Environmental Product Declaration

Compliant with ISO 14025 and EN 15804:2012+A2:2019 for:

BAXAB®ECO SURFACE HARDENER COATING FOR BUILDING CONSTRUCTION

de

TOPCRET

Program:	The International EPD® System, www.environdec.com
Program manager:	EPD International AB
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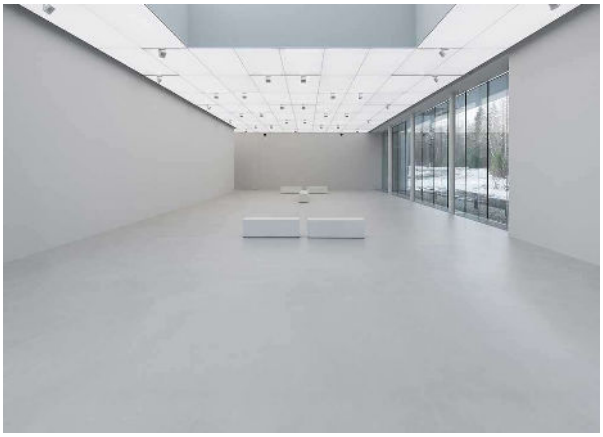
An EPD must provide current information and may be updated if conditions change. Therefore, the stated validity is subject to continuous registration and publication at www.environdec.com.



General information

Program Information

Program:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
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CEN EN 15804 serves as the basis for the Product Category Rule (PCR).
Product Category Rules (PCR): PCR 2019:14 Construction Products (EN 15804: A2), (1.11)
The PCR review was conducted by: The International EPD® System Technical Committee. President: Claudia A. Peña. *Contact through info@environdec.com*
Independent third party verification of EPD and data in accordance with ISO 14025:2010: ☐ Certification of EPD procedure ☒ EPD Verification
Third Party Verifier: *CTME Centro Tecnológico de Miranda de Ebro* Auditor: Lorena Pereda Accredited by: The International EPD® System
The procedure for tracking data during the validity of the EPD involves a third party verifier: ☐ Yes ☒ No

The EPD owner presents the sole ownership and responsibility for the EPD.

EPDs within the same product category, but from different programs may not be comparable. EPD construction products may not be comparable if they do not comply with EN 15804. For more information on comparability, please refer to EN 15804 and ISO 14025.

Company-related information

EPD owner: TOPCRET TECNOLOGIA EN REVESTIMIENTOS SL, Gran Vía de les Corts Catalanes 828, Barcelona – Spain.

Contact: Alejandro A. Romero Benedetti - Managing Director UK & Ireland
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Organization description: Topcret® was born from the initiative of two young enterprising engineers who chose to break away from the maelstrom of the construction sector by creating their product Microcemento®, a cement-based micro-coating that would revolutionize the field of design and interior design. When professionals in the sector were focusing on new construction, we brought an innovative element that offers the possibility of carrying out radical renovations with minimal environmental impact, without generating debris or waste.

Defying the crisis that affected the sector, but with effort, organization, vision and control of our first works, we managed to organize the company we are today: more than 30 employees, a subsidiary in London, 80 franchises spread over the five continents and an innovative product, unique in the market (Baxab®), which distances us from the competition since our birth in 2005.

At Topcret®, we are now setting ambitious but realistic objectives. The intense activity of the R&D Department, in constant improvement of the product, places us as leaders in the sector. The continuous search for customer satisfaction is the driving force to continue growing as a company and to contribute our grain of sand to society. To this end, we have implemented the ISO 9000 standard, which will keep us on the road to excellence in service and quality.

Certifications or management system related to the product:

- ISO 9001.
- ISO 14001.
- Content:
- LEED V4.1 Voc Content (Feb 2021).
- SCAQMD Rule 1113 (Feb 2016).
- Voc emissions:
- French VOC regulation.
- Italian CAM Edilizia.
- ABG/Agbb.
- Belgian regulation.
- Indoor air comfort.
- BREEAM International.
- BREEAM NOR.
- CDPH.
- M1.

Production site: Calle Edison, Nº 21 de Barbera del Valles, 08210 – Barcelona – Spain.

Product information

Name of the products: **Baxab**.

