COSENTINO

Environmental Product Declaration

EPD®

In accordance with
ISO 14025:2006 and
UNE-EN 15804:2012+A2:2019

The International EPD® System,
www.environdec.com
Programme operator:
EPD® International AB
Geographical scope of the
EPD: International

Based on PCR 2019:14
Construction Products version 1.11

ECO PLATFORM EPD VERIFIED

EPD No. S-P-01269 – version 2
Publication date: 01/10/2014
Date of the update: 31/01/2022
Valid until: 30/01/2027

silestone®

TECHNICAL CONTENT

Information about the Certification Programme

This Environmental Product Declaration is
the property of Cosentino®, S.A.U.

Location of the factory:
Carretera A-334, km 59, 04850 Cantoria (Almería) - Spain

Table 1: Information about the Certification Programme

UNE-EN 15804:2012+A2:2019 Standard sets out the basic Product Category Rules (PCR)
for construction products

Product Category Rules (PCR) PCR 2019: 14:

construction products. Version 1.1, c-PCR-003 Concrete
and concrete elements (EN 16757). Version 2019-12-20.

The review of the PCR was carried out by:

The Technical Committee of the International EPD® System.
Please visit www.environdec.com/tc for a list of members.

Review Chair: Claudia A. Peña.
The review panel can be contacted through
info@environdec.com

Third party independent verification of declaration and data according to ISO 14025:2006:

☐ EPD verification scheme ■ EPD verification

Third party verification:

Marcel Gómez Ferrer (Marcel Gómez Consultoría Ambiental [Environmental Consultancy])
info@marcelgomez.com
Accredited by: The International EPD® System.

The procedure for data monitoring during the validity
of the EPD requires an independent verifier: ■ Yes ☐ No

'EPD® of construction products may not be comparable
if they do not comply with UNE-EN 15804:2012+A2:2019.'

'Environmental Product Declarations for the same
product category from different programmes may not be comparable'

Differences with respect to previous versions

An analysis of the evolution of the different impact categories over time provides a better understanding of the environmental performance of the product and, above all, of the effectiveness of the actions and projects carried out in terms of environmental matters, as is the case for Cosentino®.

The reduction results obtained in the comparison of the impact categories for Silestone® are as follows:

Table 2: Impact comparison

IMPACT CATEGORY	UNIT	TOTAL 2020	TOTAL 2018	REDUCTION
Climate Change - Total	Kg CO_2 eq	1.05,E+03	1.23,E+03	14.7 %
Water Consumption	m^3 depriv.	4.44,E+02	8.24,E+02	46.1 %
Abiotic Resource Depletion – minerals and metals	Kg Sb eq	6.70,E-03	1.01,E-02	33.7 %
Abiotic Resource Depletion – fossil fuels	MJ	1.85,E+04	1.94,E+04	4.6 %

Comparing the Silestone® 2020 EPD with the previous 2018 EPD, we can see the following reductions:

- → 14.7 % in the Climate Change impact category.
- → 46.1 % in the Water Consumption impact category.
- → 33.7 % in the Abiotic Resource Depletion – minerals and metals impact category.
- → 4.6 % in the Abiotic Resource Depletion – fossil fuels impact category.

These reductions are the result of Cosentino®'s efforts over the years to make Silestone® more sustainable. These efforts include a number of actions and projects such as:

- → 100 % of the electrical energy consumed in our Cantoria Industrial Park (Almería, Spain), where Silestone® is produced in its entirety, is certified renewable energy.
- → Use of recycled raw materials.
- → Transition towards more sustainable raw materials and with a smaller environmental footprint.
- → Replacement of the interior and exterior lighting of the Silestone® factories with energy-saving LED technology.
- → Replacement of machinery in the production process with that based on the best available technology (BAT).
- → Sustainable Mobility Plan.
- → In-house waste treatment plant that reduces the distance our waste has to travel to only 3.2 km.

Company and contact information

The Cosentino® Group is a Spanish, family-owned company with a global reach that is dedicated to the design, manufacture, production, distribution and marketing of innovative surfaces for the world of architecture and design.

Our purpose of '**Inspiring people through innovative and sustainable spaces**' marks the strategic approach of our corporate culture: environmental, economic and social sustainability as the only way to imagine and commit to the future.

The group bases its development on global expansion, a ground-breaking programme of research and development, respect for the environment and sustainability, and its ongoing corporate commitment to society and the local communities in which it operates, promoting training, equality and occupational safety. From its headquarters in Almería (Spain), Cosentino® Group markets its products and brands in 116 countries on all five continents, with its own facilities in 40 of them.

A passion for change drives Cosentino® Group to immerse itself in a constant process of continuous improvement to become a company that is increasingly more responsible about safety and the environment. Innovation is part of Cosentino® Group's culture and purpose. Innovating is in the daily lives of everyone in the Group in order to think ahead and anticipate future needs.

As a result of this approach, in 2020 the commitments made with regard to the UN Sustainable Development Goals have been strengthened in order to successfully tackle the ecological transition, with major social and environmental challenges facing the world.

→ Cosentino® City Sydney/Atelier LAB

Environmental commitment

Since its inception, the company has implemented measures aimed at preventing and improving the environmental variables of its immediate surroundings. Use and maintenance of Silestone® and ECO by Cosentino® colours.

