

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN UNE 15804 + A2



PORCELANOSA



ADMINISTRATOR OF
PROGRAMME OPERATOR



COL·LEGI D'APARELLADORS,
ARQUITECTES TÈCNICS I ENGINYERS
D'EDIFICACIÓ DE BARCELONA



DECLARACIÓN AMBIENTAL DE PRODUCTO ENVIRONMENTAL PRODUCT DECLARATION

DAPcons®. NTe.007

According to ISO 14025 and
EN UNE 15804 + A2:2020



COL·LEGI D'APARELLADORS,
ARQUITECTES TÈCNICS
I ENGINYERS D'EDIFICACIÓ
DE BARCELONA

Product

Glazed Stoneware (Blb)

Owner

PORCELANOSA

Product description

The glazed stoneware product includes different families of ceramic products from the Blb absorption group (formed by dry pressing with Water Absorption Capacity $0,5\% < E \leq 3\%$).

PCR Reference

UNE-EN 17160 Product category rules for ceramic tiles

Production plant

The products included in this declaration were produced in two PORCELANOSA production plants located in Villarreal (Castellón - Spain).

Validity

From: 30/09/2021 To: 30/09/2026

The validity of DAPcons® NTe.007 is subject to the conditions of DAPcons® regulations. The relevant version of this DAPcons® is included in the register kept by the CAATEEB; for more information, consult the Program Operator website: www.csostenible.net

ENVIRONMENTAL PRODUCT DECLARATION. EXECUTIVE SUMMARY

Glazed Stoneware (Bib)



PROGRAMME OPERATOR DAPconstrucción®

Environmental product declarations of construction sector
www.csostenible.net



Administrator of Programme Operator

Col·legi d'Aparelladors, Arquitectes Tècnics i Enginyers de l'Edificació de Barcelona
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PORCELANOSA

Owner of the Declaration

PORCELANOSA
CARRETERA N-340, KM 56,
12540 VILLARREAL - Castellón (SPAIN)



Declaration carried out by:

ReMa-INGENIERÍA, S.L.
Calle Crevillente 1, entlo,
12005 - Castellón, (SPAIN)

Declared Product

Glazed Stoneware (Bib)

Product description

The glazed stoneware product includes different families of ceramic products from the Bib absorption group (formed by dry pressing with Water Absorption Capacity $0,5\% < E \leq 3\%$).

Geographical representativeness

This declaration has been prepared with production data from the PORCELANOSA plants located in Villarreal (Castellón, SPAIN).

Variability between different products

The variability of the total Global Warming Potential impact category in the A1-A3 modules of the different products included in this declaration is 14%.

Declaration Number

DAPcons®.NTE.007

Registration date

30/09/2021

Validity

This verified declaration authorises the owner to use the DAPcons® eco-label logo. The declaration is applicable exclusively to the product in question and for five years as of the date of registration. The responsible for the information contained in this declaration is: PORCELANOSA

Endorsed by CAATEEB

Celesti Ventura Cisternas, President of the CAATEEB

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Endorsed by authorised verifier

Ferran Pérez, ITEC. Verifier accredited by the
DAPconstruction Program

This environmental product declaration complies with the ISO 14025 and UNE-EN 15804: 2012 + A2: 2020 standards and describes environmental information regarding the life cycle of the Glazed Stoneware (Bib) product manufactured by PORCELANOSA at its plants in Villarreal (Castellón, SPAIN). This statement is based on the document UNE-EN 17160 Product category rules for ceramic tiles.



PORCELANOSA

DAPcons®
Glazed Stoneware (Blb)

ENVIRONMENTAL PRODUCT DECLARATION

1. PRODUCT DESCRIPTION AND APPLICATION

The product included is a medium Glazed Stoneware that includes different models of ceramic tiles from the Blb absorption group: formed by dry pressing with Water Absorption Capacity $0,5\% < E \leq 3\%$.

Average weight: 23.49 kg / m²

The results expressed in this declaration refer to an average product that includes several series. The average product has been calculated taking into account the weights per m² of the different series included and weighing by the production of the year studied.

The main recommended use for this product is as flooring and / or wall and facade cladding, both indoors and outdoors.



