

PORCELANOSA

Product family/Product

PORCELAIN STONEWARE

PORCELANOSA

PORCELAIN STONEWARE



PORCELANOSA

Floorings and Coatings

Family products
PORCELANOSA

Description







The included product is a Porcelain Stoneware (Group Bla, according to UNE EN 14411:2016 / ISO 13006:2018) and includes different families of products.

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Summarized table: Environmental parameters to which the material makes a specific contribution
Detailed in the record sheets of the respective VERDE, LEED and BREEAM environmental certificates.

Backup documents		Certificates: EPD, SCS, REACH				Self-declarations		Potential	
Plot Mobility		SRI	Rainwater management	External light control	...			SRI	Rainwater management
Energy Atmosphere		Embedded energy	Effect of greenhouse gases	Reduction in energy demand	Efficiency equipment	Other pollutant gases	Renewable energy	Embedded energy	Effect of greenhouse gases
Materials		Proven source	Pre-consumer recycled materials	Post-consumer recycled materials	Potential re-use	Certified wood	Building waste	Proven source	Pre-consumer recycled materials
Water		Consumption < reference	Water management	...				Consumption < reference	Water management
Indoor environment		Low VOC emissions	Low formaldehyde emissions	Comfort control	Lighting comfort	Acoustic comfort	Air quality	Low VOC emissions	Low formaldehyde emissions
Innovation		Innovative Design	...						

NOTES:

- The information in this compliance document with the corresponding credits of the chosen study's related environmental certification system (VERDE or LEED or BREEAM) is based on data supplied by the company. To ensure potential compliance with the said credits, in any of the certification processes, the validity of the information and details furnished by the company must be confirmed.
- This document is not a product certificate and neither does it guarantee compliance with the local legislation in force.
- The conclusions of this study are only applicable to products mentioned in this report and they are also subject to the invariability of the product's technical conditions.
- The validity of this document is conditional upon the expiry of the backup documents or variations in legislation and/or versions of the environmental certificates.
- This document provides information on the analyzed products' possible contribution to the obtainment of VERDE, LEED or BREEAM certificates.

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SUMMARY OF CREDITS

VERDE



PLOT AND SITE (PyE)

- ⇒ PyE 08, Heat island effect
- ⇒ AA 14, Heat island effect



ENERGY AND ATMOSPHERE (EA)

- ⇒ EyA 01, Heating and cooling demand



NATURAL RESOURCES (RN)

- ⇒ RN 05, Use of recycled materials
- ⇒ RN06, Use of materials obtained from Sustainable
- ⇒ RN 07, Use of local materials
- ⇒ RN 09, Impact of building materials
- ⇒ RN 10, Impacto de los materiales de construcción
- ⇒ AA 09, Life cycle analysis
- ⇒ RN 11, Eco-labeling of the product
- ⇒ AA 08, Responsible choice for materials

Environmental categories VERDE



Plot and Site



Energy and
Atmosphere



Natural
Resources



Quality of the
Environment



Quality of
Service



Social Aspects



Innovation

Certification Standards VERDE

Ω Residential
Ω Equipment
DU P
DU P

New Construction, Rehabilitation and Existing Buildings or Mixed Performances – Residential
New Construction, Rehabilitation and Existing Buildings or Mixed Performances – Equipment
Urban Polygon Developments
Desarrollos Urbanos Polígonos

CREDIT SHEET VERDE



CATEGORY PLOT AND SITE

- ◆ **PyE 08, Heat island effect**
(VERDE Residential v1.0: It can contribute up to a 1,63% of the total score)
(VERDE Equipment v1.0: It can contribute up to a 1,65 % of the total score)
- ◆ **AA 14, Heat island effect**
(VERDE DU Polygon: It can contribute up to a 2,45% of the total score)

Aim Reduce the heat island effect in urban areas by using wooded green spaces and the installation of shading elements and solar protection of accumulation surfaces.

Compliance data Below these lines, we have the SRI test rates for Porcelanosa porcelain stoneware products that may contribute to obtaining credit.

The SRI data for the type of product prepared by the ITC laboratory is indicated:

Short description	SRI (VVM) Result	Laboratory report No.
CARRARA NATURAL WHITE (4P) 59,6X59,6 (A)	78	C192742
BOTTEGA LIMESTONE 59,6X59,6 (A)	73	C192741
BOTTEGA WHITE 59,6X59,6 (A)	69	C192740
CHELSEA BONE 19,3X180	61	C184260
WHITE CHESTER 22X90	77	C184259
BOSTON BONE 43,5X65,9	58	C184258
MANHATTAN COGNAC ANT. 19,3X180	39	C174238
CHELSEA BONE ANT.	59	C171128
EXTREME WHITE 59,6X59,6	91	C164281
ARIZONA LIMESTONE ANT. 43,5X65,9	74	C163622
OXFORD CHESTNUT 22X90	41	C123035
OXFORD STEEL 22X90	50	C123035

- a) If the sum of the parcel and covered areas that meet the requirements described in the criterion is between 40 and 70% of the total area of free parcel, they will contribute 70% of the criterion score (linear distribution).

In the GREEN DU Polygons standard, to obtain 40% of the criterion score, a percentage greater than 25% of the total free area of the plot will be required to be shaded from 10:00 to 16:00, on the day June 21, or that its solar reflectance index is at least 30%.

- b) If the sum of the E-S-O façade surfaces that avoid the heat island is between 40 and 70% of the total façade surface, they will contribute the remaining 30% of the criterion score (linear distribution).

The shaded façade surface is computed at the times established in the GEA, or those with an ISR greater than 70.

**Assessment
procedure**

NA

Analysis example

For more information on the supporting documentation for the criteria, contact quality@porcelanosa.com. The documentation required for this criterion is:

- PORCELANOSA_Certificados Ensayos SRI.zip

**Backup
documents**

ASTM E1980-11 Test



CATEGORY ENERGY AND ATMOSPHERE

◆ EyA 01, Heating and cooling demand

(VERDE Residential v1.0: It can contribute up to a 6,83% of the total score)

(VERDE Equipment v1.0: It can contribute up to a 8,49 % of the total score)

Aim	Promote the reduction in energy demands for heating and cooling
Compliance data	<p>The Porcelain stoneware does not have insulating properties, however, it can contribute to improve the thermal behavior of internal and external partitions due to its thermal characteristics.</p> <p>According to ISO 10456, ceramic products with a density of 2.3 g/cm³, as are all the products analyzed in this sheet, have a thermal conductivity of 1.3 W/mK</p> <p><i>The final result of the energy simulation to determine the total points depends on the design of the building, its location, orientation, materials, definition of the envelope and the systems used.</i></p> <p>The evaluation of the building through this criterion is established based on the percentage of demand reduction in both heating and cooling, over the value required by CTE DB HE 01.</p> <p>To evaluate this criterion, it is necessary to perform an energy simulation of the target building and the reference building with HULC or some program that complies with CEN standards EN 15265-2007 or ASHRAE 140. It must also provide justification for the determination of the linear thermal transmittance of existing thermal bridges with a degree of accuracy $\pm 20\%$ and according to ISO 10212.</p> <p>For Equipment, a reduction in joint demand of 60% above that required by CTE HE1 will be considered best practice.</p> <p>For Residential use, a 60% reduction in heating demand and a 30% reduction in cooling demand will be considered best practice, compared to the limit demand defined in CTE DB HE 01. In the case of rehabilitation, it will be considered better. It practices a reduction in joint demand of 10% above that required by CTE HE1. In those cases in which the required limit demand is equal to 15 kWh/m² · year, the evaluation of the building will be carried out by complying with a series of additional measures.</p>
Assessment procedure	NA
Analysis example	-
Backup documents	UNE-EN 12667



CATEGORY NATURAL RESOURCES

◆ RN 05, Used of recycled materials

(VERDE Residential v1.0: It can contribute up to a 2,48% of the total score)

(VERDE Equipment v1.0: It can contribute up to a 1,57% of the total score)

Aim

Encourage the choice of producers with higher levels of post-consumer and pre-consumer recycled products to reduce the depletion of raw materials and the impacts associated with their extraction.