At Cosentino® we are moving forward with an international momentum towards the full transition to a **low-carbon economy**, promoting circular economy, energy efficiency, emissions reduction and sustainable mobility.

At the Cosentino® Group we are firmly committed to the circular economy. In this respect we continue to invest resources and efforts so that, year after year, the **circular economy** and waste recovery is reflected in Cosentino®'s range of colours and products.

At Cosentino® Group, we identify any **environmental risks** that may result from our activity. During 2020, there were no fines or monetary sanctions for non-compliance with environmental laws or regulations.

Cosentino® Group remains committed to **sustainable innovation**, aspiring to ensure that its products offer the best qualities of respect for the environment and safety, offering materials with a significant content of recycled and/or recovered raw materials in their formulation.

→ Olive tree in the Cosentino® industrial park

Policies and actions in favour of sustainability and environmental awareness

Cosentino® Group is one of the world's leading companies in its sector in terms of investment in environmental awareness and improvement policies and actions. Examples include the following actions:

Environmental management

→ 2020 - global roll-out of investments in environmental assets worth more than €15 million and expenditure on environmental control and improvement of more than €10 million was launched.

→ 2020 - we also continued to develop the Gensuite® tool, which has enabled us to keep track of all the environmental aspects and incidents that concern the company's day-to-day operations.

Innovation and sustainable transformation

→ In 2020 we launched our Hybriq® and Hybriq+® technologies for Silestone®, which label all colours and series with a recycled or recovered raw material content of more than 20 %. Currently, 24 colours are available with HybriQ+® technology.

→ Our commitment to incorporating recycled or recovered material in our products has led to the production of up to 1.45 million m^2 of products using recycled or recovered raw materials (representing 22 % of our production for Silestone®).

→ LED lighting throughout Cosentino®'s industrial park

Circular economy and waste prevention

- In 2020, Cosentino® produced 1.45 million square metres of surfaces with recovered materials, representing 22 % of the total production.
- One of our major milestones in 2018 was the launch of our own Waste Management and Recovery Plant. In 2020 the company began to adapt these facilities to ensure the long-term storage and treatment of the waste generated.
- Participation in the 'Economía Circular en Acción' [Circular Economy in Action] platform and adherence to the 'Pacto por una Economía Circular' [Pact for a Circular Economy], promoted by the Spanish Ministry for Ecological Transition and Demographic Challenge (MITECO, in Spanish).
- 26 % increase in the consumption of recycled or recovered raw material compared to 2019.
- It has been considered that 100 % of the waste generated at the end of the product's life cycle is disposed of in an inert landfill, when it is known that many customers (especially in Nordic countries) are recovering the waste and reusing it in various processes such as infrastructure manufacturing. Research on external lines include:
  - Civil engineering and construction materials:
  - Technosols.
  - Ceramics industry.

Cosentino®'s decarbonisation strategy

- We have a firm commitment to achieve carbon neutrality for some Silestone® series through international voluntary offset projects certified and within the framework of the Voluntary Carbon Market.
- In 2020 Cosentino® signed a framework partnership agreement with the environmental association SUSTENTA, through which we are promoting an adaptive environmental management project to offset emissions in our region.

Sustainable mobility

- In 2020 the company launched the 2nd edition of the Business Mobility Plan with a set of 20 actions aimed at studying and analysing the present and future situation, quantifying all movements both internal and external to the organisation.