Product identification: This EPD represents Topcret's Baxab®Eco series.

UN CPC Code: 375, belonging to the group of Articles of concrete, cement and plaster.

Product description: **Baxab®Eco** is the most technologically advanced microcement on the market, thanks to the combination of two new and unique materials. Baxab®Eco achieves levels of resistance to abrasion, scratches and impact never reached by other products in the segment. It allows intensive and prolonged use, not only in homes but also in commercial premises, public spaces and other high-traffic areas. It does not require joints of any kind

because it has additives that prevent the product from cracking by itself and is available in a wide variety of colors. Its surface hardness can be compared to that of a ceramic tile (See Illustration 1).

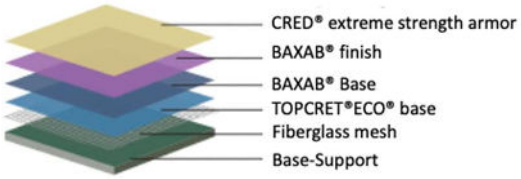

Illustration 1. Microcement application within the Baxab®Eco surface coating system.

Products		Layer	Products	Number of layers
Baxab®Eco	Base Topcret@Eco	2 (first to put fiberglass mesh)	Microcement Base Powder Microcement Base Liquid	2 1
	Base Baxab®	1	Baxab® Component C BCED Concentrated Liquid Component B BCED Liquid Concentrate Component A	3 2 1
	Finishing Baxab®	2 (smooth finish) 1 (rustic finish)	NF NF Liquid Concentrate NF Hardener	150g 100g 16g
	Sealing	2 (smooth finish) 3 (rustic finish)	CRED Shielding Component 1 CRED Shielding Component 2	87% 13%

BAXAB®ECO, THE MOST TECHNOLOGICALLY ADVANCED MICROCEMENT:

- 3 times stronger than conventional microcements.
- Its high resistance allows for intensive and prolonged use, not only in homes but also in commercial premises, public spaces and other high traffic areas.
- With a thickness of less than 2 mm and its fast application time, it is ideal for remodeling works since it does not require removing existing floors or changing openings or bases.
- Available for use 24 hours after application.
- It is totally waterproof, so it can be applied in kitchens, bathrooms and any humid area.
- Available in a wide range of colors, seamless and with its hand-troweled finish, BAXAB®Eco achieves surfaces of great quality and beauty.

Table 1 shows the technical characteristics of the Baxab®Eco series:

Table 1. Technical properties of Baxab®Eco

PROPERTY and TESTING STANDARD	BAXAB®ECO
ADHESION RESISTANCE UNE-EN 13892-8:2003. Methods for testing materials for continuous screeds.	>3.3 N/MM2
SURFACE HARDNESS UNE-EN 13892-6;2003	120 N/MM2
DETERMINATION OF THE TRANSMISSION RATE OF LIQUID WATER (Permeability) UNE-ENV 1062-3:2008	0.01 KG/M2 H0.5
DETERMINATION OF BENDING PROPERTIES UNE-EN ISO 178:2003	1.3 KN/MM2
IMPACT RESISTANCE: UNE-EN ISO 6272: 2012	> 14.7 N/M
HEIGHT OF FALL AT WHICH THE FIRST CRACKS ARE OBSERVED	A 1500 MM
DIAMETER PRODUCED AT THIS HEIGHT	9.5MM
WEAR RESISTANCE BCA, UNE-EN 13892-2:2003	30 µM
Determination of chemical resistances, UNE- EN 13529	No defects after: 3 days: olive oil, red wine, alcohol, hair dye, vinegar, Viakal, lemon juice. Artificial aging, UNE-EN 1062-11 Item 4.2 (500 hours)
LEED V4.1 Voc Content (Feb 2021)	Pass
SCAQMD Rule 1113 (Feb 2016)	Pass
French VOC regulation	A+
Italian CAM Edilizia	Pass
ABG/Agbb	Pass
Belgian regulation: Pass	Pass
Indoor air comfort	Pass
BREEAM International	Exemplary level
BREEAM NOR	Exemplary level
CDPH	Pass
M1	Pass

Information related to Life Cycle Assessment

Declared unit: The manufacturing, distribution, installation, use and end of life of **one square meter (1 m^2) of the product Baxab®Eco with the function of surface hardening coating in construction for an expected service of reference lifespan of 50 years has been chosen as the declared unit.**

For additional information, it is mentioned that the conversion factor is 3.228 kg/m^2.

