# Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

## Porcelain stoneware (thickness 12-20mm)

from

## Ceramica del Conca S.p.a.

| | |
|---|---|
| Programme: | The International EPD System, www.environdec.com |
| Programme operator: | EPD International AB |
| Type of EPD: | EPD of multiple products from a company |
| EPD registration number: | EPD-IES-0025801 |
| Version date: | 2025-09-15 |
| Validity date: | 2030-09-14 |
| | *An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com* |

EPD of multiple products, based on the average results of the product group. This EPD covers multiple products listed in page 5. Each product included in this EPD is a collection of different color variants. The results for the environmental performance indicators declared in this EPD correspond to the average results of the product group

# GENERAL INFORMATION

| Programme Information | |
|---|---|
| **Programme:** | The International EPD® System |
| **Address:** | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm<br>Sweden |
| **Website:** | www.environdec.com |
| **E-mail:** | support@environdec.com |

| Product Category Rules (PCR) |
|---|
| **CEN standard EN 15804 serves as the Core Product Category Rules (PCR)** |
| ***Product Category Rules (PCR): CONSTRUCTION PRODUCTS PCR 2019:14 VERSION 2.0.1*** |
| **PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. The review panel may be contacted via the Secretariat www.environdec.com/contact.** |
| ***c-PCR to PCR 2019:14: CERAMIC TILES (EN 17160:2019) - PRODUCT GROUP CLASSIFICATION: UN CPC 373 / 373 - C-PCR-002 (TO PCR 2019:14)*** |

| Third-party Verification |
|---|
| Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:<br><br>☒ **Individual EPD verification without a pre-verified LCA/EPD tool**<br>Third-party verifier: Marcel Gomez Ferrer<br>Marcel Gómez Consultoria Ambiental, info@marcelgomez.com<br>Phone: +34 630 64 35 93 - Email: info@marcelgomez.com<br>Approved by: International EPD System |
| Procedure for follow-up of data during EPD validity involves third party verifier:<br><br>☐ Yes ☒ No |

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

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.

For further information about comparability, see EN 15804 and ISO 14025.

# INFORMATION ABOUT EPD OWNER

Owner of the EPD: Ceramica del Conca S.p.a.
Address: Via Croce 8, San Clemente, Rimini, Italia
Contact: Francesca Borghi, f.borghi@delconca.com
Address and contact information of the LCA practitioner commissioned by the EPD owner, if applicable: Esalex srl, www.esalex.eu, info@esalex.eu
Description of the organisation: Ceramica del Conca was born in 1979 on the initiative of an entrepreneurship matured in the construction field in Italy and abroad, new to the world of ceramic tiles, but sensitive to the technological evolutions, to the design and to the market expectation. Ceramica del Conca was among the first companies in ceramic sector to believe in glazed single-firing on white ceramic stoneware. After the important investments of the recent years, the company is now able to satisfy all aesthetic, quality and design needs.
The products represent a sophisticated mix of wood, stone marble, concrete, terracotta, metal surfaces effects, available in a multitude of formats and different thickness.
Ceramica del Conca belongs to the Del Conca Group, that includes four manufacturing companies, Ceramica Faetano, Ceramica del Conca, Pastorelli and Del Conca USA, one commercial corporations, Produco and one foundation, the Cino Mularoni Foundation. Pastorelli S.p.A. joined the Group in 2004 and in 2016 it merged with Ceramica del Conca Spa, but retained its brand and its commercial autonomy. The factory in Savignano sul Panaro underwent a complete renovation in 2017, making it one of the Group's crown jewels.

More information: www.delconca.com

Name and location of production site:
Ceramica del Conca S.p.A.
Via Magazzeno, 1944, Savignano sul Panaro (MO), Italy
T. +39 0549 996037
info@delconca.com

# PRODUCT INFORMATION

Product name: Glazed porcelain stoneware.

Product identification: Ceramic tiles with a thickness between 12 and 20mm.

Visual representation (e.g., an image) of the product

UN CPC code: **3731** Bricks, blocks, tiles and other ceramic goods of siliceous earths / **3737** Ceramic flags and paving, hearth or wall tiles; ceramic mosaic cubes and the like.

Product description: The products are tile for internal and external application. The raw material mixture and the productive process are the same for all products studied. The difference from a

product to another is determined by the thickness (12 or 20 mm), the mix of colours and the possible adding of a fibreglass supporting net ( only for large format tiles)

Series included in the study are:

| | | | |
|---|---|---|---|
| ALCHIMIA (HLC) | SOUL (HSU) | TERRE GARZATE (TG) | arabescato corchia |
| AURORA (HAU) | STELVIO (HSV) | VALENTINA (BG) | borghini |
| ANVERSA (HAV) | STONE EDITION (HSE) | ARKE' | black tempest |
| BIOTERRE (HBE) | ST.REGIS (SR) | AXEL | calacatta matarazzo |
| BLUE QUERRY (HBQ) | TIMELINE (HTL) | AYERS ROCK | concrete graphite |
| BOUTIQUE (HBO) | TREVI (HTE) | BIOPHILIC | concrete white |
| BURMA (BU) | UPGRADE (HUP) | COCOONING | gold laurent |
| CARPEGNA (HRN) | VIGNONI (HVG) | COLORFUL | limestone Ivory |
| CLIMB (HCL) | WILD (HWD) | DENVERSTONE | pietra di Fez |
| DA VINCI (HDV) | OUTDOOR (OD) | EVERYDAY | Portland |
| DECO STUDIO (HDS) | AMARCORD (ST) | FIRENZE | superwhite |
| ENGADINA (HEG) | BELLAGIO (BG) | FREESPACE | travertino classico |
| FORUM (HFR) | CALLIOPE (TR) | ICONS | Atlantic grey |
| FUTURA (HFT) | CANDY (CY) | LEVANTE | Black marquinia |
| FORESTE D'ITALIA (FI) | CANTINA (CA) | KOMI | calacatta gold |
| GALESTRO (HGT) | DIMORE (DI) | MILANO CITY | calacatta supreme |
| GARDENA (HGR) | ESPRESSIONE (ES) | MINDWALK | concrete light grey |
| LAVAREDO (HLA) | FELIX (PR/SN) | NEW CLASSIC | fior di bosco |
| MARBLE EDITION (HME) | FRAMMENTI (FR) | QUARZ DESIGN | imperial brown |
| MONTEVERDE (MN) | GIVERNY (BS) | RECODE | macchia vecchia |
| NABI (NB) | LONDON (LD) | SENTIMENTO | pietra grey |
| NAT (HNT) | LUPIN (BG/KN) | SHADE | statuario |
| NATIVE (NI) | MANUFATTI (MI) | STONES DU MONDE | taj Mahal |
| NESTING (HNS) | MILO MANARA (BG) | SUNSHINE | arabescato corchia |
| PREMIERE (HPR) | MUSIVA (MV) | V.360 | borghini |
| QUARTZ (HQZ) | PARIS (PR/SN) | VANGUARD | black tempest |
| ROCKSTAR (HRT) | PROGETTO 1962 (PO) | YOURSELF | calacatta matarazzo |
| SENSORIA (HSO) | SORRENTINA (SN) | WI.SH | concrete graphite |