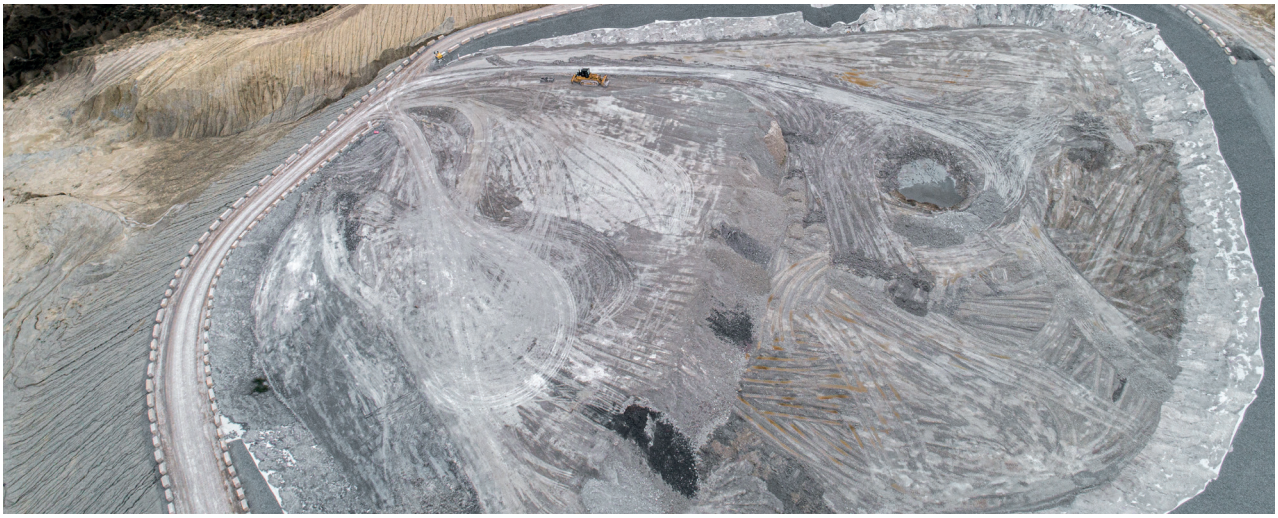
Biodiversity and natural capital

- Landscape project surrounding our facilities: a Green Belt in our Cantoria Industrial Park (Almería, Spain). Phases 1 to 4 of the project have already been completed, reaching approximately 140,000 m2 to date.
- None of the Cosentino® industrial park facilities are located in an area where there are nearby protected habitats or sites of special environmental interest.

Environmental indicators

- 2020 marked the second year of operating our own non-hazardous waste treatment and recovery plant through the subsidiary 'Environmental Solutions COMA'.
- In 2020 we built new, clean areas in the main factories within the industrial park, improving both the segregation of waste and the efficiency of the factory's 'door to door' collection service.
- We managed around 400,000 tons of waste.
- We recovered 45 % of the waste generated.
- We increased the waste recovery rate by 37 % compared to 2019.
- Non-hazardous waste: 44 % is directly reused within the production chain to make new products, thus strengthening the circular economy as a fundamental point in our waste management strategy.
- Hazardous waste: the total weight of hazardous waste transported was more than 4,000 tons, of which 2,300 tons have been recovered. The recovery rate represents 56 % of waste management.
- Sustainable water usage policy: in 2020 we increased our recycling levels by 80 % compared to 2019.
- Energy efficiency. 100 % of our electricity needs in the Cantoria Industrial Park are covered through renewable energy sources with certified origin.
- The heat recovery system project at the Silestone® plant to reduce gas consumption has been implemented, with an estimated saving of 12.45 GWh/year.
- For the third year in a row, we have calculated our Organisational Carbon Footprint in accordance with the new version of the UNE-EN ISO 14064-1:2019 Standard. Indirect Emissions account for 87 % of our Organisational Carbon Footprint.

→ Cosentino®'s waste management plant



→ Aerial view of the Cosentino® industrial park

Main accreditations and awards 2020

Cosentino® has a management system based on a set of interconnected and transversal rules and principles, which contribute to the internal management of our processes. The effectiveness of our management system is verified by several external certification bodies that endorse our commitment and generate added value both for our direct value chain and for society in general.

ISO 9001:2015 QUALITY MANAGEMENT SYSTEM

This certification ensures that our customers receive high quality products and services, increasing customer satisfaction through a process of continuous improvement. It covers the design, manufacturing, production, distribution, sales and marketing areas of the company.

ISO 14001:2015 ENVIRONMENTAL MANAGEMENT SYSTEM

This certificate recognises and consolidates the quality of the Cosentino® Environmental Management System. Its scope covers the entire process in which the company is involved, from the design, manufacture and transformation of its products, to their distribution and marketing. Among other aspects, it certifies the efficient use of raw materials, the control of atmospheric emissions, waste management programmes, industrial water treatment and reuse systems, the disposal of chemical substances and the control of environmental risks.

ISO 20400:2017 SUSTAINABLE PROCUREMENT MANAGEMENT SYSTEM

UNE 15896:2015 VALUE ADDED PURCHASING MANAGEMENT

In 2020 we renewed our UNE 15896:2015 certification and successfully passed the first audit to adapt our processes to the ISO 20400:2017 standard. This demonstrates our commitment to best market practices, both in terms of purchasing management and continuous improvement, as well as our commitment to sustainability.

Product certification

We hold more than 20 product certificates, verified self-declarations and published voluntary tests of our products, of which more than 10 certificates are audited on an annual or biannual basis together with regular tests carried out both internally and externally, depending on the requirements of each certificate.

The major topics covered by these certificates are:

- → Food contact.
- → Volatile emissions.
- → Environmental certifications.

Prizes and Awards 2020

Products / Brands

→ Silestone® by Cosentino®, voted The Best Work Surface at the Bathroom and Kitchen Update Awards (BKU Awards 2020) (UK).

Cosentino® Group

→ Cosentino® Group, Spanish National Mobility Award in the 'Mobility to Work' category awarded in 2021 by 'Empresas por la Movilidad Sostenible' (Companies for Sustainable Mobility) in recognition of actions implemented in 2020.

→ Cosentino® Group, recognised in the 1st Edition of the UK-Spain Business Awards, promoted by the International Trade Department of the British Embassy in Spain (United Kingdom).

→ Cosentino® Group, recognised as Best Ambassador Company of Southern Spain at the 1st Edition of the PEC Awards by CESUR (Association of Entrepreneurs of Southern Spain) (Spain).

→ Cosentino® Group, recognised by the Iberia airlines as Best Company in the Southern Delegation as part of its Fitur Awards (Spain).

→ Cosentino® Group, awarded with Ponce de León 'Company of the Year' prize by the Spain-US Chamber of Commerce (USA).

→ Stevie Awards for the publication 'C-Top Restaurants' by Cosentino®.

