCA Study. – VIVES. Annex I of report C251053; March 2026, version 1 issued by the Institute of Ceramic Technology.

[10] EN 15941:2024 Sustainability in construction. Data quality for the environmental assessment of construction products and works. Data selection and use.

Index

1. General information 3
3. LCA information 6
4. System limits, scenarios and additional technical information 9
5. Declaration of the environmental parameters of the LCA and the ICV....13
6. Additional Environmental Information....17
References 26

AENOR

A verified environmental declaration

GlobalEPD