Expected service of reference: A expected service of 50 years is considered, according to the company's experience and the warranty offered to the customer.

Temporal and geographic representativeness: The primary data used were obtained from the Barcelona production center for the year 2021, being representative of the products and the production process.

In terms of market area, the products are marketed globally.

This document will be used for B2B communication, with a global scope.

Data quality: Specific data have been taken on the quantities of material and energy used during the life cycle of the product. These data have been supplied by Topcret, referring to the year 2021, and come from direct factory data.

Generic data on the impact per unit of matter or energy have been taken. These data have been obtained from the internationally recognized Ecoinvent database, version 3.8. This database has been selected as the reference database because it coincides with the input flows of matter and energy on the following aspects:

- Technological equivalence: the data are derived from the same physical and chemical processes, or at least the same technological coverage.
- Boundaries towards nature: the data contain all the quantitative information necessary for the EPD®.
- Limits towards technical systems: the considered stages of the life cycle are equivalent.

The treatment and processing of the data has been carried out in accordance with international standards ISO 14025, ISO 14040, ISO 14044 and UNE-EN 15804:2012+A2:2019.

LCA software and database used: The SimaPro 9.3 calculation software and the Ecoinvent 3.8 database were used for the study.

Description of the system boundaries: The EPD® presented is structured by the life cycle stages established according to the PCR 2019:14 reference standard for construction products, based on UNE-EN 15804:2012+A2:2019. This EPD® covers modules A1-A3, A4-A5, B1-B7, C1-C4 and D.

The life cycle stages analyzed are described below:

A1-A3 Product stage

The product stage is composed of the stages of raw material supply (A1), raw material transport (A2) and manufacturing (A3). As permitted by UNE-EN 15804:2012+A2:2019, the results of stages A1-A3 have been grouped into a single product stage (A1-A3).

A1- Supply of raw materials

This module takes into account the extraction and processing of raw materials and energy produced prior to the manufacturing process under study.

These mainly include binders of different nature (cement, chemical compounds such as BPA, resins, etc.), filler, water and other additives.

A2- Transport of raw materials

This module includes the transport of the different raw materials from the manufacturer to the factory where the final product is manufactured in Barbera del Valles (Barcelona). The data in kgkm correspond to each raw material, but the type of truck has been selected globally for all "Transport, freight, lorry >32 metric ton, EURO5 {RER}| transport, freight, lorry >32 metric ton, EURO5 | Cut-off, U".

A3- Manufacturing

This module includes the consumption of energy and packaging materials used during the manufacturing process. At the same time, factory waste, transportation and its management are analyzed. In-plant emissions not originating from the combustion of fossil fuels are discarded.

The manufacturing process consists of the stages described below (Fig. 3):

TOPCRET production process

Reception of Raw Materials	
Stock registration PM	
Powders	Liquids
Dosing and weighing of components	Weighing of components
Fine grinding of cosmetic components	Mixing
Weighing	
Mixing	
Packaging	
Palletizing	
Final product stocking	

A4-A5 Construction Process Stage

The Construction Process stage consists of modules A4 Transportation and A5 Construction Process - Installation.

Module A4 Transportation includes the transportation of finished and packaged products from the factory gate to the construction site for subsequent installation.

The mileage associated with the product has been considered based on its sales during the year 2021.

Table 2. Parameters of module A4: Transport

PARAMETER	VALUE EXPRESSED PER DECLARED UNIT
Type and fuel consumption of vehicle, type of vehicles used for transportation, e.g., long distance trucks, ship, etc.	• Large transport truck 16-32 t EURO6. Diesel consumption: 0.036646054 kg/tkm. • Merchant ship. Heavy fuel oil consumption: 0.0025 kg/tkm.
Distance	• Big truck: 2527.29 km • Merchant ship: 9825.74 km
Capacity utilization (including no-load return)	% assumed in Ecoinvent database
Bulk density of transported products	1614 kg/m^3
Useful capacity factor	1

Module A5 Installation Process includes all materials and energy used for the preparation of the product for use. At the same time, it takes into account the transport and management of packaging waste and its transport to a local waste manager.