→ The US insurance company PMA Companies awards the risk and safety management of Cosentino® North America.

→ 'Inspiration Day', winner of the Best Internal Event for up to 500 employees category at the Dircom Ramón del Corral awards.

→ 'Cosentino® One', awarded as Best Internal Publication at the Dircom Ramón del Corral awards.

→ 'Cosentino® TV Magazine', winner of the Best Corporate Radio and Television category at the Dircom Ramón del Corral awards.

Contact Cosentino®

This Environmental Product Declaration is the property of Cosentino®, S.A.U.

The address of the company and its place of manufacture, as well as the company's contact for any enquiries, are:

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Product information

Cosentino Group remains committed to sustainable innovation, aspiring to ensure that its products offer the best qualities of respect for the environment and safety.

Product description and applications

Silestone® is the world's leading brand in the agglomerated stone surfaces category, which was first launched in 1990. Composed of more than 90 % inorganic minerals, it is a non-porous, highly stain resistant surface for architecture and design. The main technical characteristics of the product are specified in the product data sheet, which can be consulted on the website www.cosentino.com.

Silestone® by Cosentino® is classified under CPC code 373 ("Refractory products and structural non-refractory clay products").

Fully aware of the importance of continuous innovation and the concerns of today's citizens, Cosentino® Research and Development began its journey into products incorporating recycled materials with its ECO by Cosentino® series by Silestone®. To this end, Cosentino® Research and Development has developed the new HybriQ® manufacturing technology, a technological innovation to create more sustainable and environmentally friendly products.

HybriQ+® contains a minimum of 20 % recycled materials and is manufactured using only certified renewable energy and 99 % recycled water. The result is a more beautiful and sustainable product. This new generation maintains the high quality that characterises Silestone® surfaces. HybriQ+® technology is a further step in Cosentino®'s commitment to offer the most innovative and sustainable products on the market.

All this makes the new Silestone® the standard of beauty, cutting-edge innovation and unparalleled sustainability.

Silestone® by Cosentino® has become the best partner for architects and designers all over the world due to its great versatility of applications. Seamless surfaces and spaces, without limits and without joints, available in large format and suitable for indoors:

→ Flooring and cladding
→ Kitchens
→ Bathrooms
→ Furniture

Content declaration

Silestone® is mainly composed of various inorganic minerals and resin, with the remaining components being pigments and additives, all in different proportions depending on the colour.

Table 3: Silestone® composition

COMPOSITION	WEIGHT, KG	POST CONSUMER MATERIALS, WEIGHT, KG	RENEWABLE MATERIALS, WEIGHT, KG
Inorganic minerals	878	7	-
Resin	106	-	-
Pigments	7	-	-
Additives	9	-	-
PACKAGING MATERIAL, KG	**WEIGHT, KG**	**WEIGHT - % (IN RELATION TO THE PRODUCT)**	
Metal trestle	0.6	0.06 %	

Cosentino® is pleased to confirm that, after analysing the formulation of Silestone®, our product complies with the REACH regulation, according to the report issued by the external laboratory Tecnalia with number 090877-2. The REACH regulation addresses Substances of Very High Concern (SVHC), which are published by the European Chemicals Agency (ECHA) and listed in Annex XVII of the REACH regulation.

Functional unit

The functional unit is the reference used to express all the data of this Life Cycle Analysis. In this case, manufacturing, transport use and end of life (from the cradle to the grave) has been selected as the functional unit of one ton (1,000 kg) of Silestone®.

Description of processes and system limits

This document contains the Environmental Product Declaration (EPD) of the Silestone® construction surface and the results of its Life Cycle Assessment (LCA). For this purpose, we have based this on data collected during 2020 and on the previous Silestone® EPD published in 2019, with EPD No. S-P-01269. The calculations were carried out using the SimaPro software, version 9.2, which is fed by more than 4,000 Ecoinvent databases, version 3.7.

50 years is considered a typical life for the product.

This study has been carried out to understand the environmental impact of this construction surface, including all the stages of the life cycle ('from the cradle to the grave'). This means that the results reflect the analysis of the production, transport, installation, use and end-of-life phases. Other objectives of this study are to establish a systematic process of continuous improvement in all phases of this cycle, and to achieve the basic results to publish an Environmental Product Declaration (EPD)