Glazed Stoneware (Bib) products



2. LIFE CYCLE PHASES DESCRIPTION

2.1. Manufacture (A1, A2 and A3)

Raw materials (A1 and A2)

The Glazed Stoneware (B1b) product is composed mainly of clay, sand, feldspar and with an enamel layer composed mainly of feldspar, carbonate, silicates and kaolin among others. The raw materials used have different origins (national, Turkey, Ukraine or the United Kingdom). This variation is due to the impossibility of obtaining said raw materials from the same origin. Raw materials from outside Spain are transported by freighter to the port of Castellón, and from there by 24t EURO VI truck to the plants. For sea transports, a medium transoceanic freighter has been chosen, whose transport distance differs in each case depending on the origin. All raw materials are transported in bulk.

Manufacturing (A3)

Once arrived at the factory, the raw materials are stored individually in the hoppers from which they will be dosed to start the process. Once the mixture is made, it is subjected to wet grinding processes in a alumina ball mill that works continuously. Subsequently, by means of the spraying process, the excess moisture is eliminated and a homogeneous mixture of the different components with a determined particle size is obtained and it is ready for the molding of the tiles.

The molding of the tiles is carried out by unidirectional dry pressing in presses, where the pressure is carried out only on one of the surfaces of the pieces. The tile, when leaving the press, is partially dried in vertical dryers to reduce its humidity, thus doubling or tripling its mechanical resistance, which allows its subsequent processing. The pieces that have just come out of the dryer then are covered with one or more layers of ceramic enamel. This treatment is carried out to give the surface of the fired product a series of technical and aesthetic properties such as: impermeability, gloss and color, surface texture, mechanical and chemical resistance. The enamels are manufactured in a plant outside Porcelanosa and are formulated by choosing, from a certain oxide composition, the appropriate raw materials, whose chemical composition and mineralogical structure will significantly influence the properties of the final product.

The tiles are then introduced into the kilns. This is the most important stage of the ceramic tile production process, since it is the moment in which the tiles undergo a fundamental modification in their properties. Once fired, the tiles are transported to the classification station where an aesthetic (visual) and dimensional control is carried out. Some series are rectified before sorting, to achieve perfect edges through the use of grinding wheels.

Finally, the final product is packed using cardboard, polyethylene, expanded polystyrene and wood. Once the pallet is formed, it is stored in the logistics area of the plant ready to be transported to the customer.

2.2. Construction (A4 and A5)

Product transport to the building site (A4)

PORCELANOSA produces tiles that are marketed both nationally (35,35%), in Europe (40,80%) and in the rest of the world (23,84%).

The truck used complies with the Euro VI standard, consumes 1.04E-05 kg of diesel / kg of cargo transported and km traveled.

For transcontinental transport, an average transoceanic freighter has been estimated.

Table 1. Transport scenarios of product to the building site

Destination	Type of transport	Percentage (%)	Average Km
Spain	27t truck	35,35	600
Europe	27t truck	40,80	1276
	Freighter		966
Rest of the world	27t truck	23,84	930
	Freighter		7167
		Total 100%	

Construction and instalation process (A5)

To characterize the installation scenario of the product, the indications of the UNE-EN 17160 standard have been followed:

- Auxiliary materials: Table 11. Option 1: Mortar 3.3 kg / m² and water 0.8 l / m².
- Packaging waste management: Table 12 Waste packaging scenarios.

	Recycling (%)	Energy recup.(%)	Landfil (%)
Plastic	37,2	31,5	31,3
Paper and cardboard	84,6	8,3	7,1
Wood	36,1	30,0	33,9

2.3. Product use (B1-B7)

As indicated in the PCR, module B1: The environmental impacts generated during the use phase are very low and, therefore, can be neglected.

Once installed, the ceramic product does not require any energy input for its use and does not require maintenance after its installation, except for normal cleaning operations. For this reason, of all the aforementioned modules, only the environmental burdens attributable to the maintenance of the product are considered (module B2).

To characterize the cleaning scenario, the indications of the UNE-EN 17160 (page 46) standard have been followed:

Scenario for maintenance of ceramic floor tiles:

- Residential use: 0.134 ml of detergent is used once every two weeks and 0.1 l of water is used to clean 1 m² of ceramic floor tiles once a week.