Compliance data

At Porcelanosa all the material produced has a percentage of recycled content for flooring and cladding. The recycling values are:

PRODUCT	Recycled material content [% according to formulation]
General pre-consumption pavement	6,4%
General pre-consumption coating	13,4%
General post-consumption	0%

Additionally, Porcelanosa has the ECOLOGIC® series with a content of recycled material greater than 95% verified and certified by a third party (ISO 14021). Porcelanosa's self-declaration explains that, by reprocessing and recycling the pre-consumer waste material, the need for virgin materials is reduced, avoiding the potential flow of waste and contributing to compliance with this criterion.

Assessment procedure

The evaluation of the building through this criterion is established by calculating the percentage by mass of post-consumer recycled materials plus 50% of pre-consumer recycled materials over the total materials used in the project or process. of rehabilitation of the building.

In Residential GREEN, this measure is weighted, giving 60% of the score to families of arid and stony materials and the remaining 40% to other materials. Mechanical, electrical or plumbing components, etc. are not included. and special elements such as elevators or other equipment. Only materials permanently installed in the building or plot will be considered.

As equivalent functional unit (UFE) is considered the mass in kg of the material. Under just cause, the cost of materials can be used as UFE.

Analysis example

NA

Backup documents

ISO 14021_2016_ESP_PORCELANOSA

For more information on the supporting documentation for the criteria, contact quality@porcelanosa.com. The documentation required for this criterion is:

- PORCELANOSA_AUTODECLARACIÓN DE CONTENIDO EN MATERIAL RECICLADO DE PRODUCTO_20200629

Reference standard

ISO 14.021
SCS Recycled Content Standard V7-0



CATEGORY NATURAL RESOURCES

- **RN 06 Use of materials obtained from sustainable resources**
(VERDE Residential v1.0: It can contribute up to a 1,55% of the total score)
(VERDE Equipment v1.0: It can contribute up to a 1,57% of the total score)
(VERDE DU Polygon: It can contribute up to a 1,87% of the total score)

Aim	Encourage the use of materials whose origin and extraction contemplate recognized social and environmental standards. The aim is to protect forests, avoid child exploitation and maintain standards of respect for the environment in the extraction of natural stone.
Compliance data	<p>The PORCELANOSA company offers different documents in which it certifies that all the raw materials used are processed in Castellón, that base their production strategy on the responsible and efficient management of water and that carry out a company policy actively committed to human rights, the basic rights of workers, the environment and anti-corruption.</p> <p>Up to 30% of the criterion is valued as the percentage by mass of the materials that have a document that justifies that the origin of the raw materials guarantees basic sustainability requirements.</p> <p>The documents accepted for justification will be the following:</p> <ul style="list-style-type: none"> • Global Reporting Initiative (GRI) Sustainable Report. If two different materials are provided with this type of certificate, innovation criteria may be requested. • Manufacturer's self-declaration including: place of extraction of the raw materials used in their product and responsible environmental procedures during extraction and processing. • Company policy document approved by senior management that includes the requirements for raw material distributors that comply with the basic rights of workers, including child labor and environmental respect for protected areas or areas of high ecological value. . <p>It will be valued that said percentage oscillates between 5% and 15% of the materials used.</p>
Assessment procedure	NA
Analysis example	<p>Porcelanosa Group Code of Conduct UN Global Compact Progress Report Exercise 2019</p> <p><i>For more information on the supporting documentation for the criteria, contact quality@porcelanosa.com. The documentation required for this criterion is:</i></p> <ul style="list-style-type: none"> - Porcelanosa supplier documentation
Backup documents	NA



CATEGORY NATURAL RESOURCES

◆ RN 07, Use of local materials

(VERDE Residential v1.0: It can contribute up to a 2,48% of the total score)

(VERDE Equipment v1.0: It can contribute up to a 2,51% of the total score)

Aim

Encourage the use of local materials, thus boosting the local economy and reducing the impacts due to transportation.

Compliance data

The Porcelain stoneware marketed in Spain under the PORCELANOSA brand are produced in the province of Castellón, Spain:

PRODUCT	PRODUCTION PLANT
PORCELANOSA PORCELAIN STONEWARE	PORCELANOSA, S.A. Ctra. N-340, KM 56 12540 Villarreal (Castellón) España

Assessment procedure

The evaluation of the building through this criterion is established by calculating the percentage by mass of the materials used for local production over the total materials used in the project, considering locally produced materials those whose production plant is located in a radius between 200 and 400 km from the study plot.

Materials between 0 and 200 km away from the center of the plot count 100%. Materials between 200 and 400 km away from the center of the plot compute according to a linear scale in which materials that are 200 km away compute at 100% and those that are 400 km away at 0%. For example, a material 300 km from the plot will compute at 50%.

As equivalent functional unit (UFE) is considered the mass in kg of the material. Under just cause, the cost of materials can be used as UFE.

In the case of a rehabilitation, the existing materials that are maintained after the rehabilitation are not considered

Analysis example

NA

Backup documents

For more information on the supporting documentation for the criteria, contact quality@porcelanosa.com. The documentation required for this criterion is:
- **PORCELANOSA_Certificado Origen_20200421**

Reference standard

ISO 14025 y EN UNE 15804 + A1
RCP100 - General construction products- V.2 (2016)



CATEGORY NATURAL RESOURCES

➤ RN 09, Management of construction waste

(VERDE Residential v1.0: It can contribute up to a 1,24% of the total score)

(VERDE Equipment v1.0: It can contribute up to a 1,26% of the total score)

Aim

Reduce the waste generated during the construction of the building, with the use of prefabricated and industrial elements, or by using controlled work processes that minimize the production of waste.
Only waste generated during the construction or rehabilitation phase is considered in this criterion.

Compliance data

The Porcelain stoneware produced by PORCELANOSA company presents an EPD in which the composition of the product is specified, allowing to classify the type of potential waste that it can represent on site, as well as the destination of the containers in which the products are delivered according to the place of the building.

a) Ceramic residue during construction, due to breakage and / or remaining pieces.

- Product: LER Code 10 12 08: Ceramic waste, bricks, tiles and construction materials (after the firing process)

- Destination: R5 recovery treatment, recycling or recovery of other inorganic materials

- Weight: Amount of waste per m2 of coating depending on the work.

b) Waste generated in the packaging process and transport to work

The following table specifies the weight and destination of the waste generated according to a functional unit of lining of 1 m2 of surface (wall or floor) covered with ceramic tile, for 50 years considering residential use in a geographical and technological environment in Spain.

PRODUCT	Destination	Weight (kg)
Paperboard	To incinerate	1,17E-03 kg
	To recycle	1,23E-02 kg
	To landfill	6,05E-03 kg
Pallet	To incinerate	1,33E-02 kg
	To recycle	1,24E-02 kg
	To landfill	2,54E-03 kg
Plastic	To incinerate	1,62E-05 kg
	To recycle	2,32E-05 kg
	To landfill	7,64E-05 kg

The evaluation of this criterion is established through the existence in the project phase of a Construction Waste Management Study that complies with current regulations.