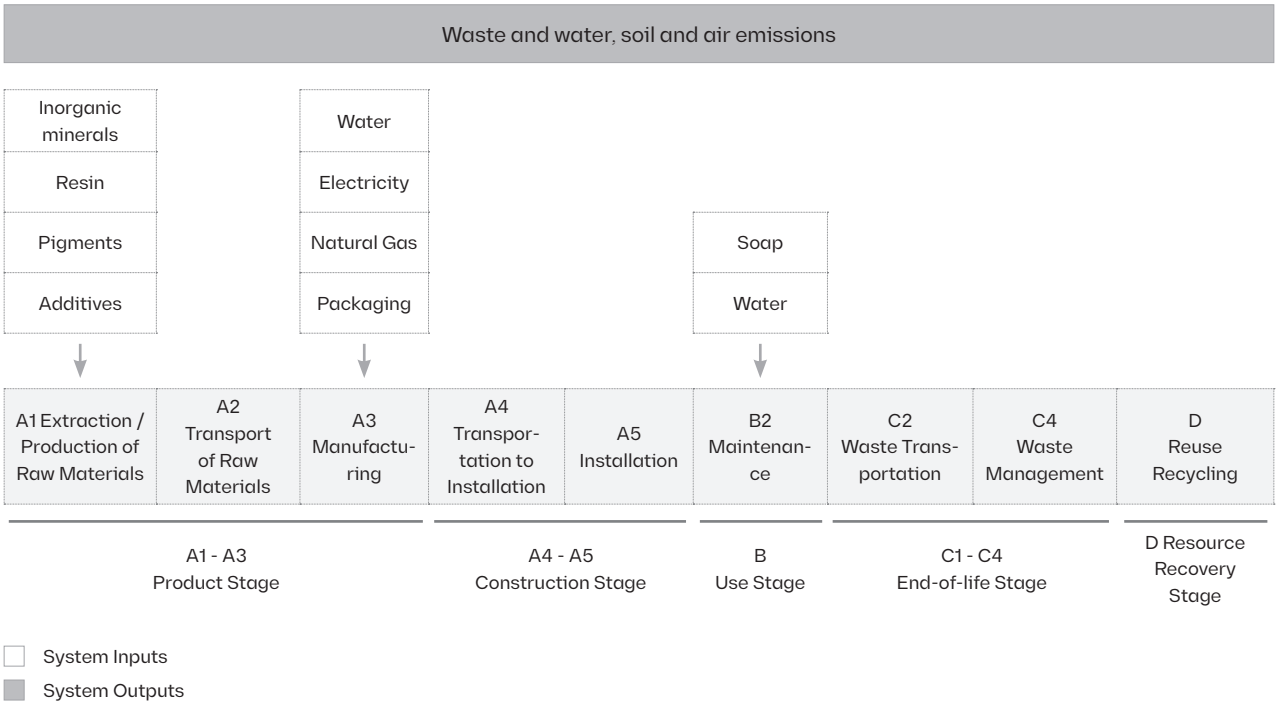
The system boundaries determine which processes are included in this declaration. This document considers each of the processes of raw material procurement and product manufacture, transport to the customer and end of life of the product (from cradle to grave with options).

The general description of the processes considered and the system boundaries is as follows:

Table 4: Description of system boundaries (X = included; NDM = Non-Declared Module)

	PRODUCT STAGE			CONSTRUCTION STAGE		USE STAGE							END-OF-LIFE STAGE				BENEFITS AND CHARGES OUTSIDE THE SYSTEM LIMITS
	Raw materials	Transportation	Production	Transportation	Installation	Use	Maintenance	Repair	Substitution	Rehabilitation	Energy use	Water use	Demolition	Transportation	Waste treatment	Discharge	Reuse, recycling and recovery
Declared modules	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Geographic location	Int.	Int.	Int.	Int.	Int.	Int.	Int.	Int.	Int.	Int.	Int.	Int.	Int.	Int.	Int.	Int.	Int.
Specific data	More than 99 % specific data is used in this EPD																
Variation - products	Less than 10 % within each product group																
Variation - sites	Less than 10 %																

Figure 1: System boundaries including modules



Product Stage (A1 - A2 - A3)

The product stage is subdivided into three modules: A1, A2 and A3, that respectively represent supply of raw material, transport to manufacturer and manufacture. These modules are described below, and include additional technical information.

A1: Supply of raw materials.
This includes the extraction and transformation of raw materials that takes place upstream of the production process of Silestone®.

A2: Transportation from the supplier to the factory.
The raw materials are transported to the factory. The modelling includes road and/or boat transportation of each raw material.

A3: Production.
This stage includes the manufacture and packaging of the product, as well as the treatment of waste and water generated during production.

The Silestone® manufacturing process consists of several phases: the first phase starts with the reception, storage, transport and mixture of shredded and micronised elements of the raw material. In this process, the inorganic material formed by mineral compounds in different sizes, the resin, pigments and the other minority compounds are incorporated. In the case of colours with recycled components, such as the ECO by Cosentino® or HybriQ+®, other components are added which, after being adequately processed, make up its composition.

Within this process, Cosentino® carries out this phase through the use of capturing, aspiration and advanced dust filtration methods to minimise these emissions into the atmosphere, using hoppers, enclosures with automatic shelter doors and aspiration by bag filters. It has also minimised the route of transported material in such a way that the possibilities of discharges to the environment are reduced. The entire facility is closed with fairing tape and hermetic enclosures.

After the mixing process, the material is moved to the vibro-compression zone, where it is subjected to a process in which it is compressed to eliminate the air while vibrating. This process achieves a consistent, homogeneous and pore-free material.

After this process, the material is transported to the material, where the resin polymerisation is produced. Subsequently, the material is allowed to cool for 24-72 hours to eliminate internal tensions.

The next step is to cut, calibrate and polish the slabs. These operations are carried out with abrasives and water, which is 99 % recycled.

Finally, the slabs are controlled by means of photometric devices through which the uniformity, tonality, etc. of the different Silestone® by Cosentino® products is verified. The process ends with the labelling and storage of the product.