2.4. End-of-life (C1-C4)

Once it reaches the end of its life cycle, the product will be removed, either in the framework of a renovation of the building or during its demolition. In the case of the demolition of a building, the impacts attributable to the removal of the product are negligible. In the same way, the removal of the product in the case of a refurbishment has been considered negligible since the amount of energy necessary for the removal of 1m² of ceramic product is less than 1% of the total amount of energy necessary in the full life cycle. Therefore, it has been estimated that the impact of module C1 Deconstruction is negligible.

To characterize the cleaning scenario, the indications of the UNE-EN 17160 (table 17) standard have been followed:

End of life scenario

	Proportion (%)	Distance (Km)
Recycling and reuse	70	50
Landfill	30	50

The waste materials are transported with a EURO VI 14t-20t truck.

2.5. Benefits and loads beyond the system boundary (D)

Module D declares the existence of environmental burdens and credits (that is, avoided environmental impacts) outside the system limits due to the reuse, recovery or recycling of some of the system's outflows. The net impacts resulting from accounting for the impacts of the recycling process are declared and the production impacts of the primary materials or fuels displaced or replaced by recycled ones are subtracted, taking into account the difference in quality between the primary and secondary material.

As indicated in the PCR and in the UNE-EN 15804 standard, the burdens and benefits of waste materials destined for recycling generated in stages A1-A3 have not been accounted for in this module.

Therefore, the environmental burdens and benefits generated by recycling the waste produced in the installation (packaging materials) and End of Life stages have been accounted for.

3. LIFE CYCLE ASSESSEMENT

The life cycle assessment on which this declaration is based has been carried out following the ISO 14040 and ISO 14044 standards and the document UNE-EN 17160 Product category rules for ceramic tiles. This LCA is of the "from cradle to grave and module D" type, that is, it covers the stages of product manufacturing, construction, use and end of life.

Specific data from the PORCELANOSA plants (Villarreal, Castellón) corresponding to the year 2019 have been used to inventory the manufacturing stage. For the rest of the stages, generic data has been used, mostly from the Ecoinvent v3.7 (2020) database.

3.1. Functional Unit

"Covering of 1 m2 of a wall and floor surface with Glazed Stoneware material Blb for 50 years"

3.2. System boundary

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	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 = Included in LCA MND = Module not Declared