Technical specification:

| REFERENCE AREA | CHARACTERISTICS | REGULATION | REQUIRED VALUES | | PERFORMANCE |
|---|---|---|---|---|---|
| Dimensional standard | Length and Width | ISO 10545-2 | 0,6% | ± 2,0 mm | Conforming |
| | Straightness | ISO 10545-2 | 0,5% | ± 1,5 mm | Conforming |
| | Orthogonality | ISO 10545-2 | 0,5% | ± 2,0 mm | Conforming |
| | Curvature in the Centre | ISO 10545-2 | 0,5% | ± 2,0 mm | Conforming |
| | Curvature at the Edges | ISO 10545-2 | 0,5% | ± 2,0 mm | Conforming |
| | Warpage | ISO 10545-2 | 0,5% | ± 2,0 mm | Conforming |
| | Thickness | ISO 10545-2 | 5% | ± 0,5 mm | Conforming |
| | Surface quality | ISO 10545-2 | Minimum 95% | | Conforming |
| Mechanical Standards | Water absorption | ISO 10545-3 | Maximum 0,5% | | ~ 0.1% |
| | Breakup module | ISO 10545-4 | > 35 N/mm2 | | Conforming |
| | Breaking load | ISO 10545-4 | > 1300 N | | Conforming |
| | Impact resistance | ISO 10545-5 | Declared value | | ~ 0.89 (COR) |
| | Linear thermal expansion | ISO 10545-8 | Declared value | | α = ~ 6.4x10-6 °C-1 |
| | Thermal shock resistance | ISO 10545-9 | Pass | | Conforming |
| | Water expansion | ISO 10545-10 | Declared value | | ~ 0.04 mm/m |
| | Glaze crazing resistance | ISO 10545-11 | Pass | | Conforming |
| | Frost resistance | ISO 10545-12 | Pass | | Conforming |
| | Chemical attack resistance | ISO 10545-13 | GB class minimum | | Conforming |
| | Deep abrasion | ISO 10545-6 | <175mm$^3$ | | 135 mm$^3$ |
| | MOHS | Declared value | | | Mohs ≥6 |

| | | | | |
|---|---|---|---|---|
| | Stain resistance | ISO 10545-14 | Minimum class 3 | Conforming |
| | Fire Resistance – Flooring | EN 13823 | / | A1fl class (No reaction) |
| | Fire Resistance – Coating | EN 13823 | / | A1 class (No reaction) |
| | VOC | / | / | No VOC |

Name and location of production site(s): Ceramica del Conca S.p.A. Via Magazzeno, 1944, Savignano sul Panaro (MO), Italy.

Geographical scope: Global
The pretended communication of the EPD is B2B and B2C.

More information: www.delconca.com

EPD shall not include rating, judgements, or direct comparisons with other products or companies. "Other products" include previous or alternative versions of the studied product, i.e., the EPD shall not display changes in the environmental performance results of a product over time, or differences with regard to a hypothetical version of the product using, e.g., alternative production processes or input materials.
"Other companies" means that the EPD shall not in any way imply that the EPD owner is, for example, "a market leader" or "more sustainable" (or similar) compared to its competitors.

# CONTENT DECLARATION

The composition presented in the table below is for a weighted averaged product (weight of 44,46 kg) with a thickness of 12 or 20mm and it is the same for all products studied. The weight of minimum product is 30 kg (thickness 12 mm) and the weight of maximum product is 51,39 kg (thickness 20 mm). The variation of impacts is presented as additional information.

| Product components | Weight, % | Post-consumer material, weight-% | Biogenic material, weight-% and kg C/kg |
|---|---|---|---|
| Clay, feldspar, sand, kaolin | 94,946 | 0 | 0 |
| Chamotte | 0,585 | 0 | 0 |
| Dough pigments | 0,159 | 0 | 0 |
| Compound/glazes/frits/pigments | 2,529 | 0 | 0 |
| Additional raw material | 0,134 | 0 | 0 |
| Dough additives | 1,328 | 0 | 0 |
| Glazes additives | 0,318 | 0 | 0 |
| Fiberglass net | 0,011 | 0 | 0 |
| **Total** (kg) | 44,46 | 0 | 0 |

| Packaging materials | Weight, kg | Weight-% (versus the product) | Weight biogenic carbon, kg C/kg |
|---|---|---|---|
| Wood | 1,25E+00 | 2,82% | 5,83E-01 |
| Cardboard | 3,15E-01 | 0,71% | 1,42E-01 |
| Plastic | 3,03E-02 | 0,07% | 0,00E+00 |
| TOTAL | 1,60E+00 | 3,60% | 7,24E-01 |

During the life cycle of the product any hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has not been used in a percentage higher than 0,1% of the weight of the product.

This line can have a fibreglass net which is added to the large format tiles for supporting purpose.