At this stage, 5% wastage is considered. In the recommended scenario, the product is first removed with an electric drill with a power of 820W and a performance of 20 min for 200 m2. Then, the product is applied by hand to the desired surface with semicircular movements in the order of illustration 1.

In packaging waste management, the most updated treatment scenario of Eurostats (2019) is considered. Between treatments, final disposal takes place in a controlled landfill within a radius of 50 km.

Table 3. Parameters of module A5: Installation

PARAMETER	DESCRIPTION	VALUE PER DECLARED UNIT
Auxiliary materials for installation	Electronic drill	0.0404
Water use	m^3	1.5925
Other resources	Kg	0
Quantitative description of the type and consumption of energy during the preparation and installation process.	International low voltage electrical mix	1.3667 Wh
Direct emissions to soil, water or air	kg	0
Waste materials on site, prior to waste processing, generated by the installation of the product; specified by type	Installation losses	5%
	Packaging	0.1323 Kg
Output materials (specified by type) as a result of on-site waste processing; specified by route.	Recycling	0 Kg
	Landfill	0.1323 Kg

B1-B7 Stage of use

This stage is composed of **B1 Use, B2 Maintenance, B3 Repair, B4 Replacement, B5 Rehabilitation, B6 In-service energy use** and **B7 In-service water use**.

- Use of the products in the building: the environmental impacts in this module are negligible as the use of Topcret as a coating material does not require any energy or material consumption.
- Waste management during use: no waste is generated during the use phase.
- Maintenance: under normal conditions of use, occasional revisions may be required, replacement due to damage, e.g., due to weather events or extreme shocks. Impacts due to natural catastrophes are considered negligible.
- Cleaning is carried out with a damp cloth and, if the surface is dirty or greasy, cleaning agents such as detergents or bleach can be added. In this study, the standard scenario for cleaning ceramic floor and wall tiles for a residential use scenario has been considered:

- Standard scenario: residential use - 0.06 l of detergent and 2 l of water are used to wash 100 m^2, frequency 1.5 times/week, throughout its lifespan.
- Repair: under normal conditions of use (except extreme weather events), they do not require repair during the use phase.
- Replacement: the products have a similar lifespan in construction and do not require replacement of materials. The environmental impacts of this module are considered irrelevant.
- Rehabilitation: the products have a similar lifespan in construction and do not require replacement of materials. Therefore, the environmental impacts of this module are not considered.

Once the installation is completed, no technical actions or operations are required during the use stages until the end of life. Therefore, Baxab®Eco coatings have no impact at this stage.

C1-C4 End-of-life stage

This stage includes the following End-of-life activities for the products: **C1 Dismantling/Deconstruction, C2 Transportation to waste manager, C3 Waste treatments** and **C4 Final disposal**.

This includes the provision of all transports, materials, products and the related use of energy and water. In the normal situation, it is considered a joint dismantling without separation of materials and its impact is very small compared to the impact of the deconstruction of the building as a whole and can be disregarded in C1. As it is an inert material, it is sent to a local landfill located within a radius of 50 km without prior treatment.

The following table summarizes the information required for the End-of-life stage:

Table 4. Information needed at the End-of-life stage

Module	Parameter	Unit (expressed per declared unit)	Average value
C1 Dismantling	Collection process specified by type	Kg harvested manually and separated	0
		Kg collected mixed with construction waste	3.228 kg
C2 Transport	Type and fuel consumption of the vehicle, type of vehicles used for transportation	Medium transport truck 7.5-16 EURO6	Diesel fuel consumption: 0.047208299 kg/tkm
	Distance	km	100
	Capacity utilization (including no-load return)	% assumed in Ecoinvent database	100% volume (round trip empty)
	Bulk density	Kg/m3	1.614 Kg/m3
	Useful capacity factor		1
C3 Waste treatment waste	Recovery system specified by type	Kg for reuse	0
		Kg for recycling	0
		Kg for energy recovery	0
		Kg for incineration	0
C4 Final disposal	Disposal specified by type	Kg product for final disposal	3.228 kg

D Reuse, recovery and recycling potential stage

The present products do not claim environmental benefits due to recycling and reuse.

