ENVIRONMENTAL PRODUCT DECLARATION

DAPcons®.002.015

IN ACCORDANCE WITH STANDARDS
ISO 14.025 and UNE EN 15804 + A1

PRODUCT

Medium Wall Tile

COMPANY

PORCELANOSA

PRODUCT DESCRIPTION

The product covered is Medium Wall Tile that includes several models of Wall Tile.

PCR REFERENCE

RCP002 - Productos de revestimiento cerámico – V.2 (2015) (Spanish versión)

PRODUCTION PLANT

PORCELANOSA S.A.
Carretera N-340, Km 56
Villareal, 12540. Castellón

VALIDITY

From: 25/07/2016
To: 25/07/2021

The validity of DAPcons®002.015 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's website: http://www.csostenible.net/

Environmental Product Declaration: Medium Wall Tile Executive Summary

PROGRAM DAP®construcción Environmental product declarations in the construction sector http://www.csostenible.net
PROGRAM OPERATOR Col·legi d'Aparelladors, Arquitectes Tècnics i Enginyers d'Edificació de Barcelona (CAATEEB) C. Bon Pastor, 5, 08021 Barcelona www.apabcn.cat
HOLDER OF THE DECLARATION PORCELANOSA S.A., Carretera N-340, Km 56 Villareal, 12540. Castellón. DECLARATION CARRIED OUT BY: ReMa-INGENIERÍA, S.L. Calle Crevillente 1, entlo, Castellón - España
DECLARATION NUMBER — DAPcons® 002.015
PRODUCT DECLARED — Medium Wall Tile
PRODUCT DESCRIPTION The product in question is a Medium Wall Tile that includes several models of Wall Tile. The variability of Life Cycle Inventory Assessment (LCIA) results doesn't exceed 10%.
REGISTRATION DATE — 25.07.2016
VALIDITY This verified declaration authorises the holder 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. PORCELANOSA S.A. is responsible for the information contained in this declaration.

ENDORSED BY CAATEEB	ENDORSED BY AUTHORISED VERIFIER
Mr. Joan Ignasi Soldevilla i Albertí, Managing director of the CAATEEB APARELLADORS ARQUITECTES TÈCNICS I ENGINYERS D'EDIFICACIÓ DE BARCELONA	Mr. Ferran Pérez Ibáñez, accredited auditor of ITEC ITeC Institut de Tecnologia de la Construcció de Catalunya

This environmental product declaration complies with standards ISO 14025 and UNE EN 15804 + A1 and contains information of an environmental nature about the life cycle of Medium Wall Tile manufactured by PORCELANOSA at its plant in Villareal, Castellón, Spain. This declaration is based on the document "RCP 002 Productos de revestimiento cerámico – Versión 2 – 2015.09.18." (Spanish version).

Environmental Product Declaration: Medium Wall Tile

1. Description of the product and its use

The product covered is Medium Wall Tile that includes several models of Wall Tile whose variability of Life Cycle Inventory Assessment (LCIA) results doesn't exceed 10%.

It includes the following water absortion group:

- Group BIII: dry-pressed tiles with a rate of water absortion E > 10%.

Average weight: 17,21 kg/m2

The main recommended use for this product is to clad interior walls.

2. Description of the life clycle phases

2.1. Manufacture (A1, A2 and A3)

Raw materials (A1 y A2)

The Medium Wall Tile basically consists of clay, sand and feldspar with an enamel layer mainly comprising feldspar, carbonate, silicate and kaolin, amongst others.

The raw materials used have different origins (provincial, national, France or the United Kingdom). This variation is due to the inability to obtain these materials from a single source. The raw materials from outside Spain are transported by freighter to the port of Castellón and then by truck to the plants. For marine transport, a transoceanic freighter was chosen, with transport distance differing according to the source. All raw materials are transported by bulk, i.e. they do not require any packaging materials.

Manufacture (A3)

Once at the Factory, the raw materials are trasnported to the interior of the plant and stored individually in hoppers that dispense the amount of each raw material to start the process.