3.3. Data analysis for the life cycle (LCA)

Table 3. Indicators of the environmental impact

Parameter	Unit	Life Cycle Phase																Module D			
		Manufacture		Construction				Use								End of Life					
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4						
Global warming total (GWP-total)	kg CO2 eq	1.35E+01	9.46E-01	8.45E-01	0.00E+00	1.17E+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	2.03E-02	0.00E+00	7.45E-02	-1.82E-02
Global warming fossil fuels (GWP-fossil)	kg CO2 eq	1.35E+01	9.46E-01	7.85E-01	0.00E+00	5.70E-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	2.03E-02	0.00E+00	7.38E-02	-1.27E-01
Global warming - biogenic (GWP-biogenic)	kg CO2 eq	-3.97E-02	1.53E-04	5.89E-02	0.00E+00	1.57E-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	3.47E-06	0.00E+00	7.10E-04	1.10E-01
Global warming land use and land use change (GWP-landuc)	kg CO2 eq	1.49E-02	3.32E-04	3.48E-04	0.00E+00	4.37E-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	1.60E-07	0.00E+00	3.22E-05	-9.33E-04
Ozone layer depletion (ODP)	kg CFC 11 eq	2.64E-06	1.23E-07	3.88E-08	0.00E+00	3.02E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-09	0.00E+00	2.29E-08	-1.49E-03
Acidification (AP)	mol H+ eq	5.99E-02	1.56E-02	2.97E-03	0.00E+00	3.35E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.29E-06	0.00E+00	6.24E-04	-6.21E-04
Eutrophication - freshwater (EP-freshwater)	kg P eq	1.91E-03	1.62E-05	1.29E-04	0.00E+00	2.39E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.17E-08	0.00E+00	2.18E-05	-9.99E-05
Eutrophication - freshwater (EP-freshwater)	kg PO4 eq	1.14E-02	1.35E-03	6.88E-04	0.00E+00	2.23E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.83E-07	0.00E+00	1.40E-04	-5.12E-04
Eutrophication - marine (EP-marine)	kg N eq.	1.58E-02	3.81E-03	8.62E-04	0.00E+00	3.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.08E-06	0.00E+00	2.17E-04	-5.01E-04
Eutrophication - terrestrial (EP-terrestrial)	mol N eq.	1.67E-01	4.24E-02	8.83E-03	0.00E+00	9.06E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E-05	0.00E+00	2.36E-03	-3.70E-03
Trophospheric Ozone Formation (POCP)	kg MMVOC eq	4.46E-02	1.10E-02	2.33E-03	0.00E+00	2.13E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.17E-06	0.00E+00	6.80E-04	-9.42E-04
Abiotic depletion for non-fossil resources (ADP-minerals&metals)	kg Sb eq	1.58E-04	3.39E-06	5.08E-05	0.00E+00	2.22E-05	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	2.52E-09	0.00E+00	8.19E-07	-5.70E-05
Abiotic depletion for fossil resources (ADP-fossil)	MJ, net calorific value	2.55E+02	7.79E+00	5.86E+00	0.00E+00	1.01E+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	7.05E-02	0.00E+00	1.78E+00	-4.44E+00
Water user deprivation (WDP)	m3	6.47E+00	2.82E-02	7.95E-01	0.00E+00	1.18E+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	1.92E-04	0.00E+00	8.07E-02	-1.05E+00
Global Warming Potential - GHG	kg CO2 eq	1.35E+01	9.46E-01	7.86E-01	0.00E+00	1.01E+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	2.03E-02	0.00E+00	7.38E-02	-1.28E-01

A1 Raw materials supply. A2 Transport. A3 Manufacturing Product. A4 Transport A5 Construction – Installation process B1 Use. B2 Maintenance. B3 Repair. B4 Replacement. B5 Refurbishment. B6 Operational Energy use. B7 Operational water use. C1 Decommission and demolition. C2 Transport. C3 Waste management for reuse, recovery and recycling. C4 Disposal. MND Module not declared. MJ Net calorific value.

Table 4. Use of resources, waste and material outflows parameters

Parameter	Unit	Life Cycle Phase																Module D				
		Manufacture				Construction				Use												
		A1-A3	A4	A5		B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4						
Use of renewable primary energy, excluding the resources of non-renewable primary energy used as a raw materials	MJ, net calorific value	1,65E+01	4,19E+02	7,23E+01		0,00E+00	4,21E+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	1,40E+04	0,00E+00	2,88E+02	-1,51E+00	
Use of renewable primary energy used as raw materials	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use a renewable primary energy (primary energy and resources of renewable primary energy used as raw materials)	MJ, net calorific value	1,65E+01	4,19E+02	7,23E+01		0,00E+00	4,21E+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	1,40E+04	0,00E+00	2,88E+02	-1,51E+00	
Use of non-renewable primary energy, excluding the resources of non-renewable primary energy used as a raw materials	MJ, net calorific value	2,55E+02	7,70E+00	5,86E+00		0,00E+00	1,07E+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	7,05E+02	0,00E+00	1,79E+00	-4,44E+00	
Use of non-renewable primary energy used as raw materials	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	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 resources of renewable primary energy used as raw materials)	MJ, net calorific value	2,55E+02	7,70E+00	5,86E+00		0,00E+00	1,07E+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	7,05E+02	0,00E+00	1,79E+00	-4,44E+00	
Use of secondary materials	kg	1,68E+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	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	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water	m ³	6,17E+02	2,68E+04	1,71E+02		0,00E+00	2,68E+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	4,54E+07	0,00E+00	2,89E+04	-4,31E+03	
Hazardous waste disposed	kg	5,77E+03	9,88E+06	6,85E+06		0,00E+00	6,99E+06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,91E+07	0,00E+00	2,62E+06	-2,92E+06	
Non-hazardous waste disposed	kg	2,17E+00	1,46E+02	1,41E+01		0,00E+00	9,66E+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	1,66E+05	0,00E+00	7,08E+00	-2,23E+02	
Radioactive waste disposed	kg	5,48E+04	5,48E+05	2,05E+05		0,00E+00	2,21E+05	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	5,16E+07	0,00E+00	1,05E+05	-9,04E+06	
Components for re-use	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	1,01E+01	0,00E+00	2,19E+01		0,00E+00	5,32E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,64E+01	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	7,37E+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	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ per vector	2,66E+02	0,00E+00	5,26E+01		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,83E+01