PORCELANOSA PORCELAIN STONEWARE VERDE

The Construction Waste Management Study will be drawn up with the aim of guaranteeing the reuse or recycling of at least 75% (by weight or volume) of the waste generated. This aim must be guaranteed

Both in the Waste Management Plan and in the execution of the work, documents must be left to justify that this revaluation has been carried out.

The separation and classification of the waste must be carried out on site, except in those cases where a limitation of space is demonstrated such that this separation is impossible.

Assessment procedure

NA

Analysis example

DAPcons_002_016 PORCELANOSA_Gres Porcelánico Medio_[07.2016-07.2021]_ES

Backup documents

NA



CATEGORY NATURAL RESOURCES

- ◆ **RN 10, Impact of construction materials**
(VERDE Residential v1.0: It can contribute up to a 6,83% of the total score)
(VERDE Equipment v1.0: It can contribute up to a 6,92% of the total score)
- ◆ **AA 09, Life Cycle Analysis**
(VERDE DU Polygons: It can contribute up to a 8,77% of the total score)

Aim Reduce the impacts associated with the production of construction materials by choosing materials with low impacts during their extraction and transformation process, as well as by using reused and / or recycled materials.

Compliance data PORCELANOSA presents an EPD for the Porcelain stoneware. Below are some of the impacts associated with the production of 1 m2 of surface of these products that can be used to calculate the LCA of the building.

In any case, it is a partial contribution since the final result will depend on all the materials that must be included in the building's LCA

CRADLE-TO-GATE IMPACT	Abiotic resource depletion-elements	Depletion of abiotic- fossil fuel resources	Acidification potential of soil and water	Potential for depletion of the ozone layer	Global Warming Potential	Eutrophication Potential	Photochemical Ozone Formation Potential
Material (A1-A3)	kg de Sb eq.	MJ, valor calorific o neto	kg de SO2 eq.	kg de CFC11 eq.	kg de CO2 eq.	kg de PO43- eq	kg de etano eq.
Medium porcelain stoneware	1,13E-01	2,33E+02	7,03E-02	2,09E-06	13,35	8,03E-03	3,97E-02

Assessment procedure

The evaluation of the building through this criterion is established by comparing the impacts associated with the construction materials, with respect to an established reference.

The scope of study of this criterion is limited to the materials used for the envelope and the interior partitions, considering the following construction elements as such: roof, facade, interior partitions

horizontal and vertical, forged in contact with the ground, party walls and basement walls.

As a minimum, the impacts of energy incorporated into the materials and CO2 emissions generated must be considered, and at least the extraction and production phase of the materials and the construction process will be addressed.

It is also assessed that the impacts of these same indicators are considered throughout all the stages of the building's life cycle (according to EN 15978), or that the reduction of their impacts in the product phase with respect to the reference building ranges from 5 and 15%.

An extra score can be obtained if the reduction percentage of another indicator other than non-renewable primary energy or the CO2 emission of the materials in the product phase with respect to the reference building ranges between 5 and 15%.

Due to the impossibility of defining a valid reference structure for all possible buildings, it has been chosen not to include this element in the calculation of the

criterion, although if the definition of a reference structure for the particular case is justified, it can be include in the evaluation.

**Analysis
example**

NA

**Backup
documents**

DAPcons_002_016 PORCELANOSA_Gres Porcelánico Medio_[07.2016-07.2021]_ES

**Reference
standard**

*UNE-EN 15804:2012 +A1:2014 Sostenibilidad en la construcción.
Declaraciones ambientales de producto. Reglas de categoría de producto
básicas para productos de construcción.
UNE-EN 15978:2012 Sostenibilidad en la construcción.
Evaluación del comportamiento ambiental de los edificios. Métodos de cálculo
UNE-EN ISO 14040:2006. Gestión ambiental.
Análisis de Ciclo de Vida. Principios y marco de referencia.
UNE-EN ISO 14044:2006. Gestión ambiental.
Análisis de Ciclo de Vida. Requisitos y directrices.*



CATEGORY NATURAL RESOURCES

◆ RN 11, Product Ecolabelling

(VERDE Residential v1.0: It can contribute up to a 2,48% of the total score)

(VERDE Equipment v1.0: It can contribute up to a 2,51% of the total score)

◆ AA 08, Responsible choice of materials

(VERDE DU Polygons: It can contribute up to a 1,49% of the total score)

Aim	Encourage the use of Type I or Type III product ecolabelling.
Compliance data	<p>The PORCELANOSA company offers an EPD for its Porcelain stoneware products verified by a third party.</p> <p>Likewise, it also has type I labels, ECOLABEL, verified by a third party.</p> <p>The evaluation of the building through this measure is established by calculating the number of materials that have a type I and / or type III ecolabel, and in both cases these must be between 10 and 20% of the total mass of the materials used in the intervention to qualify for the minimum and maximum criteria score respectively. Said score is distributed on a linear basis, with 80% of the total being allocated for the contribution of the EPD's and the remaining 20% for providing the corresponding type I ecolabels.</p> <p>The materials that provide type III ecolabel must be found, at least, in the following families: structural elements, insulation and coatings.</p> <p>In the case of the GREEN DU Polygons scheme, the evaluation of the building through this measure is established by providing a minimum of 3 type I ecolabels of different material groups or the EPD (type III ecolabel) of at least one product.</p>
Assessment procedure	NA
Analysis example	<p><i>DAPcons_002_016 PORCELANOSA_Gres Porcelánico Medio_[07.2016-07.2021]_ES</i></p> <p><i>CERTIFICADO_EUEcolabel</i></p>
Backup documents	NA

SUMMARY OF CREDITS

LEED v4



SUSTAINABLE SITES (SS)



SS Heat island effect reduction



ENERGY AND ATMOSPHERE (EA)



EA p2, Minimum energy efficiency (prerequisite)



EA c1, Energy efficiency optimization



MATERIALS AND RESOURCES (MR)



MRp2 – MRc5, Construction and demolition waste management



MR c1, Reducing the building's life cycle impact



MR c2, Transparency and optimization of construction products - EPD



MR c3, Disclosure and optimization of Building products – Source of raw materials



INTERNAL ENVIRONMENT QUALITY (IEQ)



IEQ c2, Low emitting materials



INNOVATION IN DESIGN (ID)



ID c4, Innovation

LEED environmental categories



(LT)
Location and
Transportation



(SS)
Sustainable
Locations



(WE)
Water use
efficiency



(EA)
Energy and
atmosphere



(MR)
Materials and
Resources



(IEQ)
Quality of the
indoor
Environment



(ID) Innovation
in Design



(RP) Regional
Priority

PORCELANOSA PORCELAIN STONEWARE LEED

LEED Certification Standards (v4)

EB Existing Building
NC New Construction
CI Commercial Interiors
CS Core & Shell
SNC School New Construction
SEB School Existing Building
MRB Mid Rise Buildings

RNC Retail New Construction
REB Retail Existing Building
RCI Retail Commercial Interiors
HC Healthcare
HNC Hospitality-New Constr.
HEB Hospitality-Existing Building
HCI Hospitality-Commercial Int.

DCNC Data Center NC
DCEB Data Center EB
WNC Warehouse NC
WEB Warehouse EB
NDP Neighborhood Devel. Plan
ND Neighborhood Develop.

SUMMARY OF CREDITS

LEED v4



CATEGORY SUSTAINABLE SITES (SS)

SS Heat island effect reduction (HC, NC, CS, SNC, RNC, HNC, DCNC, WNC)

Aim Minimize the effect on microclimates and habitats for people and fauna by reducing heat islands.

