

CERTIFICATIONS

EPD

12-20mm

ENVIRONMENTAL PRODUCT DECLARATION

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 Box 210 60 SE-100 31 Stockholm 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:
<input checked="" type="checkbox"/> Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: Marcel Gomez Ferrer Marcel Gómez Consultoria Ambiental, info@marcelgomez.com Phone: +34 630 64 35 93 - Email: info@marcelgomez.com Approved by: International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 Magazzino, 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		$\alpha = \sim 6.4 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$
	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 Magazzino, 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).

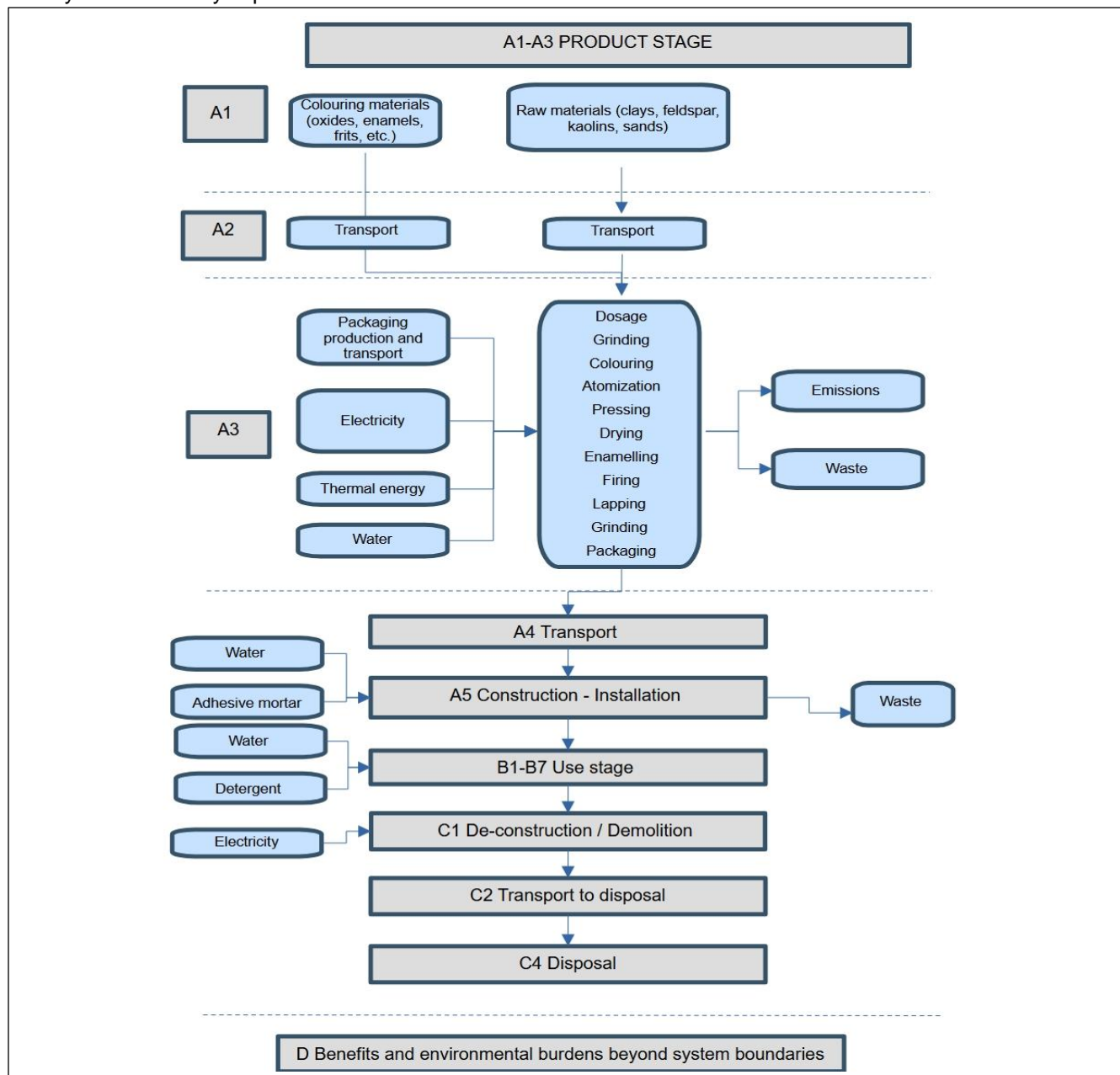
Geographical scope: Global, primary data are derived from Ceramica del Conca production site in Savignano sul Panaro. The secondary data are derived by database Ecoinvent 3.10.

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 Truck (16-32 metric ton): 0,0374 kg of diesel low sulfur for ton*km transported Ferry: 0,030 kg of heavy fuel oil for ton*km transported Ship: 0,0025 kg of heavy fuel oil for ton*km transported
Distance (Italy)	Distribution scenario 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: Truck: 36,67% Ferry: 50% Ship: 70%
Bulk density of transported products (kg/m ³)	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. 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 experience 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 CO₂.

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	diseases 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 CO₂ 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	m³	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, NO_x and SO_x 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 Indoor pollution	Benzene Trichloroethylene di-2-ethylhexyl phthalate (DEHP) Dibutyl phthalate VOC Formaldehyde Acetaldehyde Toluene Tetrachloroethylene Xylene 1,2,4-Trimethylbenzene 1,4-dichlorobenzene	Ceramica del Conca demonstrates compliance to this criterion with those documents: <ul style="list-style-type: none"> • 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. • Ceramica del Conca obtained the Floor score certification (registration n. SCS-FS-06343) with measured concentration of Total Volatile Organic Compounds

	Ethylbenzene 2-Butoxyethanol Styrene	(TVOC): Less than/equal to 0.5 mg/m ³ (in compliance with CDPH/EHLB Standard Method v1.2-2017) - Floor score certification Registration n. SCS-FS-06343). <ul style="list-style-type: none"> Safety data sheet of raw materials used in anti-stain post-lapping treatment indicates: the only substance indicated is ethyl alcohol. 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 (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 - quarry location and authorization provided to competent body; - copy of EIA screening and EIA report; - copy of rehabilitation management plan provided; - declaration on invasive species; - 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 Bla
- 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/delconca/download/manuali-tecnici/), for users of the products covered by the application, and that this information includes: - details about relevant technical performance - details about correct preparation and installation - instructions on proper cleaning and maintenance - 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 CO ₂ emission (SDP):	kg CO ₂ /ton of spray-dried powder production
	Specific kiln & ware dryer CO ₂ emission (KWD):	kg CO ₂ /ton of tiles
- Process water consumption	Description of liquid discharge system	Zero liquid discharge system
- Emissions of dust, HF, NO _x and SO _x to air	The emission data comes from the monitoring system authorized by the competent authority.	
	<u>Spry dryer dust emissions</u>	
	Dust	25,41 mg/kg of tiles
	<u>Kiln emissions</u>	
	Dust	7,80 mg/kg of tiles
	HF	2,06 mg/kg of tiles
	Nox	74 mg/kg of tiles
	SO _x	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: <ul style="list-style-type: none"> • Safety data sheet of glazes and inks used • 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