# LCA INFORMATION

Functional unit: The functional unit of the study is 1 m2 of porcelain stoneware slab installed.
The slabs under study in this report can have 12 or 20 mm of thickness in all colours and shapes indicated in Ceramica del Conca catalogue. The product is used as floors and walls recovering and decoration for interiors and exteriors.
The study comprises the raw material extraction, raw material transportation, manufacturing, transportation to costumer, installation, end-of-life of product.

Reference service life: 50 years

Time representativeness: primary data refer to 2023 year. The generic data has been updated in 2023 (Ecoinvent 3.10.1).

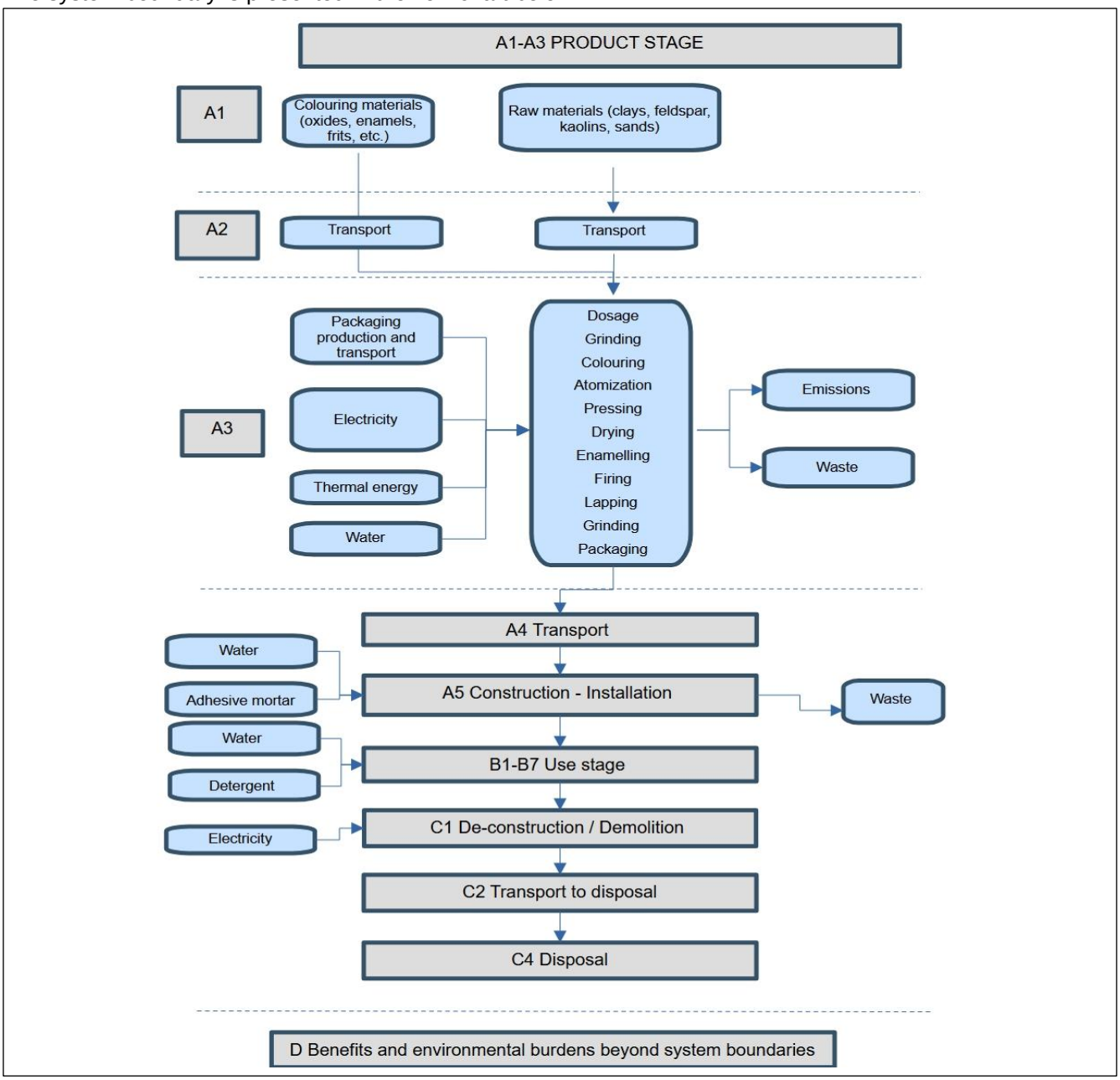
Geographical scope: Global, primary data are derived from Ceramica del Conca production site in Savignano sul Panaro. The secondary data are derived by database Ecoinvent 3.10.

Database(s) and LCA software used: Ecoinvent 3.10 (database); Simapro 10.1.0.5 for the elaboration

Description of system boundaries: Cradle-to-grave and module D (A + B + C + D).

Process flow diagram:

The system boundary is presented in the flow chart below:




The production process is characterized by innovative, highly automated and digitalised methods and technologies which increase its energy efficiency.
The steps analysed are:

•Dosage: The raw materials are stocked in warehouse boxes. The dosage takes place through weighting belts that determine the specific quantities of raw materials according to the recipe elaborated by internal laboratory.
•Grinding: the raw materials (clay, feldspar, sands, kaolin) are shredded in mill with additives (fluidifying) and water to generate a mixture called “slip”.
•Colouring: colouring materials for dough can be added to slip (colouring oxides).
•Atomization: the slip is subsequently dried by the spray drying technique, which takes place in the atomizers. Atomization is a continuous and controlled process that allows to obtain a semi-finished

product whose residual moisture content, the shape and size of the granules are suitable for the next phase.
•Pressing: the atomized powders are compacted by a traditional piston press or continuous press.
•Drying: this phase aims to reduce the level of moisture in the tiles and takes place by transferring heat from the air to the raw tile with consequent transformation of water into water vapor.
•Enamelling: the raw tile is covered with colouring raw materials and decorated with digital inks.
•Firing: this process consists in heating the materials by transferring energy at a certain temperature and for a specific time. The temperature can reach 1200°C.
•Lapping: the tile can be subject to a mechanical treatment, which makes the surface smooth and shiny. In the surface of the product, a wax can be added for giving a shine and resistance appearance to the product.
•Grinding: this is a mechanical process for reducing the inhomogeneity of the finished products in terms of dimensions and edges.
•Packaging: Ceramica del Conca packs its products with wood packaging, plastic, cardboard.