Compliance data Below are the SRI test rates for Porcelanosa porcelain stoneware products that may contribute to obtaining credit.
The SRI data for the type of product prepared by the ITC laboratory is indicated:

Short description	SRI (VVM) Result	Laboratory report No.
CARRARA NATURAL WHITE (4P) 59,6X59,6 (A)	78	C192742
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WHITE CHESTER 22X90	77	C184259
BOSTON BONE 43,5X65,9	58	C184258
MANHATTAN COGNAC ANT. 19,3X180	39	C174238
CHELSEA BONE ANT.	59	C171128
EXTREME WHITE 59,6X59,6	91	C164281
ARIZONA LIMESTONE ANT. 43,5X65,9	74	C163622
OXFORD CHESTNUT 22X90	41	C123035
OXFORD STEEL 22X90	50	C123035

Option 1: Roofs:

Solutions with highly reflective finishes will be installed: SLOPE		Initial SRI*	SRI at 3 years*
Flat roof	≤16% (2:12)	82	64
Sloped roof	>16% (2:12)	39	32

Other heat island effect preventive measures:

- Use of landscaped roofs
- Use pavements with open joints or with high solar reflectance (SR)

- Shading paved areas using vegetation, renewable energy generation systems or high SR material

Option 2: Covered parking:

The cover of the parking spaces must comply with:

- SRI indicated for pitched roof in the table above
- Green roof
- Covered by power generation elements (wind turbines or solar thermal / photovoltaic panels)

EP *: Comply with options 1 and 2. Design 100% of the covered parking.

**EP- Exemplary performance: Requirements for exemplary Performance (see Design Innovation category)*

**Assessment
procedure**

N/A

**Analysis
example**

For more information on the supporting documentation for the criteria, contact quality@porcelanosa.com. The documentation required for this criterion is:

- **PORCELANOSA_Certificados Ensayos SRI.zip**

**Backup
documents**

- ASTM Standards E903 y E892: astm.org
- Cool Roof Rating Council Standard (CRRC-1): coolroofs.org



CATEGORY ENERGY AND ATMOSPHERE (EA)

- **EA p2, Minimum energy efficiency (prerequisite)**
- **EA c1, Energy efficiency optimization (credit)**
(NC, CS, SNC, RNC, HC, HNC, DCNC, WNC, CI, RCI, HCI, EB, SEB, REB, HEB,

Aim	Establish a minimum level of energy efficiency for the proposed building and the respective systems, thus reducing the environmental and economic impacts associated with excessive use of energy.
Compliance data	<p>This Porcelain stoneware does not have insulating properties; however it can contribute to improve the thermal behavior of internal and external partitions due to its thermal characteristics.</p> <p>According to ISO 10456, porcelain products with a density of 2.3 g/cm³, like all the products analyzed in this sheet, have a thermal conductivity of 1.3 W/mK</p> <p><i>The final result of the energy simulation to determine the total points depends on the design of the building, its location, orientation, materials, definition of the envelope and the systems used.</i></p> <p>Option 1: Energy simulation of the entire building. Demonstrate, through an energy simulation, the energy savings of the proposed building compared to the reference building or “baseline” (defined according to the ASHRAE 90.1-2010 standard, appendix G). (Energy costs of the proposed building versus the reference building established as a percentage of the costs of all energy systems expressed as% improvement of the proposed building)</p> <p>EA p2: Demonstrate an improvement of 5% for new construction, 3% for integral renovations, or 2% for basic and “Core and Shell” projects in the performance rating of the proposed building with respect to the reference value (baseline).</p> <p>EA c1: demonstrate a percentage improvement (between 3-50%, according to the rating system) in the performance rating of the proposed building compared to the reference building (baseline). Points are awarded between 1-20 based on percentage improvement.</p> <p>Exemplary Performance: Bonus point for savings over 54% in NC, MR, CS</p> <p>(HO) Homes: Meet the following requirements:</p> <ol style="list-style-type: none">1. Complete all mandatory Energy Star for Housing measures, version 3. Exceed the HERS or Energy Star HERS index level, required in each case2. Some of the appliances must comply with Energy Star3. All pipes must be properly executed <p>(MRD) MidRise: They must meet the requirements of energy simulation and commissioning.</p> <p>* The EA Annual Energy Use credit is associated with the scores obtained based on savings compared to the baseline.</p>

Assessment procedure	NA
Analysis example	-
Backup documents	NA





CATEGORY MATERIALS AND RESOURCES (MD)

MRp2 and MRc5, Construction and demolition waste management (NC, CS, SNC, RNC, HC, HNC, DCNC, WNC, CI, RCI, HCI, EB, SEB, REB, HEB, WEB)

Aim Separate and recycle construction waste to prevent it from reaching the landfill or incinerator.

Compliance data The Porcelain stoneware produced by PORCELANOSA presents an EPD in which the composition of the product is specified, allowing to classify the type of potential waste that it can represent on site, as well as the destination of the containers in which the products are delivered depending on the construction site.

a) Ceramic residue during construction, due to breakage and / or remaining pieces.

- Product: LER Code 10 12 08: Ceramic waste, bricks, tiles and construction materials (after the firing process)

- Destination: R5 recovery treatment, recycling or recovery of other inorganic materials

- Weight: Amount of waste per m2 of coating depending on the work.

b) Waste generated in the packaging process and transport to work

The following table specifies the weight and destination of the waste generated according to a functional unit of lining of 1 m2 of surface (wall or floor) covered with ceramic tile, for 50 years considering residential use in a geographical and technological environment in Spain.

PRODUCT	Destination	Weight (kg)
Paperboard	To incinerate	1,17E-03 kg
	To recycle	1,23E-02 kg
	To landfill	6,05E-03 kg
Pallet	To incinerate	1,33E-02 kg
	To recycle	1,24E-02 kg
	To landfill	2,54E-03 kg
Plastic	To incinerate	1,62E-05 kg
	To recycle	2,32E-05 kg
	To landfill	7,64E-05 kg

The previous waste has the potential to be recycled depending on the type of waste generated, the recycling treatment considered in the Waste Management Plan and the accredited management capacity of the Waste Manager designated on site.

In order to comply with MRp2, the project will need to incorporate a general Waste Management Plan, also incorporating the waste generated by ceramic tiles.

Assessment procedure	<p>Establish, implement and monitor a waste management plan where the% of recovery and / or recycling are incorporated. Detail the place and the procedure of management and revaluation of each material.</p> <p>Option 1. (BDC, CI) Prevent 50% or 75% of the waste from the work from ending up in the landfill or incinerator, revaluing it.</p> <p>Option 1. (EB) Prevent 70% of the waste in the work from ending up in the landfill or incinerator, revaluing it</p> <p>Option 2. Reduce the total amount of waste generated on site, below 12.2 kg/m2</p>
Analysis example	NA
Backup documents	<i>DAPcons_002_016 PORCELANOSA_Gres Porcelánico Medio_[07.2016-07.2021]_ES</i>
Reference standard	NA



CATEGORY MATERIALS AND RESOURCES (MD)

MRc1, Reducing the building's life cycle impact (NC, CS, SNC, RNC, HC, HNC, DCNC, WNC, CI, RCI, HCI, EB, SEB, REB, HEB, WEB)

Aim Extend the useful life of the building, preserve resources and cultural heritage.
Reduce waste and environmental impacts of new construction.

Compliance data PORCELANOSA presents an EPD for the Porcelain stoneware.
Below are some of the impacts associated with the production of 1 m2 of surface area of these products that can be used to calculate the LCA of the building.

In any case, it is a partial contribution since the final result will depend on all the materials that must be included in the building's LCA.