Once the mix is made, it is subjected to the processes of milling (or grinding) and then spraying. This stage of the production process serves to produce a homogeneous mixture of the various components with a given particle size and prepares it for moulding the tiles. The wet milling is carried out using a constantly rotating ball mill.

The spraying process eliminates the excess of moisture of the barbotine. It is introduced into the atomizer by sprays that pulverize it and, in contact with a flow of hot air, dries it, becomes atomized and turns into poder, wich falls due to gravity. The atomized poder is stored in hoppers.

The company employs a system of combined heat and power for the atomizer. The cogeneration process generates electricity using residual heat produced by combustión, by means of a system of turbine and alternators. In a cogeneration plant with the use of a fuel such as natural gas, hot air is generated by a burner and electricity by a turbine. The hot air produced by combustión during cogeneration is used for the spraying process, avoiding the use of the burners. The electricity generated by the turbo-alternator is consumed during the process of manufacturing tiles.

Later on, the tile is given the desired form. Its moulding its carried out by one-way dry pressing with single-acting press, where only one of the surfaces of the piece receives pressure.

The freshly-moulded pieces are introduced in a drying system similar to a wheel with a given lap-time according to each product in order to reduce its moisture, doubling or tripling its mechanical resistance, which allows a later processing. Then the temperatura of the tile is reduced and the rough edges are removed (the edges are sanded).

The tiles leaving the drying plant are covered by one or more glazing layers. They are treated in this way to give the surface of the fired product a series of technical and aesthetic properties, such as:

- Impermeability
- Ease of cleaning
- Shine and color
- Surface texture
- Chemical resistance
- Mechanical resistance

The first phase before the application of ceramic glazes is their formulation and preparation. Glazes are manufactured at a plan outside Porcelanosa. On the basis of a given oxide composition, the appropiate raw materials are chosen, whose chemical composition and mineralogical structure will significantly influence the final properties of the glaze. They mainly comprise silica and quartz, followed by oxidizing agents, alkalis, carbonates and zinc oxides (to give particular characteristics of opacity and shine to the frit). These raw materials are mixed and wet milled to produce a barbotine similar to the one prepared for the tile itself, but with smaller particle size and a higher percentage of water.

The glazing operation involves the successive application of enamel suspensions. The glazing line consist of a system of belts driven by pulleys, over which the ceramic tiles are automatically placed as they emerge from the dryer. Along this line is distributed the necessary equipment to implement the slip and the glaze, both as an aqueous suspension, on the tile by using a continuous glazing compartment.

Once the glazing is completed, the pieces are sent to decoration. At this stage, the patterns and designs are applied on the tiles, which are then stored before thay are put into the kilns.

The tiles are unloaded from the wagons onto a conveyor belt that takes them into the kilns. The firing is the most important stage of the production process of ceramic tiles, as this is when the previously moulded tiles undergo a fundamental modification of their properties.

Once fired, the tiles are transported to the classification station, where an aesthetic (visual) and dimesional examination is carried out. The dimensional examination consists of determining deviations in length and width, orthogonality, straightness of sides and flatness of surface by means of an opctical measurement system. The tiles are then packaged. Some series of tiles are taken away to be rectified by grinding, thereby ensuring perfect edges before they are classified.

The tiles that meet standards (recified or not) are packaged using cardboard, pallets and polyethylene. Once the pallet is made up, it is stored in the logistics area of the plant.

To reduce atmospheric emissions, bag filters and wet filters are used.

The tile Factory has a closed system of wáter reuse. Water may be lost by evaporation or by being retained in the product (before ultimately evaporating). To make up for this loss, well wáter is brought in for the production process. The water is treated using a physical-chemical process and is reintroduced in the grinding and atomizing process.

2.2. Construction

Transporting the product (A4)

Wall tiles produced by Porcelanosa are marketed both in Spain (13,2%) and in Europe (43,4%) and the rest of the world (43,4%). The most frequent destinations are:

- Spain: Madrid, Barcelona, Valencia, Seville, Saragossa, Málaga, Bilbao and Castellón.
- Europe: France, Great Britain, Italy and Eastern European countries.
- Rest of the world: USA, Australia, Japan, China and South America (Argentina).