Construction stage (A4 - A5)

This stage consists of the following modules:

A4: Transportation to the installation site.
The average transport of one ton of Silestone® has been considered, assuming transport by 16-32 ton lorries and/or trans-oceanic container ships. For this purpose, the weight of the product taken to each destination has been analysed, taking into account the route taken and the number of kilometres travelled by lorry and/or ship.

Table 5: Module A4 description

PARAMETER	UNIT (EXPRESSED PER FUNCTIONAL UNIT)
Type and consumption of vehicle fuel, type of transport vehicle; for example, long-distance lorries, ship, etc.	Transport lorry 16 - 32 ton EURO 6. Trans-oceanic container ship
Distance	Lorry: 968 km Ship: 3,445 km
Capacity use (including the empty return)	% assimilated in Ecoinvent 3.7
Bulk density of the products transported	2,500 - 2,610 Kg/m^3
Useful capacity factor	1

A5: Installation stage.
In this case there is no product wastage, as it is reused on site.

Waste generated by the packaging, in this case the steel trestle used during transportation, must also be taken into account. We operate a system for returning or repairing trestles so that, in 2020, only 1.9 % of the returned trestles were discarded, the rest being repaired.

Use Stage (B1-B7)

In this stage the following modules are considered:

- → B1: Direct use of the product
- → B2: Maintenance
- → B3: Repair
- → B4: Substitution
- → B5: Rehabilitation
- → B6: Operational energy use
- → B7: Operational water use

In this case, only the following module applies:

B2: Maintenance Stage.
Silestone® is low maintenance and requires only neutral liquid soap and water for cleaning.

The direct use of the product (B1) phase has a value of 0. Also, as energy consumption is not required during the use of the product, B6 phase also has a value of 0.

The technical properties of the product (hardness, resistance to scratching, abrasion or stains...) make repair, replacement or rehabilitation of Silestone® unnecessary, so phases B3, B4 and B5 have a value of 0.

Table 6: Module B2 description

PARAMETER	UNIT (EXPRESSED PER FUNCTIONAL UNIT)	VALUE
Maintenance process	Description of the source where the description can be found	Cosentino® (2020)
Maintenance cycle	Number of cycles per year	50 cleans (one per week)
Auxiliary materials for maintenance	Kg/cycle	0.2 kg soap/year
Quantitative description of the type of energy and use during maintenance (for example, aspiration), energy, (for example electricity), and import, where appropriate, and relevance	kWh or MJ	0
Net water consumption	m^3	0.0008 m^3/year
Direct emissions into the air, soil or water	Kg	0
Waste resulting from maintenance specified by type	Kg	0 kg/year to landfill
Destination (specified by type) of waste resulting from maintenance, for example collection for recycling, for energy recovery, disposal; specified by route	Kg	0 kg/year to landfill
Type of vehicle used for transportation, specifying the type of waste and output materials.	Lorry	Lorry is always used
Load capacity of the vehicle	t	16 - 32
Vehicle type and consumption	Diesel	0.0165 kg/tkm
Distance to construction site	km	25
Utilisation capacity (including returns)	%	100
Density of transported products	Kg/m^3	1,000
Volume capacity usage factor (factor: = 1 or <1 or ≥ 1 for compressed packaged products)	-	1

End-of-life Stage (C1 - C4)

In this stage the following modules are considered:

→ C1: Demolition
→ C2: Transportation to the waste treatment centre
→ C3: Treatment for reuse, recycling or rehabilitation
→ C4: Final Disposal

The dismantling of Silestone® can be considered negligible in the overall demolition of a building, which in itself represents a very low impact considering the lifetime impact of the product. Therefore, C1 can be considered irrelevant.

With respect to the management of the product after the end of its useful life, it is an 'engineered slab' and therefore inert before and after its management as waste. In case of disposal by incineration, the product is not flammable and does not burn. For this reason, the deposit of Silestone® in an inert landfill has been considered as the end of life. Taking this into account, C3 is considered 0.

Resource Recovery Stage (D)

This stage covers the reuse, recycling and recovery of the product after the end of its useful life.

Although considerable work has been undertaken through various R&D projects aimed at finding technically and economically viable methods of recycling and recovery, it has not yet been possible to collect sufficient data to quantify the results.

Therefore, to date and worldwide there are no potential savings from its recycling or reuse, as the product is entirely destined for disposal in an inert waste treatment facility.

Table 7: Stage C1 - C4 description

PARAMETER	UNIT (EXPRESSED PER FUNCTIONAL UNIT)	VALUE
C1 Deconstruction		
Collection process specified by type	Kg collected separately	0
	Kg collected mixed with construction residues	1,000
C2 Transportation		
Type and consumption of vehicle fuel, type of vehicles used for transport	Transport lorry > 20 ton EURO 6.	Diesel consumption: 0.0165 kg/tkm
Distance	km	50
Capacity use (including the empty return)	%	Assumed % in Ecoinvent 3.7 database
Bulk density of the products transported	Kg/m^3	2,500 - 2,610
Useful capacity factor	-	1
C3 Waste processing		
Recovery system specified by type	Kg for reuse	0
	Kg for recycling	0
	Kg for energy recovery	0
C4 Disposal		
Disposal specified by type	Kg of product for final disposal	1,000 Kg deposited in a controlled landfill site

Data quality and additional information

Data quality and allocation criteria

All the data used in the modelling of the processes was obtained during a whole year of production (2020). The data reflect, in a representative way, the activities currently carried out by the company for the production of Silestone®. The data specified in this document are valid for the EPD until there are substantial modifications that affect the impact produced. An increase of more than 10 % in the environmental impact per functional unit is considered substantial modification.