Additional information:

- The allocation is applied in the LCA study: when necessary, mass allocation is used.
- Cut-off: at least 95% of the energy and materials used by module has been introduced, as well as 99% of the total use of energy and materials
- The modularity principle, as well as the polluter payer principle have been followed
- The long-term emissions have not been included.
- The next processes have not been included since its impact is not significant:
    - Environmental impact from infrastructure, construction, production equipment, and tools that are not directly consumed in the production process.
    - Personnel-related impacts, such as transportation to and from work.

- The impact methods used are:
    - Environmental footprint 3.1
    - Cumulative energy demand (LHV) v. 1.00 for resource use
    - EDIP 2003 v. 1.07 for waste production.

The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.

The climate impact (GWP-GHG indicator) of electricity purchased in the manufacturing process (A3) is: 6,82E-01 kg CO2 eq./kWh

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

| | Product stage | | | Distribution/ installation stage | | Use stage | | | | | | | End-of-life stage | | | | Beyond product life cycle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Raw material supply | Transport | Manufacturing | Transport | Construction installation | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential |
| **Module** | **A1** | **A2** | **A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Modules declared | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Geography | Global | Global | Italy | Global | Global | Global | Global | Global | Global | Global | Global | Global | Global | Global | Global | Global | Global |
| Share of primary data | 73,1% | | | | | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – products | -27% ; +13% | | | | | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – sites | 0% | | | | | - | - | - | - | - | - | - | - | - | - | - | - |

Data quality

A summary of the data quality assessment, in line with requirements of PCR in Section 4.6.4. is listed below. The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

The EPD covers porcelain stoneware tiles from Ceramica del Conca factory in Savignano sul Panaro, Italy, which provided data for the period 2023-01-01 to 2023-12-31. The product is manufactured through a complete tile manufacturing process, including grinding, atomization, pressing, drying, firing and packaging.
Due to its global distribution, it is assumed that installation, disposal of packaging waste and the product's end-of-life stage are global.
Background data was sourced from the ecoinvent 3.10. The data quality assessment is based on EN15804 Annex E Table E-1. In general, time representation of the dataset's selection is very good for the studied product, the technical representation is good, the geographical representation is good.
No poor or very poor data was found during the assessment of relevant data.

The declaration of data sources, reference years, data categories, and share of primary data

| Process | Source type | Source | Reference year | Data category | Share of primary data, of GWP-GHG results for A1-A3 |
|---|---|---|---|---|---|
| Manufacturing of raw materials | Database | Ecoinvent v3.10 | 2025 | Secondary data | 0% |
| Transport of raw materials | Collected data, database | Ecoinvent v3.10 | 2023 | Primary data | 12,7% |
| Generation of electricity used in manufacturing of product | Collected data, database | Ecoinvent v3.10 | 2023 | Primary data | 9,9% |
| Gas consumption in manufacturing of product | Collected data, database | Ecoinvent v3.10 | 2023 | Primary data | 47,7% |
| Emissions in manufacturing of product | Collected data, database | Ecoinvent v3.10 | 2023 | Primary data | 0,1% |
| Wastes generated in manufacturing of product | Collected data, database | Ecoinvent v3.10 | 2023 | Primary data | 0,1% |
| Production of packaging | Collected data, database | Ecoinvent v3.10 | 2023 | Primary data | 2,5% |
| Fibreglass net production | Collected data from external company, database | Ecoinvent v3.10 | 2023 | Secondary data | 0% |
| **Total share of primary data, of GWP-GHG results for A1-A3** | | | **73,1%** | | |

Scenarios

- Module A1 – Raw material supply: this module includes the extraction and production of raw material. Ceramica del Conca S.p.A purchases recycled ceramic scraps (pre-consumer) as secondary raw material.

- Module A2 – Transport: this module includes the transportation of raw materials from the production site to the Ceramica del Conca gate. The specific distance of supply of each raw material is included in the study.

- Module A3 – Manufacturing: this module considers Ceramica del Conca S.p.A. internal processes of the Savignano sul Panaro site, including consumption of energy, resources, packaging and generation of waste and emissions in air.
  The electricity modelled on the energy mix of the supplier, the Italian residual mix and Italian grid operator production data.
  Consumptions are converted from high to medium voltage and other impacts of the electricity transmission are accounted as infrastructure and emission generated by high voltage currents.

- Module A4 – Transport: consists of transporting the product from the factory gate to the client, in Italy and all over the world. For the abroad distribution data from Ceramica del Conca are collected for every country and the distance is calculated from the production site till the capital. For Italian distribution no data are available for each city so a plausible scenario is modelled.

| PARAMETER | DESCRIPTION / VALUE for FU |
|---|---|
| Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc | From Ecoinvent<br>Truck (16-32 metric ton): 0,0374 kg of diesel low sulfur for ton*km transported<br>Ferry: 0,030 kg of heavy fuel oil for ton*km transported<br>Ship: 0,0025 kg of heavy fuel oil for ton*km transported |
| Distance (Italy) | Distribution scenario<br>Truck: 555 km |
| Distance (Abroad) | Truck: 9,53E+02 / Train: 8,20E+03 / Ship: 1,25E+03 |

| | |
|---|---|
| Capacity utilisation (including empty returns) | From Ecoinvent database:<br>Truck: 36,67%<br>Ferry: 50%<br>Ship: 70% |
| Bulk density of transported products (kg/m3) | 2338 kg/$m^3$ |
| Volume capacity utilisation factor | 1 |

- Module A5 – Construction installation: this module considers the installation of product in the building with use of auxiliary materials a scenario is designed from data on PCR EN 17160:2019.
  During the installation the tiles can be cut for adjustment with an estimated a cut of 5%, for the modularity principle, the 5% of impacts of A1, A2, A3, A4, C2 and C4 modules is attributed in A5 module.
  In A5 module the packaging end-of-life and transport are modelled. The product can be sent all over the world, so no information about the disposal or recycling is available, so is assumed that all packaging materials go to landfill.