In keeping with the data provided by Porcelanosa, there are three transport scenarios for the finished products.

Table 2. **Scenarios for transport of the product to the place of installation.**

Destination	**Type of transport**	**Percentage (%)**
Spain	27 t truck	13,2
Europe	27 t truck t	43,4
Rest of the world	Transoceanic freighter	43,4
Total		

The truck used meets the Euro III standards, consumes 1,25E-05 kg of diesel / kg of cargo and km.

For transcontinental transport, medium-sized transoceanic freighters are considered appropriate.

The estimated distances between the tile factories and the place of installation are:

- 500 km and 2,000 km for products installed in Spain and Europe, respectively.
- 5,000 km for products transported to and installed in the rest of the world.

Process of installing the product and construction (A5)

Once the product is unpacked, it can be installed. According to the data obtained and with a view to applying a real scenario, it is established that installation calls for the use of adhesive mortar (CaSO4). Tile adhesives are cement-based adhesives comprising a mixture of hydraulic binders, mineral fillers and organic additives, mixed with water or added liquid just before use. They consist of a mixture of white or grey cement, siliceous and/or limestone mineral fillers and organic additives, water retainers, water redispersible polymers, rheology modifiers, fibres, etc.

2.3. Use of product

The use phase is divided into the following modules:
- Use (B1)
- Maintenance (B2)
- Repair (B3)
- Replacement (B4)
- Rehabilitation (B5)
- Use of operational energy (B6)
- Use of operational water (B7)

Once installed, the Medium Wall Tile product requires no further energy input for use, nor does it call for maintenance, except normal cleaning operations. For this reason, of all the modules listed above, only the environmental impacts attributable to product maintenance are applicable (module B2).

According to PORCELANOSA, the life cyle of the reference product is the same as that of the building in which it is used. Provided that it is correctly installed, it is a lasting product.

- Maintenance (B2)

The product should be cleaned with a damp cloth. If the surface is dirty or greasy, cleaning agents such as detergents or bleach may be added. This study considers the consumption of water and disinfectant for a scenario of residential use.

Scenario 1: residential use – 0.03 kg of detergent and 5 l of water are used to wash 50 m2 of tiles, once a week.

Table 3. **Scenarios for the maintenance of 1 m^2 of medium stoneware product**

Cleaning products	**Scenario 1**
Water (kg/wash)	0.1
Detergent (kg/wash)	0.0006
Frequency of washing (num. of times)	1

2.4. End of life

The end-of-life phase includes the following modules:

- Deconstruction and demolition (C1)

Once it reaches the end of its life cycle, the product will be removed, either in the framework of rehabilitation 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.

- Transport (C2)
The product waste is transported by truck in compliance with Euro III norms, to its destination at a distance of 50 km. In this estimation of the 50 km between the demolished building and the closest landfill site, only the Spanish market has been taken into account, extrapolating the results to the overall ceramics market. At present, Spain has over 80 authorized CDW sites. However, these landfill sites are mostly concentrated in certain areas such as Catalonia (55%), Galicia (12%) and Andalusia (11%). The main Spanish cities are expected to have an installation of this kind nearby.

- Waste management for reuse, recovery and recycling (C3)
At present, in Spain there is no specific basic legislation on the production and management of waste produced by construction and demolition (CDW). Therefore it is covered by Basic Law 10/1998 on waste. The most usual type of treatment of CDW in Spain is to place it in a landfill site (83%), and the rest is recycled. This is the scenario applied in this report; 17% of the product is recycled.

- Disposal (C4)
83% of the product is sent to a landfill site.

2.5. Module D: potential environmental benefits and burdens resulting from activities of reuse, recovery and recycling

It is considered that impacts are avoided in the installation (waste of packaging such as cardboard, plastic and pallets) and at the end of the product life.

3. Life cycle assessment

The life cycle assessment on which this declaration is based was carried out in keeping with ISO standards 14040 and 14044 and the document "RCP 002 Productos de revestimiento cerámico Version 2 – 2015.09.18." (Spanish version)

This LCA is "cradle to grave", that is, it covers the phases of manufacture of the product, construction, use and end of life.