CRADLE-TO-GATE IMPACT	Abiotic resource depletion-elements	Depletion of abiotic- fossil fuel resources	Acidification potential of soil and water	Potential for depletion of the ozone layer	Global Warming Potential	Eutrophication Potential	Photochemical Ozone Formation Potential
Material (A1- A3)	kg of Sb2 eq.	MJ, net calorific value	kg of SO2 eq.	kg of CFC11 eq.	kg of CO2 eq.	kg of PO43- eq	kg of ethane eq.
Medium porcelain stoneware	1,13E- 01	2,33E+ 02	7,03E- 02	2,09E- 06	13,35	8,03E- 03	3,97E- 02

Assessment procedure

Option 4. Analysis of the building life cycle

Carry out a life cycle analysis of the building (structure and envelope) that shows a minimum of 10% reduction in the impact of the life cycle compared to the reference building. The impact of any category may be greater than 5% of the baseline.

The baseline and the project must consider a life cycle of 60 years, with the same use.

Select at least 3 of the following categories.

- global warming potential (greenhouse gases), in CO2 and ozone layer destruction, in kg CFC-11
- acidification of soil and water sources, in moles H + or kg SO2
- eutrophication, in kg nitrogen or kg phosphate
- tropospheric ozone formation, in kg NOx, kg O3 eq
- use of non-renewable energy sources, in MJ

The scope of the analysis should cover the environmental impacts of the stages that go from cradle to grave (A1 - C4)

Analysis example

NA

**Backup
documents**

DAPcons_002_016 PORCELANOSA_Gres Porcelánico Medio_[07.2016-07.2021]_ES

**Reference
standard**

NA





CATEGORY MATERIALS AND RESOURCES (MD)

MRc2, Transparency and optimization of construction products - EPD (NC, CS, SNC, RNC, HC, HNC, DCNC, WNC, CI, RCI, HCI, EB, SEB, REB, HEB, WEB)

Aim	Promote the use of materials that have information on the life cycle and environmental, economic and social impacts.				
Compliance data	<p>PORCELANOSA presents an EPD for the Porcelain stoneware. It is a self-made EPD.</p> <table border="1"> <thead> <tr> <th>PRODUCT</th><th>ECO-LABEL Type III</th></tr> </thead> <tbody> <tr> <td>Porcelain stoneware by PORCELANOSA</td><td>DAPcons®</td></tr> </tbody> </table>	PRODUCT	ECO-LABEL Type III	Porcelain stoneware by PORCELANOSA	DAPcons®
PRODUCT	ECO-LABEL Type III				
Porcelain stoneware by PORCELANOSA	DAPcons®				
Assessment procedure	<p>Option 1: Environmental Product Declaration (EPD)</p> <p>It will be necessary to provide the Environmental Product Declarations (DAP-EPD) of a minimum of 20 products, from 5 different suppliers, that meet any of the following criteria:</p> <ul style="list-style-type: none"> - Products with LCA, public and reviewed according to ISO 14044, as a minimum, covering the entire process "cradle to gate" (Valued ¼) - EPD, according to ISO 14025, 14040, 14044 and EN 15804 or ISO 21930, as a minimum, covering the entire "cradle to gate" process: EPD, industry scope (generic) (Valued ½) EPD, Type III specific product (Rated 1) 				
Analysis example	NA				
Backup documents	DAPcons_002_016 PORCELANOSA Gres Porcelánico Medio_[07.2016-07.2021]_ES				
Reference standard	<ul style="list-style-type: none"> - International Standard ISO 14021-1999, Environmental labels and declarations—Self Declared Claims (Type II Environmental Labeling): iso.org - International Standard ISO 14025-2006, Environmental labels and declarations (Type III Environmental Declarations—Principles and Procedures): iso.org - International Standard ISO 14040-2006, Environmental management, Life cycle assessment principles, and frameworks: iso.org - International Standard ISO 14044-2006, Environmental management, Life cycle assessment requirements, and guidelines: iso.org - CEN Comité Européen de Normalisation (European Committee for Standardization) EN 15804-2012 Sustainability of construction works, Environmental product declarations, Core rules for the product category of construction products: cen.eu - International Standard ISO 21930-2007 Sustainability in building construction—Environmental declaration of building products: iso.org - Federal Trade Commission, Guides for the Use of Environmental Marketing Claims, 16 CFR 260.7 (e): ftc.gov/bcp/grnrule/guides980427.htm 				



CATEGORY MATERIALS AND RESOURCES (MD)

MRc3, Disclosure and optimization of Building products – Source of raw materials (NC, CS, SNC, RNC, HC, HNC, DCNC, WNC, CI, RCI, HCI, EB, SEB, REB, HEB, WEB)

Aim

Encourage the use of products and materials for which information on the life cycle is available and that have life cycle impacts, preferably environmental, economic and social. Request project teams to select products from manufacturers who have verified that they have been removed or collected from sources responsibly.

Compliance data

Option 1

The Porcelanosa AIE Group, of which PORCELANOSA is a part, is a signatory entity to the Global Compact UN and annually reports its progress in the implementation of the 10 Principles.

Option 2

At Porcelanosa all the material produced has a percentage of recycled content for flooring and cladding. The recycling values are:

PRODUCT	Recycled material content [% according to formulation]]
General pre-consumption pavement	6,4%
General pre-consumption coating	13,4%
Post general consumption	0%

Additionally, Porcelanosa has the ECOLOGIC® series with a content of recycled material greater than 95% verified and certified by a third party (ISO 14021). Porcelanosa's self-declaration explains that, by reprocessing and recycling the pre-consumer waste material, the need for virgin materials is reduced, avoiding the potential flow of waste and contributing to compliance with this criterion.

Assessment procedure

Option 1: Report on Sources and Extraction of Raw Materials (1 point)

Use at least 20 different permanently installed products from at least five different manufacturers with an accepted report. Third-party verified Corporate Sustainability Report (ISC) products that include environmental impacts from mining operations and activities associated with the manufacturer's products and the product supply chain are valued as a single product for calculating achievement of credit. Acceptable ISC frameworks include the following:

- Sustainability Report (Global Reporting Initiative) (GRI)
- Guidelines for Multinational Enterprises of the Organization for Economic Cooperation and Development (OECD)
- UN Global Compact: Communication on Progress
- ISO 26000: Guidelines on Social Responsibility
- USGBC Approved Program: Other USGBC approved programs that meet ISC criteria.

EP * Option 1: Install 40 products (from at least 5 manufacturers) that meet the requirements

Option 2: Extraction Leadership Practices (1 point)

Use products that meet at least one of the responsible extraction criteria listed below for at least 25%, by cost, of the total value of construction products permanently installed in the building. The materials of the structure and the enclosure cannot constitute more than 30% of the value of the building's compliant products:

- Extended responsibility to the producer.
- Biologically based materials.
- Wood products.
- Reuse of materials.
- Contained in recycled materials.
- USGBC approved program.

EP * Option 2: Use products that meet at least one of the abovementioned responsible extraction criteria for at least 50%, by cost, of the total value of construction products permanently installed in the building.

**Analysis
example**

NA

**Backup
documents**

***Progress report on the UN global compact exercise 2019.
Certificate of adherence to the Global Compact UN***

ISO 14021_2016_ESP_PORCELANOSA

For more information on the supporting documentation for the criteria, contact quality@porcelanosa.com. The documentation required for this criterion is:

***- PORCELANOSA_AUTODECLARACIÓN DE CONTENIDO EN MATERIAL
RECICLADO DE PRODUCTO_20200629***

**Reference
standard**

- - SCS Recycled Content Standard V7-0 (voluntario)
- - U.N. Global Compact, Communication of Progress: unglobalcompact.org/cop/



CATEGORY INTERNAL ENVIRONMENT QUALITY (IEQ)

IEQ c2, Low emitting materials (NC, CS, SNC, RNC, HC, HNC, DCNC, WNC, CI, RCI, HCI, EB, SEB, REB, HEB, WEB)

Aim Reduce concentrations of chemical pollutants that can harm air quality, occupant health and productivity, as well as the environment.