A sensitivity analysis has also been carried out to verify that the impact does not exceed 10 % for the different formulations used (taking into account the raw materials with the highest impact factor), as well as for the different finishes used.

All the data used has been measured specifically at the facilities. Ecoinvent 3.7 was selected as the reference database because it matches the geographical area, technology equivalence, and boundaries with respect to the natural and technical systems of the process, and because it contains over 4,000 life cycle inventories and is updated frequently. In fact, the latest update made is from this year.

However, the following improvements have been made to make the process description more representative:

- → In the case of Cosentino®, the electricity supplier company guarantees that 100 % of the electricity consumption comes from renewable sources. Considering the proportional contribution of renewable energy sources to the electricity production mix of Endesa (Spanish electric utility company supplying 100 % of Spanish electricity, 2018), the electricity consumed in the Silestone® factory is 64 % wind, 25 % hydraulic and 11 % solar. Cosentino®'s commitment to renewable energy means that all the environmental impacts associated with electricity consumption in Silestone® are considerably reduced compared to the electricity consumption of the common Spanish electricity mix.
- → All materials, processes, air emissions, water and soil emitted during the life cycle of the product have been considered in this EPD.
- → An average distance of 50 km is considered for the transportation of waste to landfill sites, a more conservative distance than the 25 km considered in the previous Silestone® LCA.
- → It has been considered that 100 % of the waste generated at the end of the product's life cycle is disposed of in an inert landfill, when it is known that many customers (especially in Nordic countries) are recovering the waste and reusing it in various processes such as infrastructure manufacturing. However, as robust and representative data on the actual figures of this practice in relation to total waste generation are not yet available, we have considered the most conservative option.
- → The emission factor values have been updated for one of the most critical raw materials in terms of environmental impact, resin. For this purpose, actual data on energy and water consumption in 2020 has been collected from Cosentino® resin suppliers and, based on this, the processes for STD and HDT Resin have been updated in SimaPro.

All materials, processes, air emissions, water and soil emitted during the life cycle of the product have been considered in this EPD and allocations have been made by mass.

With regard to the cut-off criteria, in the case of the raw materials used for the manufacturing of Silestone®, the typologies of raw materials, basically additives, have been excluded as it has not been possible to identify the corresponding processes applicable to these raw materials. The sum of these two raw materials only represents 0.245 % of the total impact of module A1, which complies with UNE-EN ISO 14044:2006, as well as with UNE-EN 15804:2012+A2:2019 on the cut-off criteria (less than 5 % of the module and less than 1 % of the total impact).

Environmental information

This section provides information on the environmental performance of the product according to Multiple UN CPC codes 2012:01 Construction Products and Construction Services (version 2.3).

All the values shown in the following tables refer to the functional unit of this study (one ton of product). Tables 9 and 10 describe the environmental behaviour and resource use of Silestone®, always expressed in values per functional unit.

The units, environmental impact indicators and conversion factors selected, are those set out in UNE-EN 15804:2012+A2:2019 and those established in the EN 15804 +A2 Method V1.00/ EF 3.0 Normalization and Weighting Set for the calculation of environmental impact. This methodology is fully developed and used at European level thanks to the reliability of its data and scientific basis, which are based on EF 3.0 Method and UNE-EN 15804:2012+A2:2019.

The Cumulative Energy Demand (CED) methodology, version 1.11 developed by Frischknecht et al. (2007) was used to calculate the primary renewable energy consumed, while the AWARE methodology (2016) was used to calculate the water footprint.

The calculated impact categories coincide with the proposals in Multiple UN CPC codes 2012:01 Construction Products and Construction Services (version 2.3) and the results have been divided according to the stages and modules described in section 4. SimaPro software version 9.1.1.1. was used to calculate this data.

The calculated impacts are potential and always considering standard operating conditions.

The parameters describing the use of resources and environmental information based on the Life Cycle Inventory (LCI) are those described in UNE-EN 15804:2012+A2:2019 as basic environmental impact parameters which are detailed and defined below:

Table 8: Environmental impact parameters

IMPACT CATEGORY	PARAMETER	UNIT
Climate Change - Total	Total Global Warming Potential (GWP - total)	Kg CO_2 eq
Climate Change - Fossil Fuels	Global Warming Potential of Fossil Fuels (GWP - fossil)	Kg CO_2 eq
Climate Change - Biogenic	Biogenic Global Warming Potential (GWP - biogenic)	Kg CO_2 eq
Ozone Layer Depletion	Stratospheric Ozone Depletion Potential (ODP)	Kg CFC11 eq
Acidification	Acidification potential, cumulative surplus (AP)	mol H+ eq
Freshwater Eutrophication	Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater)	Kg P eq and Kg PO43-
Marine Eutrophication	Eutrophication potential, fraction of nutrients reaching marine water end compartment (EP-marine)	Kg N eq
Terrestrial Eutrophication	Eutrophication potential, cumulative surplus (EP - terrestrial)	mol N eq
Photochemical Ozone Formation	Photochemical Ozone Formation Potential (POFP)	Kg NMVOC eq
Abiotic Resource Depletion - minerals and metals	Abiotic resource depletion potential for non-fossil resources (ADP - minerals&metals)	Kg Sb eq
Abiotic Resource Depletion – fossil fuels	Abiotic resource depletion potential for fossil resources (ADP - fossil)	MJ

Note that estimated impact results are only relative statements, which do not indicate the end points of the impact categories, upper limit values, safety margins or risks.