Specific data from the PORCELANOSA S.A plant in Chilches, Castellón, Spain corresponding to the year 2015 has been used to inventory the manufacturing phase. For the rest of the phases, generic data has been used, taken mostly from the official database of the Program DAP®construción and the ELCD database.

3.1. Functional unit

The functional unit is **"1 m2 of cladding of a dwelling with Medium Wall Tile for 50 years of residential use"**.

3.2. System boundaries

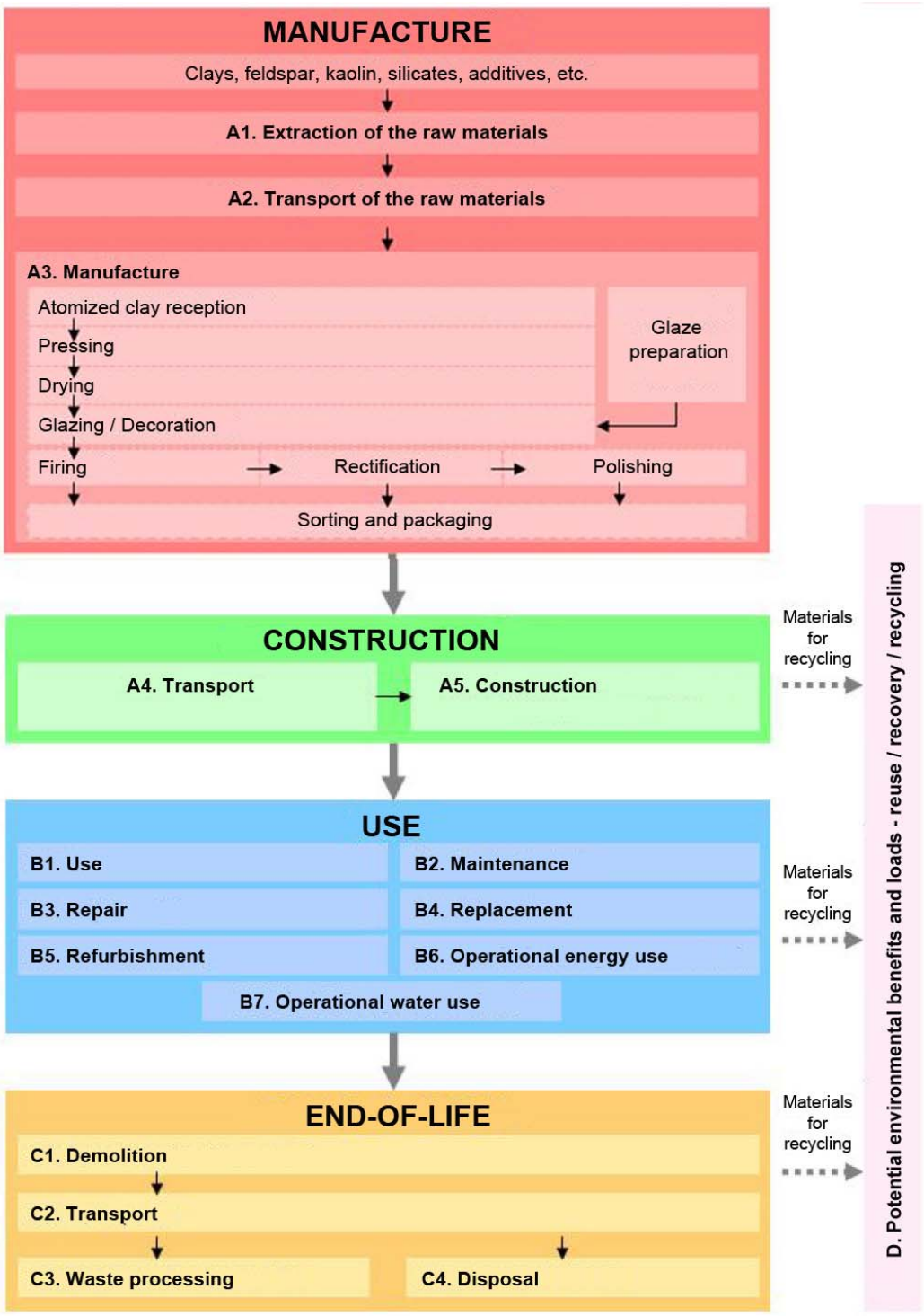

Figura 1. **System boundaries**

3.3. Indicators of impact evaluation

Table 4. **Indicators of impact evaluation**

Parameter	Unit per m² of panel	Life Cycle Phase													
		Manufacture	Construction		Use							End Of Life			
		A1. – A3.	A4.	A5.	B1.	B2.	B3.	B4.	B5.	B6.	B7.	C1.	C2.	C3.	C4.
Global Warming Potential	kg of CO_2 eq.	13,18	1,00	2,63E-01	-	2,77	-	-	-	-	-	-	7,45E-02	1,14E-02	7,77E-02
Ozone Depletion Potential	Kg of CFC11 eq.	2,06E-06	1,80E-07	1,76E-08	-	2,44E-07	-	-	-	-	-	-	1,41E-08	1,45E-09	2,57E-08
Acidification Potential	Kg of SO_2 eq.	6,67E-02	9,91E-03	1,24E-03	-	1,27E-02	-	-	-	-	-	-	4,95E-04	9,49E-05	6,79E-04