Compliance data *Ceramic products, as indicated in the LEED guide, are inherently non-emitting sources.*

Products that are inherently non-VOC sources (stone, ceramic, powder coated metals, plated or anodized metal, glass, concrete, clay brick, and unfinished or untreated solid wood floors) are considered fully compatible without any evidence of VOC emissions if they do not include organic organic products, surface coatings, binders or sealants

Therefore, the Porcelanosa Porcelain stoneware directly meets this criterion without the need to provide any specific documentation.

The aim of this credit is the use of products for the construction of the building, with very low emissions of Volatile Organic Compounds.

Products are required to meet the following requirements: There are two credit fulfillment options:

- **Option 1. Calculations by product category:** defines various product categories and awards points according to the number of categories that meet the low VOC emission requirements.
- **Option 2. Average calculation:** If any product in any category does not meet the criteria, option 2 can be used to perform a weighted calculation and compute the partial compliance of several categories.

Option 1. Calculations by product category

TABLE 1. Thresholds of compliance with emissions and content standards for 7 categories of materials		
Category	Threshold	Emissions and content requirements
Interior paints and coatings applied on site	At least 90%, by volume, for emissions; 100% for VOC content	<ul style="list-style-type: none"> General Emissions Evaluation for paints and coatings applied to walls, floors, and ceilings VOC content requirements for wet applied products
Interior adhesives and sealants applied on site (including flooring adhesive)	At least 90%, by volume, for emissions; 100% for VOC content	<ul style="list-style-type: none"> General Emissions Evaluation VOC content requirements for wet applied products
Flooring	100%	General Emissions Evaluation
Composite wood	100% not covered by other categories	Composite Wood Evaluation
Ceilings, walls, thermal, and acoustic insulation	100%	<ul style="list-style-type: none"> General Emissions Evaluation Healthcare, Schools only Additional insulation requirements
Furniture (include in calculations if part of scope of work)	At least 90%, by cost	Furniture Evaluation
Healthcare and Schools Projects only: Exterior applied products	At least 90%, by volume	Exterior Applied Products

Option 2. Average calculation

Categories included (6): floors, ceilings, partition walls, acoustic and thermal insulation, furniture.

According to the % of surface with respect to the total that meets the requirements: > 50%

- <70% (1p); 70% - <90% (2p); > 90% (3p)

- a) **Inherently non-emissive materials:** (stone, ceramic, raw or anodized metals, glass, etc.)
- b) **General assessment of emissions:** Products must be tested according to one of the following standards:
 - (1) CDPH Standard Method V1.1-2010
 - (2) German AgBB Testing and Evaluation Scheme (2010)
 - (3) ISO 16000-3:2010, ISO 16000-6:2011, ISO 1600-9:2006, ISO 16000-11:2006 (AgBB o normativa Francesa)
 - (4) DIBt testing method (2010)
- c) **Additional requirements for wet-applied products:** In addition to complying with the previous requirements, they must comply with the following VOC contents, provided by the manufacturer and tested according to the following standards:

Non-US project: all paints, coatings, adhesives and sealants must comply with the maximum values allowed by the Decopaint Directive 2004/42 / EG

Assessment procedure

NA

Analysis example

-

Backup documents

- CDPH Standard Method v1.1–2010: cal-iaq.org
- ISO 17025, ISO Guide 65 e ISO 16000 partes 3, 6, 7, 11: iso.org
- AgBB-2010: umweltbundesamt.de/produkte-e/bauprodukte/agbb.htm
- South Coast Air Quality Management District (SCAQMD) Rule 1168 y Rule 1113: aqmd.gov
- European Decopaint Directive 2004/42/EG
ec.europa.eu/environment/air/pollutants/stationary/paints/paints_legis.htm
- Canadian VOC Concentration Limits for Architectural Coatings: ec.gc.ca/lcpe-cepa/eng/regulations/detailReg.cfm?intReg=117
- Hong Kong Air Pollution Control Regulation:
epd.gov.hk/epd/english/environmentinhk/air/air_maincontent.html
- CARB 93120 ATCM: arb.ca.gov/toxics/compwood/compwood.htm
- ANSI/BIFMA M7.1 Standard Test Method for Determining VOC Emissions
- from Office Furniture Systems, Components and Seating y ANSI/BIFMA e3–2011 Furniture Sustainability Standard: bifma.org



CATEGORY INNOVATION IN DESIGN (ID)



ID c2, Innovation

(NC, CS, SNC, RNC, HC, HNC, DCNC, WNC, CI, RCI, HCI, EB, SEB, REB, HEB, WEB)

Aim

Reward projects that achieve exceptional or innovative performance in meeting LEED requirements.

Compliance data

Porcelanosa's Porcelain stoneware may contribute to meet the Exemplary Performance requirements of the following credits:

- MR c2, Transparency and optimization of construction products - EPD
- MRc3, Revelation and optimization of building products - Sources of raw materials
- IEQ c2, Low Emission Materials

Option 3. Exemplary Performance (EP): Possibility of obtaining an extra point for Exemplary Performance (EP) in case of exceeding the requirements of certain credits.

Assessment procedure

NA

Analysis example

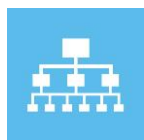
Look criteria

Backup documents

NA

SUMMARY OF CREDITS

BREEAM



MANAGEMENT

- ◆ GST 3, Impact of the Building areas
- ◆ GST 5, Building lifecycle cost and service life planning



HEALTH & WELLBEING

- ◆ SYB 2, Indoor air quality



ENERGY

- ◆ ENE 1, Energy efficiency
- ◆ ENE 19, Building thermal envelope



MATERIALS

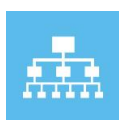
- ◆ MAT 1, Life Cycle Impacts
- ◆ MAT 3, Responsible sourcing of materials
- ◆ MAT 8, Materials with low environmental impact



WASTE

- ◆ RSD 1, Construction waste management

BREEAM ES Environmental categories



Management



Health and Wellbeing



Energy



Transport



Water



Materials



Waste



Land use and ecology



Contamination



Innovation

BREEAM ES Certification Standards

URB
NC

BREEAM ES Urbanism
BREEAM ES New Construction

VIV

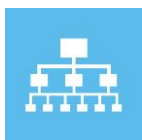
BREEAM ES Housing

USO

BREEAM ES In Use

SUMMARY OF CREDITS

BREEAM ES



CATEGORY MANAGEMENT

GST 3, Impact of the Building areas (NC y VIV)

Aim Recognize and promote that the management of the works areas is carried out in an environmentally friendly way in terms of resource use, energy consumption and pollution. Criteria that affect;
- Transportation of construction materials and waste

Compliance data In relation to transport, the Porcelain stoneware marketed by PORCELANOSA are manufactured in its production facilities in Villarreal (Castellón-Spain).

PRODUCT	PRODUCTION PLANT
PORCELANOSA Porcelain stoneware	PORCELANOSA, S.A. Ctra. N-340, KM 56 12540 Villarreal (Castellón) España

All the raw materials used to make the Porcelain stoneware have been processed in Castellón. The transport of merchandise is always carried out by road and the most common means of transport is the truck. However, the ship is also used (USA, Australia, Far East).