| PARAMETER | DESCRIPTION | VALUE for FU |
|---|---|---|
| Auxiliary materials for installation | Adhesive mortar (kg) | 6 |
| Use of water | $m^3$ | 2,4E-04 |
| Use of other resources | kg | 0 |
| Quantitative description of energy type and consumption during the preparation and installation process | Electric energy (kWh) | 0 (manual installation) |
| Direct emissions to ambient air, soil and water | kg | 0 |
| Waste materials on the building site, before waste processing, generated by the product's installation; specified by type | Product loss | 5% |
| | Wood packaging (kg) | 1,25E+00 |
| | Plastic packaging (kg) | 3,03E-02 |
| | Cardboard (kg) | 3,15E-01 |
| Output materials (specified by type) as result of waste processing at the building site e.g. of collection for recycling, for energy recovery, disposal; specified by route | Landfill | 100% of product packaging and 100% of product loss |
| The transport to disposal of packaging | Km | 80 |

- Module B – Use stage: The product is maintained with a periodic cleaning with water (every week) and detergent (every 2 weeks) for 50 years.

| SCENARIO INFORMATION | DESCRIPTION / VALUE for FU |
|---|---|
| Maintenance process | Periodic cleaning with water and detergent |
| Maintenance cycle | For 50 years |
| Ancillary materials for maintenance | Detergent: 0,134 ml/two weeks (0,185 kg in the whole RSL) |
| Waste material resulting from maintenance | Not relevant |
| Net fresh water consumption during maintenance | Tap water: 0,1 l/week (260 kg in the whole RSL) |
| Energy input during maintenance | No energy use during maintenance |

- Module C1 – Deconstruction/demolition: The product is uninstalled with the consume of 2,52E-01 kWh/FU of energy accounted as diesel consumption.

- Module C2 – Transport to waste processing: the product is then transported to disposal; the scenario provides the transport for 80 km.

- Module C3 - Waste processing for reuse, recovery and/or recycling: the product is sent to landfill; any process of reuse, recovery and/or recycling isn't considered in the study.

- Module C4 - Disposal: the product is totally disposed in landfill.

| PARAMETER | DESCRIPTION / VALUE for FU |
|---|---|
| Collection process specified by type | Product wastes are collected with 16-32 metric ton truck |
| Recovery system specified by type | There is no recovery, recycling or reuse |
| Disposal specified by type | 100 % Landfill (44,46 kg of product and 6 kg of adhesive mortar) |
| Assumptions for scenario development (e.g. transportation) | 16-32 metric ton truck.<br>Distance: 80 km |

Module D - Reuse-Recovery-Recycling potential: Module D calculates the potential environmental benefits and impacts of the recycling or reuse of materials. The benefits/impacts linked to the use of secondary material in A1 module are accounted in D module, applying the formula of EN 15804:2012+A2:2019/AC:2021. At the end-of-life the product is sent to landfill, so there is a loss of recycled material.

# ENVIRONMENTAL PERFORMANCE

## LCA results of the product(s) - main environmental performance results

### Mandatory impact category indicators according to EN 15804

**Results per functional or declared unit**

| Indicator | Unit | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GWP-fossil | kg $CO_2$ eq. | 3,08E+01 | 1,64E+01 | 1,12E+01 | 0,00E+00 | 6,84E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 8,52E-02 | 6,24E-01 | 0,00E+00 | 1,34E-01 | -1,05E-03 |
| GWP-biogenic | kg $CO_2$ eq. | -2,64E+00 | 1,03E-02 | 2,69E+00 | 0,00E+00 | 1,35E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 3,32E-06 | 2,54E-05 | 0,00E+00 | 9,94E-06 | -8,82E-07 |
| GWP-luluc | kg $CO_2$ eq. | 1,56E-02 | 1,38E-02 | 7,20E-03 | 0,00E+00 | 1,60E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,93E-06 | 1,82E-05 | 0,00E+00 | 5,49E-06 | -6,01E-07 |
| GWP-total | kg $CO_2$ eq. | 3,08E+01 | 1,64E+01 | 1,17E+01 | 0,00E+00 | 8,45E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 8,52E-02 | 6,24E-01 | 0,00E+00 | 1,34E-01 | -1,05E-03 |
| ODP | kg CFC 11 eq. | 1,02E-06 | 2,72E-07 | 2,20E-07 | 0,00E+00 | 1,24E-08 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 1,34E-09 | 8,37E-09 | 0,00E+00 | 1,99E-09 | -9,27E-12 |
| AP | mol $H^+$ eq. | 8,70E-02 | 7,69E-02 | 5,84E-02 | 0,00E+00 | 3,46E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 7,96E-04 | 1,69E-03 | 0,00E+00 | 1,22E-03 | -7,00E-06 |
| EP-freshwater | kg P eq. | 5,36E-04 | 4,37E-04 | 3,71E-04 | 0,00E+00 | 4,09E-05 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 8,05E-08 | 1,54E-06 | 0,00E+00 | 4,83E-07 | -2,64E-08 |
| EP-marine | kg N eq. | 2,97E-02 | 2,43E-02 | 1,11E-02 | 0,00E+00 | 2,56E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 3,74E-04 | 6,15E-04 | 0,00E+00 | 5,55E-04 | -2,37E-06 |
| EP-terrestrial | mol N eq. | 2,53E-01 | 2,68E-01 | 1,14E-01 | 0,00E+00 | 1,04E-02 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 4,10E-03 | 6,75E-03 | 0,00E+00 | 6,08E-03 | -2,60E-05 |
| POCP | kg NMVOC eq. | 1,17E-01 | 8,74E-02 | 4,62E-02 | 0,00E+00 | 3,84E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 1,22E-03 | 2,52E-03 | 0,00E+00 | 1,84E-03 | -8,08E-06 |
| ADP-minerals&metals* | kg Sb eq. | 1,71E-04 | 8,44E-07 | 5,47E-05 | 0,00E+00 | 4,70E-07 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 3,56E-09 | 3,70E-08 | 0,00E+00 | 5,31E-09 | -9,35E-11 |
| ADP-fossil* | MJ | 4,95E+02 | 2,64E+02 | 1,65E+02 | 0,00E+00 | 1,22E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 1,12E+00 | 8,33E+00 | 0,00E+00 | 1,73E+00 | -1,25E-02 |
| WDP* | $m^3$ | 8,94E+00 | 1,24E+00 | 4,31E+00 | 0,00E+00 | 1,20E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 8,85E-04 | 7,68E-03 | 0,00E+00 | 1,56E-03 | -1,83E-02 |
| Acronyms | GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption | | | | | | | | | | | | | | | |

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.*

*The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.*

*The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).*

## Information on biogenic carbon content

| Results per functional unit | | |
|---|---|---|
| **BIOGENIC CARBON CONTENT** | **Unit** | **QUANTITY** |
| Biogenic carbon content in product | kg C | 0,00E+00 |
| Biogenic carbon content in packaging | kg C | 7,24E-01 |

*Note: 1 kg biogenic carbon is equivalent to 44/12 kg $CO_2$.*

*The packaging biogenic carbon is accounted in A3 module and the packaging biogenic carbon compensation is accounted in A5 module.*

## Additional mandatory impact category indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-GHG[1] | kg $CO_2$ eq. | 3,08E+01 | 1,64E+01 | 1,12E+01 | 0,00E+00 | 8,44E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 8,52E-02 | 6,24E-01 | 0,00E+00 | 1,34E-01 | -1,05E-03 |

## Additional voluntary impact category indicators required by EN 15804

| Results per functional or declared unit | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Ionising radiation | kBq U-235 eq | 6,96E-01 | 9,44E-01 | 2,33E-01 | 0,00E+00 | 2,13E-02 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 1,00E-04 | 5,76E-04 | 0,00E+00 | 1,83E-04 | -1,70E-05 |
| Particulate matter | disease inc. | 8,01E-07 | 9,97E-07 | 6,11E-07 | 0,00E+00 | 3,66E-08 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,29E-08 | 4,16E-08 | 0,00E+00 | 3,44E-08 | -1,46E-10 |
| Human toxicity, non-cancer | CTUh | 1,65E-07 | 9,94E-08 | 2,04E-07 | 0,00E+00 | 6,73E-09 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 8,45E-11 | 4,11E-09 | 0,00E+00 | 1,80E-10 | -1,33E-12 |
| Human toxicity, cancer | CTUh | 6,88E-08 | 2,38E-09 | 2,08E-08 | 0,00E+00 | 2,75E-09 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 5,94E-12 | 5,23E-11 | 0,00E+00 | 2,93E-11 | -3,80E-13 |
| Ecotoxicity, freshwater | CTUe | 1,30E+02 | 3,63E+01 | 1,39E+02 | 0,00E+00 | 2,18E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 3,88E-02 | 5,48E-01 | 0,00E+00 | 8,11E-02 | -1,66E-03 |
| Land use | Pt | 2,20E+02 | 1,53E+01 | 4,22E+01 | 0,00E+00 | 1,93E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,38E-03 | 3,40E-02 | 0,00E+00 | 2,04E+00 | -8,86E-03 |

## Resource use indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| PERE | MJ | 4,74E+01 | 2,42E+01 | 1,13E+01 | 0,00E+00 | 6,05E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,47E-03 | 1,34E-02 | 0,00E+00 | 7,60E-03 | -5,57E-04 |
| PERM | MJ | 2,14E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic $CO_2$ is set to zero.

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PERT | MJ | 6,88E+01 | 2,42E+01 | 1,13E+01 | 0,00E+00 | 6,05E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,47E-03 | 1,34E-02 | 0,00E+00 | 7,60E-03 | -5,57E-04 |
| PENRE | MJ | 4,93E+02 | 2,64E+02 | 1,31E+02 | 0,00E+00 | 1,25E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 1,12E+00 | 8,33E+00 | 0,00E+00 | 1,73E+00 | -1,25E-02 |
| PENRM | MJ | 2,00E+00 | 0,00E+00 | 3,37E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| PENRT | MJ | 4,95E+02 | 2,64E+02 | 1,65E+02 | 0,00E+00 | 1,25E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 1,12E+00 | 8,33E+00 | 0,00E+00 | 1,73E+00 | -1,25E-02 |
| SM | kg | 3,06E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| RSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| NRSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| FW | $m^3$ | 2,81E-01 | 3,11E-02 | 1,15E-01 | 0,00E+00 | 3,66E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,21E-05 | 1,79E-04 | 0,00E+00 | 4,40E-05 | -4,30E-04 |
| Acronyms | PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water | | | | | | | | | | | | | | | |

## Waste indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Hazardous waste disposed | kg | 3,18E-03 | 1,22E-03 | 1,51E-03 | 0,00E+00 | 1,58E-04 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 7,69E-06 | 5,70E-05 | 0,00E+00 | 1,14E-05 | -4,96E-08 |
| Non-hazardous waste disposed | kg | 3,62E+00 | 6,31E-02 | 5,01E+00 | 0,00E+00 | 2,92E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 3,21E-05 | 3,46E-04 | 0,00E+00 | 4,94E+01 | -2,81E-06 |
| Radioactive waste disposed | kg | 5,05E-04 | 7,63E-04 | 1,59E-04 | 0,00E+00 | 1,54E-05 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 5,73E-08 | 3,00E-07 | 0,00E+00 | 1,06E-07 | -8,40E-09 |

## Output flow indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Components for re-use | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Material for recycling | kg | 6,05E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Materials for energy recovery | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Exported energy, electricity | MJ | 1,32E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Exported energy, thermal | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |

For EPD of multiple products, if the EPD does not claim compliance with ISO 21930, variations above 10% are allowed. In such cases, the LCA report shall include an explanation of the variation and a justification of the grouping of products, and the EPD shall (in the LCA information section) declare the variation of each impact indicator results for which the variation is above 10% and include an explanation of the variation. EPDs based on worst-case results, that do not claim compliance with ISO 21930, are exempted from the requirement to declare the variation if above 10%.