Eutrophication Potential	Kg of $PO_4{}^{-3}$ eq.	8,68E-03	1,39E-03	3,30E-04	-	8,47E-03	-	-	-	-	-	-	8,54E-05	5,40E-06	1,21E-04
Abiotic Resources Depletion Potential (Elements)	Kg of Sb eq.	1,11E-01	6,86E-03	1,90E-03	-	1,03E-02	-	-	-	-	-	-	5,17E-04	6,51E-05	1,05E-03
Abiotic Resources Depletion Potential (Fossil fuels)	MJ, net calorific value	2,30E+02	1,43E+01	3,95E+00	-	2,14E+01	-	-	-	-	-	-	1,08E+00	1,35E-01	2,18E+00
Photochemical Ozono Formation Potential	kg of ethane eq.	4,36E-02	8,22E-03	8,26E-04	-	1,00E-02	-	-	-	-	-	-	6,33E-04	2,43E-05	8,12E-04

A1. Supply of raw materials
A2. Transport
A3 Manufacture according to figure 1)
A4. Transport
A5. Precesses of installation and construction

B1. Use
B2. Maintenance
B3. Repair
B4. Replacement
B5. Refurbishment
B6. Operational energy use
B7. Operational wáter use

C1. Deconstruction and demolition
C2. Transport
C3. Waste management for reuse, recovery and recycling
C4. Disposal

-: The PCR do not provide for the calculation of this impact, as it is not relevant to this type of product.