Transportation of construction materials and waste (one point)

The evaluation of the building using this criterion is established by indicating, in an independent report, the total fuel consumption (liters), the total emissions of carbon dioxide (kgCO₂ equivalent emissions) associated with transport, and the total distance traveled (km) even the building itself.

Assessment procedure

NA

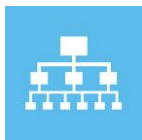
Analysis example

For more information on the supporting documentation for the criteria, contact quality@porcelanosa.com. The documentation required for this criterion is:

- **PORCELANOSA_Certificado Origen_20200421**

Backup documents

UNE-EN 15643-4:2012
UNE-EN 15978:2012



CATEGORY MANAGEMENT

GST 5, Building lifecycle cost and service life planning (NC)

Aim Recognize and drive life cycle costing and life planning for informed decision-making regarding design, specifications, operation, and maintenance throughout the life of the building. Reference: BREEAM ES NEW CONSTRUCTION 2015

Compliance data The Porcelain stoneware produced by PORCELANOSA presents an EPD in which the maintenance that it must have in the maintenance phase of the building is specified.

Maintenance (B2)

Cleaning is done with a damp cloth, and if the surface is dirty or greasy, cleaning agents such as detergents or bleach can be added. In the present study, the consumption of water and disinfectant has been considered 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, frequency 1 time / week.

Tabla 3. Escenarios para el mantenimiento de 1 m² de producto gres medio

Productos de limpieza	Escenario 1
Agua (kg/lavado)	0,1
Detergente (kg/lavado)	0,0006
Frecuencia de lavado (nº de veces/semana)	1

Assessment procedure

1 point

A life cycle cost (LCC) analysis has been carried out based on the proposals developed during the preliminary project or basic project and implementation phases.

2 points

The CCV analysis shows that the elements of at least two of the following building components have been analyzed from a strategic and systemic level comparing alternative options.

The options meet the performance criteria of the building (i.e. realistic options are used in comparisons) and preference is given to the lowest updated CCV during the period, assuming that their selection will generate at least one of the results following:

- to. Lower energy consumption of the building over its lifetime compared to other options or alternatives discussed (see "Additional Notes" NA2).
- b. A reduction in the demands and frequency of maintenance.
- c. An increase in the useful life of the infrastructure and systems of the facilities or the structure of the building, which will lead to a decrease in the replacement intervals.
- d. Dismantling and recycling or reuse of building components.

3 points

The analysis collected in the first point of the CCV has been updated during the execution and construction project phases.

The results of the analysis have been applied in the specifications, design and final construction of the evaluated building.

A maintenance strategy has been developed, based on the analysis of the CCV.

**Analysis
example**

NA

**Backup
documents**

DAPcons_002_016 PORCELANOSA_Gres Porcelánico Medio_[07.2016-07.2021]_ES

**Reference
standard**

*UNE-EN 15643-4:2012
UNE-EN 15978:2012*



CATEGORY HEALTH AND WELLBEING

SYB 2, Indoor air quality (NC)

Aim	Recognize and encourage a healthy internal environment by specifying and installing adequate ventilation systems, equipment and finishes. Reference: BREEAM ES NEW CONSTRUCTION 2015
Compliance data	<p>Ceramic products, as indicated in the LEED guide, are inherently non-emitting sources.</p> <p><i>Products that are inherently non-VOC sources (stone, ceramic, powder-coated metals, plated or anodized metal, glass, concrete, clay brick, and unfinished or untreated solid wood floors) are considered fully compatible without any evidence of VOC emissions if they do not include organic products, surface coatings, binders or sealants</i></p> <p>Therefore, the Porcelanosa Porcelain stoneware allows to collaborate in a neutral way to a concentration measurement of total volatile organic compounds in the building..</p>
Assessment procedure	<p>One point: ventilation and Indoor Air Quality Control and Prevention Plan (PPCAI)</p> <p>One point: emission levels of Volatile Organic Compounds (VOCs) (products)</p> <p>The manufacturer confirms that the decorative paints and varnishes and five of the products (A-H) in Table 13 of the manual meet the criteria set forth in said Table. If four or fewer products are specified for the building, all of them must meet the criteria to obtain this point.</p> <p>One point: emission levels of volatile organic compounds (VOCs) (post-construction)</p> <p>During post-construction, formaldehyde concentration levels have been measured and the results have revealed an average concentration of less than or equal to 100 µg / m³ for 30 minutes (WHO Guidelines).</p> <p>During the post-construction, the concentration of total volatile organic compounds (VOCs) has been measured and the results have revealed a concentration of less than 300 µg / m³ for 8 hours.</p>
Analysis example	NA
Backup documents	-
Reference standard	<p>UNE-EN 13779</p> <p>UNE-EN 14175 (Serie).</p> <p>UNE-EN 12469:2001.</p> <p>UNE-EN ISO 14644-2: 2001.</p>



CATEGORY ENERGY

ENE 1, Energy efficiency (NC)

Aim	Recognize and promote buildings that minimize operational energy consumption through proper design. Reference: BREEAM ES NEW CONSTRUCTION 2015
Compliance data	<p>This Porcelain stoneware does not have insulating properties, however, it can contribute to improving the thermal behavior of internal and external partitions due to its thermal characteristics.</p> <p>According to ISO 10456, porcelain products with a density of 2.3 g / cm³, like all the products analyzed in this sheet, have a thermal conductivity of 1.3 W / m K.</p> <p><i>The final result of the energy simulation to determine the total points depends on the design of the building, its location, orientation, materials, definition of the envelope and the systems used.</i></p>
Assessment procedure	<p>Criterion (up to 15 points)</p> <p>The energy efficiency of the building is calculated from the design information through the methodology approved by the Ministry of Industry, Energy and Tourism for energy calculation (modeling). The number of points obtained is based on efficiency planned energy for the evaluated building as opposed to that of a weighted reference building.</p> <p>Exemplary (5 points)</p> <p>The modeled building demonstrates that it is a "Positive Energy Balance (EB +) Building" by showing zero operating energy consumption.</p> <p>Exemplary (up to 4 points)</p> <p>The building achieves 15 points, that is, zero net CO₂ emissions and the modeled building achieves an equivalent percentage of the Energy consumption of Installations, as shown in Table 1. This is generated through carbon neutral installations at the site or nearby, or through accredited renewable energy allowing to meet the demand for Energy from Equipment attached to the building's system.</p>
Analysis example	NA
Backup documents	-
Reference standard	NA



CATEGORY ENERGY

ENE 19, Building thermal envelope (VIV)

Aim Recognize and promote measures to improve the efficiency of the thermal envelope of residential buildings. Reference: BREEAM ES NEW CONSTRUCTION 2015

Compliance data This Porcelain stoneware does not have insulating properties, however, it can contribute to improving the thermal behavior of internal and external partitions due to its thermal characteristics.

According to ISO 10456, porcelain products with a density of 2.3 g / cm³, like all the products analyzed in this sheet, have a thermal conductivity of 1.3 W / m K.

The final result of the energy simulation to determine the total points depends on the design of the building, its location, orientation, materials, definition of the envelope and the systems used.

Assessment procedure

Criterion (up to 2 points)

The energy efficiency of the building is calculated from the design information through a computer program approved by the Ministry of Industry, Energy and Tourism for energy calculation (modeling).

The number of points obtained is based on the percentage improvement over the requirements of the National Method of Calculation of energy demand for heating and cooling detailed below.