A1 Raw materials supply. A2 Transport. A3 Manufacturing Product. A4 Transport A5 Construction – Installation process B1 Use. B2 Maintenance. B3 Repair. B4 Replacement. B5 Refurbishment. B6 Operational Energy use. B7 Operational water use. C1 Decomstruction and demolition. C2 Transport. C3 Waste management for reuse, recovery and recycling. C4 Disposal. MND Module not declared. MJ Net calorific value.



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Table 5. Kg of biogenic carbon

Product	0,00	Kg
Packaging	7,90E-02	Kg

3.4. Recommendations of this DAP

The comparison of construction products must be done by applying the same functional unit and at the building level, that is, including the behavior of the product throughout its entire life cycle. The environmental product declarations of different type III ecolabelling systems are not directly comparable, since the calculation rules may be different. This declaration represents the performance of the Glazed Stoneware product produced by PORCELANOSA.

3.5. Cut-off rules

More than 95% of all the mass and energy inputs and outputs of the system have been included, leaving out, among others, diffuse emissions in the factory.

3.6. Additional environmental information

The included product does not release hazardous substances into indoor air, soil and water during the use phase.

The product does not contain substances included in the European Chemicals Agency's Candidate List of Substances of Very High Concern.

3.7. Other data

Waste from the ceramic industry is included as non-hazardous waste in the European list of waste with LOW codes 10 12 08 "Waste from ceramics, bricks, tiles and construction materials [after the firing process]" and 17 01 07 " Mixtures of concrete, bricks, tiles and ceramic materials, other than those specified in code 17 01 06 ".

4. TECHNICAL INFORMATION AND SCENARIOS

4.1. Transport from the factory to the building site (A4)

Parameter	Parameter expressed by functional unit
Type and fuel consumption, type of vehicle used for transportation	EURO VI 27t truck (1.03E-05 kg diesel / kgkm)
Distance	956 km road 2103 km sea
Capacity utilization (including empty return)	85% for road transport and 100% for freighter.
Apparent density of transported product	2.263 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 by functional unit
Construction ancillary materials (specifying each material)	Mortar: 3,3 kg / m ²
Water consumption	0,8 kg water / m ²
Consumption of other resources	Not detected
Quantitative description of the type of energy (mix regional) and consumption during the installation process	Not detected
Materials waste on site before waste treatment, generated by the installation of the product (specify by type)	Negligible
Material outputs (specified by type) as a result of waste treatment on the building site. For example: collection for recycling, energy valuation, disposal (specified by route)	Packaging waste recycling 2,19E-01 kg Packaging waste energy recovery: 7,37E-02 kg Packaging waste landfill: 8,32E-02 kg
Emissions to the air, ground or water	Not detected

Reference service life (B1)

Parameter	Parameter expressed by functional unit
Reference service life (RSL)	50 years
Properties and characteristics of the product	Water Absortion Capacity 0,5%<E≤3%
Requirements (ways of using, maintenance frequency, repair, etc.)	Cleaning cycle: weekly and with detergent every two weeks.

4.4. Maintenance (B2), repair (B3), replacement (B4) or refurbishment (B5)

B2 Maintenance	
Parameter	Parameter expressed by functional unit
Maintenance, for example: cleaning agent, type of surfactant	Cleaning cycle: weekly and with detergent every two weeks.
Maintenance cycle	Residential use: weekly cleaning.
Auxiliar 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 a week.
Net consumption of fresh water	260 kg
Loss of material during maintenance or repair (specifying the type)	Not detected