3.4. Life cycle inventory data (LCI)

Table 5. **Life cycle inventory data**

Parameter	Unit per m² of panel	Life Cycle Phase													
		Manufacture	Construction		Use							End Of Life			
		A1. – A3.	A4.	A5.	B1.	B2.	B3.	B4.	B5.	B6.	B7.	C1.	C2.	C3.	C4.
primary energy excluding renewable primary energy resources used as raw	MJ (net calorific value)	1,98E+01	1,09E-01	3,64E-01	-	4,30E+01	-	-	-	-	-	-	2,99E-03	1,49E-02	5,24E-02
Use of renewable primary energy resources used as raw materials, PERM	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
Total use of renewable primary energy resources, PERT	MJ (net calorific value)	1,98E+01	1,09E-01	3,64E-01	-	4,30E+01	-	-	-	-	-	-	2,99E-03	1,49E-02	5,24E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw material, PENRE	MJ (net calorific value)	2,41E+02	1,55E+01	4,00E+00	-	3,41E+01	-	-	-	-	-	-	1,17E+00	1,61E-01	2,34E+00
Use of non-renewable primary energy resources used as raw materials, PENRM	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
Total use of non-renewable primary energy resources, PENRT	MJ (net calorific value)	2,41E+02	1,55E+01	4,00E+00	-	3,41E+01	-	-	-	-	-	-	1,17E+00	1,61E-01	2,34E+00
Use of secondary material, SM	kg	1,28E+01	0,00E+00	0,00E+00	-	0,00E+00	-	-	-	-	-	-	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels, RSF	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
Use of non-renewable secondary fuels, NRSF	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
Net use of fresh water, FW	m3	2,40E-02	5,28E-04	9,99E-04	-	8,75E-01	-	-	-	-	-	-	2,61E-05	2,33E-05	1,45E-04
Hazardous waste disposed, HWD	kg	1,50E-02	4,63E-06	5,66E-06	-	3,35E-05	-	-	-	-	-	-	2,72E-07	7,83E-08	1,47E-06
Non-hazardous waste disposed, NHWD	kg	6,14E-03	2,53E-01	3,56E-01	-	2,04E-04	-	-	-	-	-	-	1,29E-04	1,43E+01	6,14E-03
Radioactive waste disposed, RWD	kg	4,14E-04	1,03E-04	2,03E-05	-	5,77E-05	-	-	-	-	-	-	7,97E-06	8,97E-07	1,46E-05
Components for reuse, CRU	kg	0,00E+00	0,00E+00	0,00E+00	-	0,00E+00	-	-	-	-	-	-	0,00E+00	0,00E+00	0,00E+00
Materials for recycling, MFR	kg	2,91E+00	0,00E+00	2,56E-01	-	0,00E+00	-	-	-	-	-	-	0,00E+00	2,93E+00	0,00E+00
Materials for energy recovery, MER	kg	1,75E-02	0,00E+00	1,23E-01	-	0,00E+00	-	-	-	-	-	-	0,00E+00	0,00E+00	0,00E+00
Export energy, EE	MJ (per energy carrier)	1,84E-01	0,00E+00	0,00E+00	-	0,00E+00	-	-	-	-	-	-	0,00E+00	0,00E+00	0,00E+00

A1. Supply of raw materials
A2. Transport
A3 Manufacture according to figure 1)
A4. Transport
A5. Precesses of installation and construction

B1. Use
B2. Maintenance
B3. Repair
B4. Replacement
B5. Refurbishment
B6. Operational energy use
B7. Operational wáter use

C1. Deconstruction and demolition
C2. Transport
C3. Waste management for reuse, recovery and recycling
C4. Disposal

-: The PCR do not provide for the calculation of this impact, as it is not relevant to this type of product.

3.5. Potential environmental benefits and impacts derived from activities of reuse, recovery and recycling

Anex 1 - Table 4. **Indicators of impact evaluation**

Reuse, recovery and recycling		
Parameter	**Unit per m² of panel**	**D.**
Global Warming Potential	kg of CO_2 eq.	-8,33E-02
Ozone Depletion Potential	Kg of CFC11 eq	-7,52E-09
Acidification Potential	Kg of SO_2 eq.	-3,76E-04
Eutrophication Potential	Kg of PO_4□- eq.	-1,37E-04
Abiotic Resources Depletion Potential (Elements)	Kg of Sb eq.	-7,04E-04
Abiotic Resources Depletion Potential (Fossil fuels)	MJ (net calorific value	-1,46E+00
Photochemical Ozono Formation Potential	kg of ethane eq.	-4,51E-04