| LCA result of one declared unit product (A-C) | Unit | Min | Representative/ Average | Max |
|---|---|---|---|---|
| GWP-fossil | kg CO2 eq. | -27% | 5,99E+01 | 13% |
| GWP-biogenic | kg CO2 eq. | -30% | 6,47E-02 | 14% |
| GWP-luluc | kg CO2 eq. | -5% | 1,97E-01 | 2% |
| GWP-total | kg CO2 eq. | -27% | 6,06E+01 | 13% |
| ODP | kg CFC 11 eq. | -29% | 1,53E-06 | 14% |
| AP | mol H+ eq. | -25% | 2,30E-01 | 12% |
| EP-freshwater | kg P eq. | -27% | 1,39E-03 | 13% |
| EP- marine | kg N eq. | -24% | 6,93E-02 | 11% |
| EP-terrestrial | mol N eq. | -27% | 6,62E-01 | 13% |
| POCP | kg NMVOC eq. | -27% | 2,60E-01 | 13% |
| ADP-minerals&metals* | kg Sb eq. | -27% | 2,27E-04 | 13% |
| ADP-fossil* | MJ | -26% | 9,48E+02 | 12% |
| WDP* | $m^3$ | -13% | 2,64E+01 | 6% |
| PERE | MJ | -7% | 8,90E+01 | 45% |
| PERM | MJ | -33% | 2,14E+01 | 16% |
| PERT | MJ | -13% | 1,10E+02 | 38% |
| PENRE | MJ | -2% | 9,12E+02 | 55% |
| PENRM | MJ | -3% | 3,57E+01 | 1% |
| PENRT | MJ | -2% | 9,48E+02 | 52% |
| SM | kg | -33% | 3,06E-01 | 16% |
| RSF | MJ | 0% | 0,00E+00 | 0% |
| NRSF | MJ | 0% | 0,00E+00 | 0% |
| FW | $m^3$ | -13% | 7,93E-01 | 6% |
| Hazardous waste disposed | kg | -25% | 6,14E-03 | 12% |
| Non-hazardous waste disposed | kg | -29% | 5,81E+01 | 14% |
| Radioactive waste disposed | kg | -29% | 1,44E-03 | 14% |
| Components for re-use | kg | 0% | 0,00E+00 | 0% |
| Material for recycling | kg | -33% | 6,05E+00 | 19% |
| Materials for energy recovery | kg | 0% | 0,00E+00 | 0% |
| Exported energy, electricity | MJ | 0% | 1,32E-01 | 0% |
| Exported energy, thermal | MJ | 0% | 0,00E+00 | 0% |

# ADDITIONAL ENVIRONMENTAL INFORMATION

**Report of compliance with the minimum environmental criteria**

**1. Introduction**

This paragraph consists on the analysis carried out on the Ceramica del Conca tiles by ESALEX s.r.l. in accordance with the Minimum Environmental Criteria (CAM) for the assignment of the design and execution service of building works (Ministerial Decree 23/06/2022) in the Official Journal General Series no. 183 of 6 August 2022. The points applicable to ceramic tiles are 2.5.1 Indoor pollution and 2.5.10.1 Hard flooring.

According to paragraph 2.5.10.1 Hard flooring of the Minimum Environmental Criteria about building sector, starting from 1 January 2024, ceramic tiles must comply with the criteria included in Decision 2021/476 which establishes the criteria for the assignment of the European Union ecological quality label (EU Ecolabel) to hard roofing products.

The criteria of Decision 2021/476 applicable to ceramic tiles are:

1. Criteria common to all hard covering products
    - 1.1. Industrial and construction mineral extraction
    - 1.2. Restricted substances
    - 1.3. VOC emissions
    - 1.4. Fitness for use
    - 1.5. User information
4. Ceramic and fired clay
    - 4.1. Fuel consumption for drying and firing
    - 4.2. CO2 emissions
    - 4.3. Process water consumption
    - 4.4. Emissions of dust, HF, NOx and SOx to air
    - 4.5. Wastewater management
    - 4.6. Reuse of process waste
    - 4.7. Glazes and inks

**2. Reference standard**

- Criteri Ambientali Minimi (CAM) per l'affidamento del servizio di progettazione ed esecuzione dei lavori di interventi edilizi (D.M. 23/06/2022 published in G.U.R.I. Serie Generale n. 183 of 06/08/2022) (CAM Edilizia);
- Decision (UE) 2021/476 of Commission in data 16.03.2021 that defines the criteria for awarding the European Union Ecolabel for hard covering products published in G.U.U.E. n. L 99 in data 02.03.2021.

**3. Document analysis**

| CRITERIA | Parameter | Evidence |
|---|---|---|
| 2.5 | Percentage value of the content of recycled or recovered material or by-products | 0,59% |
| 2.5.1<br>Indoor pollution | Benzene<br>Trichloroethylene di-2-ethylhexyl phthalate (DEHP)<br>Dibutyl phthalate<br>VOC<br>Formaldehyde<br>Acetaldehyde<br>Toluene<br>Tetrachloroethylene<br>Xylene<br>1,2,4-Trimethylbenzene<br>1,4-dichlorobenzene | Ceramica del Conca demonstrates compliance to this criterion with those documents:<br>• Modena Centro Prove Laboratory declaration, data 20/05/2016: Ceramica del Conca tiles do not contain and release VOC because the products are obtained by an industrial thermal process up to 1200°C.<br>• Ceramica del Conca obtained the Floor score certification (registration n. SCS-FS-06343) with measured concentration of Total Volatile Organic Compounds |