B3 Repair	
Parameter	Parameter expressed by functional unit
Repair process	Does not apply
Inspection process	Does not apply
Repair cycle	Does not apply
Auxiliary materials (specifying each material), e.g. lubricant	Does not apply
Energy input during repair, vector type energy (for example, electricity) and quantity	Does not apply
Energy input during the process of renovation (amount and type of energy vector)	Does not apply
Loss of material during repair (specifying each material)	Does not apply
Net consumption of fresh water	Does not apply

B4 Replacement	
Parameter	Parameter expressed by functional unit
Energy input during replacement, for example for the use of cranes (quantity and energy vector)	Does not apply
Worn out parts replacement in the life cycle of the product (specifying each material)	Does not apply
Replacement cycle	Does not apply

B5 Rehabilitation	
Parameter	Parameter expressed by functional unit
Rehabilitation process	Does not apply
Rehabilitation cycle	Does not apply
Energy input during rehabilitation, for example for the use of cranes (quantity and energy vector)	Does not apply
Material input for rehabilitation, including auxiliary materials (specified by material)	Does not apply
Material waste during rehabilitation (specifying each material)	Does not apply
Other scenario development assumptions	Does not apply

4.5. Useful life reference

Parameter	Parameter expressed by functional unit
Useful life reference	50 years
Product declared properties, finishes, etc.	<ul style="list-style-type: none"> - Water absorption: Bib Group 0,5% <math>E \leq 3\%</math> - Euroclass reaction to fire: A1 / A1fl - All tiles are glazed. Glossy / matte finishes, Rectified / not rectified.
Application design parameters (manufacturer's instructions)	The installation of ceramic tiles requires qualified personnel, with proven experience and adequate tools.
Workmanship quality estimation, when installed in accordance with the manufacturer's instructions	50 years. Previously review the information contained in the packaging and scrupulously respect the manufacturer's recommendations.
Outdoor environment for outdoor applications. For example, weather, pollutants, UV radiation, temperature, etc.	The product is suitable to be installed outdoors.



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Indoor environment for indoor applications. For example, temperature, humidity, exposure to chemicals	The product complies with the limits set by the Indoor Air Comfort GOLD®
Terms of use. For example, frequency of use, mechanical exposure, etc.	Does not apply
Maintenance. For example, the required frequency, etc.	Cleaning- Residential use: 0.134 ml of detergent is used once every two weeks and 0.1 l of water is used to clean 1 m2 of ceramic floor tiles once a week.

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

Parameter	Parameter expressed by functional unit
Construction ancillary materials (specified by material)	Does not apply
Energy vector type. For example, electricity, natural gas, district heating	Does not apply
Equipment output power	Does not apply
Net fresh water consumption	Does not apply
Characteristic features (energy efficiency, emissions, etc.)	Does not apply
Other scenarios development assumptions. For example, transportation	Does not apply

4.7. End of life (C1-C4)

Process	Parameter expressed by functional unit
Collection processes (specified by types)	23.49 kg collected together with construction waste.
Recovery systems (specified by type)	Recycling: 16,44 kg
Elimination	7,05 kg
Assumptions for the development of scenarios. For example, transportation	The waste materials are transported with a EURO VI 14t-20t truck. Distance to recycling and landfill 50 km.

5. ADDITIONAL INFORMATION

- CE marking 001-DRP-20130701
- Breaking strength: Grupo Blb \geq 1.100 N

The company has the following certifications:

- UNE-EN-ISO 9001:2015 (N° certificate ES05/1884)
- UNE-EN-ISO 14001:2015 (N° certificate ES06/2640)
- UNE-EN-ISO14064-1:2019 - CO2 verified - Carbon Footprint (N° certificate 02/940-28734-02)
- Zero Waste Verification Statement (Ref. 02/940-273878)
- EU Ecolabel Certificate (ES-V/021/002)
- UNE-EN-ISO 14021:2016 (N° certificate ES13/13672)
- UNE-EN-ISO 50001:2018 (N° certificate ES77/1709)



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6. PCR AND VERIFICATION

This declaration is based on the Document

UNE-EN 17160 Product Category Rules for Ceramic Tiles

Independent verification of the declaration and data according to ISO 14025 and UNE EN15804 + A2

Internal External

Independent verifier appointed

ITEC, Ferran Pérez. Verifier accredited by the DAPconstruction Program



Verification date

20/09/2021

References

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