POINTS	NEW CONSTRUCTION	REHABILITATION
1	10%	5%
2	20%	10%

Analysis example NA

Backup documents -

Reference standard NA



CATEGORY MATERIALS

MAT 1, Life Cycle Impacts (NC)

Aim Recognize and promote the use of robust and appropriate tools for life cycle analysis and, consequently, the specification of construction materials with a low environmental impact (also in terms of incorporated carbon) throughout the life cycle of the building. Reference: BREEAM ES NEW CONSTRUCTION 2015

Compliance data PORCELANOSA presents an EPD for the Porcelain stoneware. Below are some of the impacts associated with the production of 1 m² of surface area of these products that can be used to calculate the LCA of the building.

In any case, it is a partial contribution since the final result will depend on all the materials that must be included in the building's LCA.

CRADLE-TO-GATE IMPACT	Abiotic resource depletion-elements	Depletion of abiotic- fossil fuel resources	Acidification potential of soil and water	Potential for depletion of the ozone layer	Global Warming Potential	Eutrophication Potential	Photochemical Ozone Formation Potential
Material (A1- A3)	kg of Sb ₂ eq.	MJ, net calorific value	kg of SO ₂ eq.	kg of CFC11 eq.	kg of CO ₂ eq.	kg of PO ₄ ³⁻ eq.	kg of ethane eq.
Medium porcelain stoneware	1,13E-01	2,33E+02	7,03E-02	2,09E-06	13,35	8,03E- 03	3,97E-02

Assessment procedure

Option 1 (1 point)

Products with Environmental Product Declarations (EPD) have been specified in at least 30% of the categories: Ceramics, Stone
Note: The EPD must cover at least 80% of the products in each category (by volume).

Option 2 (1 to 6 points)

The project uses a life cycle analysis (LCA) tool to measure the environmental impact of the life cycle of building elements.

Analysis example

NA

Backup documents

DAPcons_002_016 PORCELANOSA_Gres Porcelánico Medio_[07.2016-07.2021]_ES

Reference standard

UNE-EN 15804:2012
UNE-EN 15978:2012.



CATEGORY MATERIALS

MAT 3, Responsible sourcing of materials (NC, VIV)

Aim

Recognize and promote the specification of materials for the main elements of the building whose supply has been carried out responsibly. Reference: BREEAM ES NEW CONSTRUCTION 2015

Compliance data

The PORCELANOSA production center that manufactures the Porcelain stoneware has ISO14001, therefore, it meets the requirements of this criterion with a certification level of 3 (key process). Additionally, at Porcelanosa all the material produced has a percentage of recycled content for flooring and cladding. The recycling values are:

PRODUCT	Recycled material content [% according to formulation]
General pre-consumption pavement	6,4%
General pre-consumption coating	13,4%
Post general consumption	0%

Furthermore, Porcelanosa has the ECOLOGIC® series with a content of recycled material greater than 95% verified and certified by a third party (ISO 14021). Porcelanosa's self-declaration explains that, by reprocessing and recycling pre-consumer waste material, the need for virgin materials is reduced, avoiding the potential flow of waste and contributing to compliance with this criterion.

Assessment procedure

Responsible sourcing (up to 3 points)

Each of the applicable materials that have been specified as part of the main construction elements has been assigned a responsible sourcing certification level and the relevant points have been awarded accordingly.

Tabla 34: Niveles de certificación de aprovisionamiento responsable y puntos MAT 3 disponibles

Nivel de certificación	Puntos
1	3,0
2	2,0
3	1,5
4	0

The BREEAM ES MAT 3 Calculator must be used to obtain the final score.

NA

Analysis example

ISO 14001_2015 ESP
ISO 14021_2016_ESP_PORCELANOSA

For more information on the supporting documentation for the criteria, contact quality@porcelanosa.com. The documentation required for this criterion is:

- ***PORCELANOSA_AUTODECLARACIÓN DE CONTENIDO EN MATERIAL RECICLADO DE PRODUCTO_20200629***

**Backup
documents**

NA



CATEGORY MATERIALS

MAT 8, Materials with low environmental impact (VIV)

Aim	Recognize and encourage the use of construction materials with a low environmental impact on the entire life cycle of the building. Reference: BREEAM ES VIVIENDA 2011
Compliance data	Porcelanosa's Porcelain stoneware products have an EPD verified by a third party.
Assessment procedure	<p>1 point</p> <p>Up to 5 points can be achieved if it is demonstrated that the main components of the following elements contain products and materials that have environmental labels and declarations or that, for the prescription of materials, a Life Cycle Analysis tool is used:</p> <ul style="list-style-type: none"> a. Cover b. Facades c. Vertical Interior Partitions and Partitions d. Structures (including Slabs) and. Windows F. Isolations g. Urbanization and Closings <p>Example</p> <p>Use of a LCA tool to evaluate a range of building material options with which the design team can demonstrate that the result of such evaluation has positively influenced the design options of 6 of the building elements.</p>
Example of analysis	NA
Backup documents	<i>DAPcons_002_015 PORCELANOSA_Azulejo Medio_[07.2016-07.2021]_ES</i>
Aim	
Reference standard	<p>UNE-EN 15804:2012</p> <p>UNE-EN 15978:2012</p>



CATEGORY WASTE

RSD 1, Construction waste management (NC, VIV)

Aim Encourage resource efficiency through effective and appropriate management of construction waste. Reference: BREEAM ES NEW CONSTRUCTION 2015

Compliance data The Porcelain stoneware produced by PORCELANOSA presents an EPD in which the composition of the product is specified, allowing to classify the type of potential waste that it can represent on site, as well as the destination of the containers in which the products are delivered depending on the construction site.

a) Ceramic residue during construction, due to breakage and / or remaining pieces.

- Product: LER Code 10 12 08: Ceramic waste, bricks, tiles and construction materials (after the firing process)
- Destination: R5 recovery treatment, recycling or recovery of other inorganic materials
- Weight: Amount of waste per m2 of coating depending on the work.

b) Waste generated in the packaging process and transport to work

The following table specifies the weight and destination of the waste generated according to a functional unit of lining of 1 m2 of surface (wall or floor) covered with ceramic Tile, for 50 years considering residential use in a geographical and technological environment in Spain.

PRODUCT	Destination	Weight (kg)
Paperboard	To incinerate	1,17E-03 kg
	To recycle	1,23E-02 kg
	To landfill	6,05E-03 kg
Pallet	To incinerate	1,33E-02 kg
	To recycle	1,24E-02 kg
	To landfill	2,54E-03 kg
Plastic	To incinerate	1,62E-05 kg
	To recycle	2,32E-05 kg
	To landfill	7,64E-05 kg

Assessment procedure

Efficiency of construction resources (up to 2 points)

The amount of waste generated per 100 m2 (built area) or m3 (in the case of the actual volume of waste, not the apparent volume), or the tons derived from the construction process, must be documented, using the Assessment Tool BREEAM ES.

Procedures have been implemented for the classification, reuse and recycling of construction waste for at least the waste fractions identified in the legislation on or off-site through an authorized external waste manager.

Landfill resource diversion (1 point)

A significant amount of non-hazardous demolition (where applicable) and construction waste generated in the project has been diverted from the landfill according to the figures included in the Table below

PRODUCT	ONE POINT	NIVEL EJEMPLAR
	BREEAM ES target rates for landfill diversions	
The national recovery rate for construction and demolition waste is 70% (by weight)	≥ 10% improvement over the national rate	≥ 25% improvement over the national rate

Analysis example

NA

Backup documents

DAPcons_002_016 PORCELANOSA_Gres Porcelánico Medio_[07.2016-07.2021]_ES

Reference standard

NA