D. Potential environmental benefits and impacts derived from activities of reuse, recovery and recycling

Anex 1 - Table 5. **Life cycle inventory data**

Reuse, recovery and recycling		
Parameter	**Unit per m² of panel**	**D.**
Use of renewable primary energy excluding renewable primary energy resources used as raw material, PERE	MJ (net calorific value)	-3,13E+00
Use of renewable primary energy resources used as raw materials, PERM	MJ (net calorific value)	0,00E+00
Total use of renewable primary energy resources, PERT	MJ (net calorific value)	-3,13E+00
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw material, PENRE	MJ (net calorific value)	-1,58E+00
Use of non-renewable primary energy resources used as raw materials, PENRM	MJ (net calorific value)	0,00E+00
Total use of non-renewable primary energy resources, PENRT	MJ (net calorific value)	-1,58E+00
Use of secondary material, SM	kg	0,00E+00
Use of renewable secondary fuels, RSF	MJ (net calorific value)	0,00E+00
Use of non-renewable secondary fuels, NRSF	MJ (net calorific value)	0,00E+00
Net use of fresh water, FW	m3	-9,64E-04
Hazardous waste disposed, HWD	kg	-1,20E-05
Non-hazardous waste disposed, NHWD	kg	-9,53E-03
Radioactive waste disposed, RWD	kg	-3,56E-06
Components for reuse, CRU	kg	0,00E+00
Materials for recycling, MFR	kg	0,00E+00
Materials for energy recovery, MER	kg	0,00E+00
Export energy, EE	MJ (per energy carrier)	0,00E+00

D. Potential environmental benefits and impacts derived from activities of reuse, recovery and recycling

3.6. Recommendations of this DAP

Construction products should be compared by applying the same functional unit and level of building, i.e. including the product's behaviour throughout its life cycle.

Environmental product declarations of different systems of type III eco-labelling are not directly comparable, as the rules of calculation may be different.

This declaration represents the average behaviour of the Medium Wall Tile product manufactured PORCELANOSA.

3.7. Cut-off rules

Over 95% of all the inputs and outputs of mass and energy of the system have been included, excluding, among others, diffuse emissions in the factory.

3.8. Additional environmental information

The Wall Tile does not release hazardous substances in indoor air, soil and water during the use phase.

3.9. Other info

Waste from the ceramics industry is included as "non-hazardous waste" in the European List os Waste under LOW code 17 01 03 "tiles and ceramics" and EWC 17 01 07 "Mixtures of concrete, bricks, tiles and ceramics other tan those mentioned in 17 01 06".

4. Technical information and scenarios

A) Transport

Parameter	**Parameter expressed by functional unit**
Consumption of fuel or transport vehicle used	*17 tn truck:* 1,19E-05 kg diesel/kgkm *27 tn truck:* 1,25E-05 kg diesel/kgkm
Capacity of use (including return full)	85% for road transport and 100% for freighter
Density of load of product transported	1.700 kg/m^3
Factor for calculating the capacity of the volume used	9,83 for a truck 1,67E-03 kg/m_3 for a freighter

B) Processes of installation

Parameter	**Parameter expressed by functional unit**
Auxiliary materials for installation	Mortar: 1.3 kg
Consumption of other resources	0.325 kg of water
Quantitative description of the type of energy and consumption during the process of installing the product	Not detected
Waste on the construction site, generated by the installation of the product	*Spain:* Cardboard for incineration*:* 8,26E-04 *kg* Cardboard for recyling*:* 8,68E-03 *kg* Cardboard to landfill sites*:* 4,27E-03 *kg*

	Pallet for incineration:	2,95E-02 *kg*
	Pallet for recycling:	2,76E-02 *kg*
	Pallet for landfill sites:	5,65E-03 *kg*
	Plastic for incineration:	1,01E-05 *kg*
	Plasctic for recycling:	1,44E-04 *kg*
	Plastic for landfill sites:	4,74E-03 *kg*
	Europe:	
	Cardboard for incineration:	3,35E-02 *kg*
	Cardboard for recyling:	1,09E-02 *kg*
	Cardboard to landfill sites:	4,13E-02 *kg*
	Pallet for incineration:	7,48E-02 *kg*
	Pallet for recycling:	8,66E-02 *kg*
	Pallet for landfill sites:	6,14E-05 *kg*
	Plastic for incineration:	6,37E-05 *kg*
	Plasctic for recycling:	1,11E-04 *kg*
	Plastic for landfill sites:	3,35E-02 *kg*
	World:	
	Cardboard for incineration:	9,06E-03 *kg*
	Cardboard for recyling:	4,53E-03 *kg*
	Cardboard to landfill sites:	3,17E-02 *kg*
	Pallet for incineration:	4,13E-02 *kg*
	Pallet for recycling:	1,03E-01 *kg*
	Pallet for landfill sites:	6,19E-02 *kg*
	Plastic for incineration:	4,72E-05 *kg*
	Plasctic for recycling:	2,36E-05 *kg*
	Plastic for landfill sites:	1,65E-04 *kg*
Material output as a result of the processes of waste management in the place of installation. For example: collection for recycling, for energy recovery and disposal	See previous point, *"Waste on the construction site, generated by the installation of the product"*	
Emissions to the air, land and water	Not detected	