Table 9: Environmental Behaviour per functional unit (1,000 kg Silestone®)

IMPACT CATEGORY	UNIT	TOTAL	A1 - A3 Product	A4 Transportation to Installation	A5 On-site Installation	B2 Maintenance	C2 Waste Transportation	C4 Waste Management	D Recovery
Climate Change - Total	Kg CO_2 eq	1.05,E+03	8.63,E+02	1.65,E+02	1.05,E-03	1.23,E+01	8.15,E+00	5.27,E+00	0.00
Climate Change - Fossil	Kg CO_2 eq	1.03,E+03	8.51,E+02	1.64,E+02	1.05,E-03	3.98,E+00	8.13,E+00	5.25,E+00	0.00
Climate Change - Biogenic	Kg CO_2 eq	1.29,E+01	1.06,E+01	2.65,E-01	3.25,E-06	2.06,E+00	1.97,E-02	1.63,E-02	0.00
Ozone Layer Depletion	Kg CFC11 eq	1.66,E-04	1.19,E-04	4.20,E-05	4.33,E-10	6.25,E-07	1.85,E-06	2.16,E-06	0.00
Acidification	mol H+ eq	7.01,E+00	5.25,E+00	1.64,E+00	9.91,E-06	4.86,E-02	2.26,E-02	4.96,E-02	0.00
Freshwater Eutrophication	Kg P eq	2.40,E-01	1.93,E-01	1.11,E-02	9.80,E-08	3.52,E-02	5.56,E-04	4.90,E-04	0.00
	Kg PO43- eq	7.37,E-01	5.92,E-01	3.41,E-02	3.01,E-07	1.08,E-01	1.71,E-03	1.50,E-03	0.00
Marine Eutrophication	Kg N eq	1.42,E+00	9.61,E-01	3.83,E-01	3.46,E-06	5.27,E-02	4.71,E-03	1.73,E-02	0.00
Terrestrial Eutrophication	mol N eq	1.52,E+01	1.05,E+01	4.23,E+00	3.79,E-05	1.77,E-01	5.12,E-02	1.89,E-01	0.00
Photochemical Ozone Formation	Kg NMVOC eq	6.09,E+00	4.79,E+00	1.20,E+00	1.10,E-05	2.80,E-02	1.96,E-02	5.49,E-02	0.00
Abiotic Resource Depletion – minerals and metals	Kg Sb eq	6.70,E-03	6.09,E-03	4.90,E-04	2.35,E-09	8.12,E-05	2.99,E-05	1.17,E-05	0.00
Abiotic Resource Depletion – fossil fuels	MJ	1.85,E+04	1.54,E+04	2.78,E+03	2.94,E-02	4.15,E+01	1.23,E+02	1.47,E+02	0.00
Water Consumption	m^3 depriv.	4.44,E+02	4.09,E+02	6.89,E+00	1.32,E-03	2.14,E+01	3.57,E-01	6.61,E+00	0.00

NOTE | Disclaimer: The results of this environmental impact indicator shall be used with caution as the uncertainties of these results are high or experience with the indicator is limited.

Table 10: Use of resources per functional unit (1,000 kg Silestone®)

PARAMETER	UNIT	TOTAL	A1 - A3 Product	A4 Transportation to Installation	A5 On-site transportation	B2 Maintenance	C2 Waste Transportation	C4 Waste Manaagement	D Recovery
PERE	MJ	1.87,E+03	1.78,E+03	2.49,E+01	2.38,E-04	5.93,E+01	1.77,E+00	1.19,E+00	0.00
PERM	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERT	MJ	1.87,E+03	1.78,E+03	2.49,E+01	2.38,E-04	5.93,E+01	1.77,E+00	1.19,E+00	0.00
PENRE	MJ	2.00,E+04	1.67,E+04	2.96,E+03	3.13,E-02	5.20,E+01	1.31,E+02	1.56,E+02	0.00
PENRM	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PENRT	MJ	2.00,E+04	1.67,E+04	2.96,E+03	3.13,E-02	5.20,E+01	1.31,E+02	1.56,E+02	0.00
SM	Kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NRSF	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FW	m^3	4.74,E+02	4.39,E+02	6.86,E+00	1.32,E-03	2.11,E+01	3.54,E-01	6.61,E+00	0.00

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 resources;
SM = Use of secondary material;
RSF = Use of renewable secondary fuels;
NRSF = Use of non-renewable secondary fuels;
FW = Use of net fresh water

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