| | | |
|---|---|---|
| | Ethylbenzene<br>2-Butoxyethanol<br>Styrene | (TVOC): Less than/equal to 0.5 mg/m3 (in compliance with CDPH/EHLB Standard Method v1.2-2017) - Floor score certification Registration n. SCS-FS-06343).<br>• Safety data sheet of raw materials used in anti-stain post-lapping treatment indicates: the only substance indicated is ethyl alcohol.<br>• No product with formaldehyde is used: safety data sheet of raw materials used has been analysed. |
| | | |
| 2.5.10.1 Hard covering products | Compliance with the criteria included in the Decision 2021/476<br>(hard covering products Ecolabel) | Ceramica del Conca demonstrates compliance with the criteria included in Decision 2021/476 through a Type III Environmental Product Declaration (EPD), compliant with the UNI EN 15804 standard and the UNI EN ISO 14025 standard, such as the international EPD© scheme, which contains specific information relating to the applicable criteria defined in paragraph 1. |
| - Industrial and construction mineral extraction | Required documentation<br>- quarry location and authorization provided to competent body;<br>- copy of EIA screening and EIA report;<br>- copy of rehabilitation management plan provided;<br>- declaration on invasive species;<br>- declaration on the habitats and birds Directive | Ceramica del Conca verified raw material extracted suppliers and asked them authorization documents (more than 90% of raw materials extracted) |
| - Restricted substances | SVHC | Safety data sheets for all chemicals or materials supplied have been collected, from which it is clear that no SVHC substances are present in concentrations above 0.10% w/w. |
| | Substances or mixtures to which the hazard classes indicated in Decision (EU) 2021/476 have been assigned: H340, H350, H350i, H360, H360F, H360D, H360FD, H360Fd, H360Df, H341, H351, H361, H361f, H361d, H361fd, H362, H400, H410, H300, H310, H330, H304, H370, H372, H411, H412, H413, H301, H311, H331, H371, H373. | Ceramica del Conca declares to produce tiles with chemicals that are composed by substances with the specified hazard classes in concentrations lower than 0.10% w/w. This declaration is confirmed by safety data sheet. |
| - VOC Emission | VOC | See 2.5.1. Indoor pollution |
| - Fitness for use | Internal quality management system | Ceramica del Conca has an in-house internal quality management system |
| | Procedure for dealing with customer complaints | Ceramica del Conca has a procedure for dealing with customer complaints |
| | CE marking | Ceramica del Conca tiles are compliant to EN 14411:2016 Annex G Required for BIa |
| - User information | Details on relevant technical performance, correct preparation and installation, instructions on correct cleaning and maintenance and | Ceramica del Conca declares that the user information made available in electronic format and accessible online (https://www.delconca.com/it/del- |

| | | |
|---|---|---|
| | information on correct disposal (both of the product and packaging materials) | conca/download/informazioni/ and https://www.delconca.com/it/del-conca/download/manuali-tecnici/), for users of the products covered by the application, and that this information includes:<br>- details about relevant technical performance<br>- details about correct preparation and installation<br>- instructions on proper cleaning and maintenance<br>- information about correct disposal (of product and packaging materials) |
| - Fuel consumption | Specific spray-dried powder energy consumption (SDP): | 0,80 MJ/kg of spray-dried powder production |
| | Specific kiln & ware dryer fuel consumption (KWD): | 4,99 MJ/kg of tiles |
| - $CO_2$ emissions | Specific spray-dried powder CO2 emission (SDP): | kg CO2/ton of spray-dried powder production |
| | Specific kiln & ware dryer CO2 emission (KWD): | kg CO2/ton of tiles |
| - Process water consumption | Description of liquid discharge system | Zero liquid discharge system |
| - Emissions of dust, HF, NOx and SOx to air | The emission data comes from the monitoring system authorized by the competent authority. | |
| | Spry dryer dust emissions | |
| | Dust | 25,41 mg/kg of tiles |
| | Kiln emissions | |
| | Dust | 7,80 mg/kg of tiles |
| | HF | 2,06 mg/kg of tiles |
| | Nox | 74 mg/kg of tiles |
| | SOx | 164 mg/kg of tiles |
| - Wastewater management | The plant is equipped with a zero liquid discharge system for wastewater recycling | |
| - Reuse of process waste | Fraction of process waste reused | 98,4% |
| - Glazes and inks | Lead (Pb) and Cadmium (Cd) contents | Ceramica del Conca declares to produce tiles with glazes and inks composed by less than 0,10% of lead and cadmium and demonstrates compliance with this request with:<br>• Safety data sheet of glazes and inks used<br>• Test about release of lead and cadmium respect the ISO 10545-15 standard made by Modena Centro Prove (test report n. 20236295/1 and 20222254/n): the results are below detection limit of instruments (0,10 mg/l for lead and 0,010 for cadmium). |

# ABBREVIATIONS

| Abbreviation | Definition |
|---|---|
| **General Abbreviations** | |
| EN | European Norm (Standard) |
| EF | Environmental Footprint |
| GPI | General Programme Instructions |
| ISO | International Organization for Standardization |
| CEN | European Committee for Standardization |
| CLC | Co-location centre |
| CPC | Central product classification |
| GHS | Globally harmonized system of classification and labelling of chemicals |
| GRI | Global Reporting Initiative |
| SVHC | Substances of Very High Concern |
| ND | Not Declared |
| GWP | Global Warming Potential |
| GHG | Green House Gases |
| VOC | Volatile Organic Compounds |
| LCA | Life Cycle Assessment |
| PCR | Product Category Rules |
| RSL | Reference Service Life |

# REFERENCES

- General Programme Instructions of the International EPD® System. Version 5.0.
- PCR 2019:14. CONSTRUCTION PRODUCTS. Version 2.0.1
- c-PCR-002 Ceramic tiles (EN 17160) of PCR 2019:14 version 2025-04-08
- EN 17160:2019 Product category rules for ceramic tiles
- ISO 14040:2006 Environmental management-Life Cycle Assessment - Principles and framework
- ISO 14044:2006 Environmental management-Life Cycle Assessment - Requirements and guidelines
- ISO 14025:2010 Environmental labels and declarations-Type III Environmental Declarations-Principles and procedures
- EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works — Environmental product declarations
- Project report rev.2 of 08/08/2025 – Life cycle assessment: Porcelain stoneware

# VERSION HISTORY

**Original version of the EPD, 2025-09-15**

EPD
INTERNATIONAL EPD SYSTEM
www.environdec.com