C) Operational use of energy and water

Parameter	**Parameter expressed by functional unit**
Type of energy, for example: electricity, natural gas, use of heat for a district	Not detected
Outputs	Not detected
Net consumption of fresh water	Not detected
Service life (reference)	50 years

D) Maintenance and repair

Parameter	**Parameter expressed by functional unit**

Maintenance, for example; cleaning agent, type of surfactant	Quantities for cleaning 1 m2 (once)= - 0.00006 kg detergent - 0.1 kg water
Maintenance cycle	Cleaning for residential use = once/week* 52 weeks/year* 50 years =2600 washes
Energy input for the maintenance process	Not detected
Net consumption of fresh water during maintenance or repair	0.260 m_3
Inspection, maintenance or repair process	Not detected
Inspection, maintenance or repair cycle	Not detected
Auxiliary materials, e.g. lubricant	Not detected
Changing of parts during product life cycle	Not detected
Energy input during maintenance, type of energy, e.g.: electricity, and amount	Not detected
Energy input during the process of repair, renovation, changing parts if applicable and significant	Not detected
Loss of material during maintenance or repair	Not detected
Service life of the product for inclusion as a basis to calculate the number of times a change is needed in the building	50 years

E) End of life

Parameter	**Parameter expressed by functional unit**
Collection processes	17,21 kg collected together with construction waste
Recycling systems	2,93 kg
Disposal	14,18 kg of material for disposal including loss of material.

5. Additional information

Technical characteristics of the product	- CE marking - Euroclass reaction to fire: A1 - Breaking strength: Group BIII ≥ 600 N - Water absorption: Group BIII E >10%
Transport and construction	- Density of load transported: 1,490 Kg/m_3 - Mortar: 1.3 kg
Use and maintenance	- Useful life (years): 50 - Maintenance and cleaning recommendations: use 0.1 kg water/wash and 0.0006 kg detergent.

	Frequency of washing indicated is once a week.
End of life	- LOW code according to European List of Waste (Directive 2000/532/EC): LOW 17 01 03 "tiles and ceramics" and LOW 17 01 07 "Mixtures of concrete, bricks, tiles and ceramics other tan those mentioned in 17 01 06"

- *Certified by the implementation of a Quality Management System that meets the requierements of ISO 9001:2008 (attached)*
- *Certified by the implementation of an Environmental Management System that meets the requierements of ISO 14001:2004 (attached)*
- *Certified by the implementation of an Energy Management System that meets the requierements of ISO 50001:2011 (attached)*
- Declaration *of Performance according to Regulation (EU) No* 305/2011*, 001-DPR-20130701 and 002-DPR-20130701 (attached)*

6. PCR and verification

This declaration is based on the document "RCP 002 Productos de revestimiento cerámico - Versión 2 – 2015.09.18." (Spanish version)

RCP 002- Productos de revestimiento cerámico V.2. was revised by the Advisory Board of the Program DAP®construcción.
Independent verification of the declaration and data, in accordance with standards ISO 14025 and UNE EN 15804 + A1 ☐ internal ☒ external
Third-party verifier: - *Ferran Pérez Ibáñez* Oficina d'Acreditació d'Entitats Col·laboradores Verificació VEDAP-001-10 ITeC
Date of verification: 18th july, 2016

References

- ANÁLISIS DE CICLO DE VIDA DE LOS PRODUCTOS: GRES PORCELÁNICO MEDIO (Bla - Blb) Y AZULEJO MEDIO (BIII). ReMa-INGENIERÍA, S.L. for PORCELANOSA. 2016 (Spanish versión - not published)

SYSTEM ADMINISTRATOR

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