Diagram of the study system:

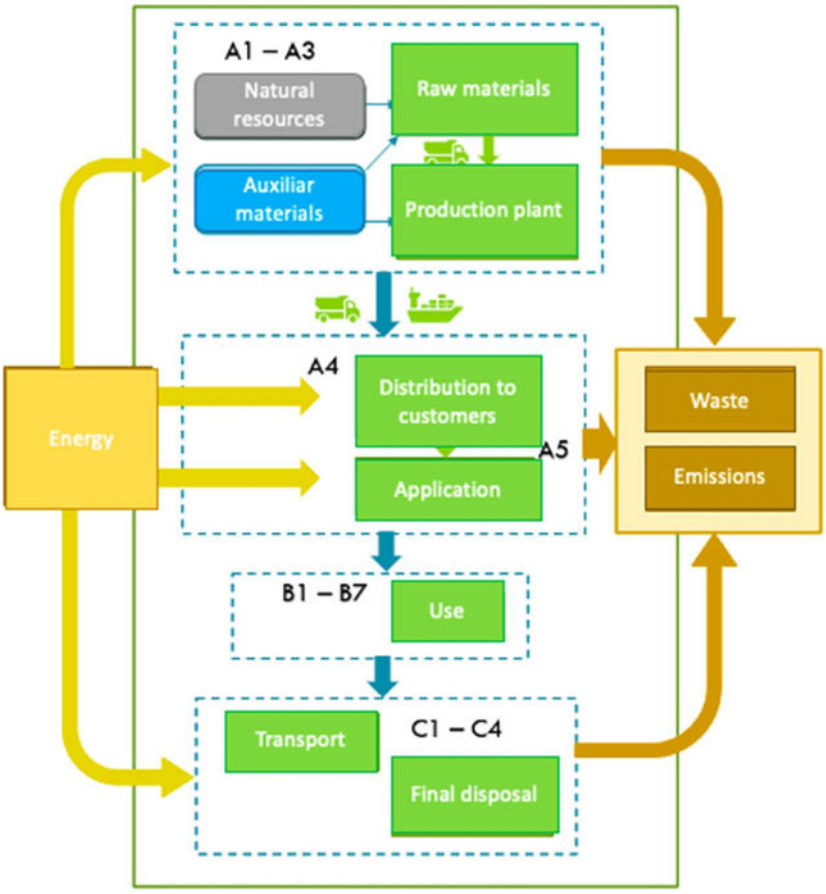

Figure 1. Baxab®Eco system diagram

More information: https://topcret.com/

Reported modules, geographic scope, percentage of specific data (in the GWP-GHG indicator) and data variation:

Table 5. Modules reported, geographic scope, percentage of specific data (in the GWP-GHG indicator) and data variance

	Product stage			Construction/ installation stage		Use stage							End-of-life stage					Resource recovery stage
	Raw Materials	Transport	Manufacturing	Transport	Installation/construction	Use	Maintenance	Repair	Replacement	Rehabilitation	Energy use in service	Water use in service	Deconstruction-demolition	Transport	Waste treatment	Waste disposal		Reuse, recovery and recycling potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**		**D**
Declared modules	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Geography	ES	ES	ES	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO		GLO
Specific data	> 95% GWP-GHG					-	-	-	-	-	-	-	-	-	-	-		-
Variation in products	NR					-	-	-	-	-	-	-	-	-	-	-		-
Site variation	NR			-	-	-	-	-	-	-	-	-	-	-	-	-		-

NR = Not relevant.

Additional information

- Technical support for the implementation of the EPD: Marcel Gómez Consultoría Ambiental.
- The electricity mix used in the manufacturing plant is purchased from a supplier and has the following composition: nuclear (31.7%), combined cycle (25%), cogeneration (12.7%), natural gas (2.4%), coal (2.9%), renewable sources-hydro, wind and solar (23.9%) and others (1.4%) (Figure 1).
- The impact of the electricity profile is 0.0548 kg CO2 eq./kWh.

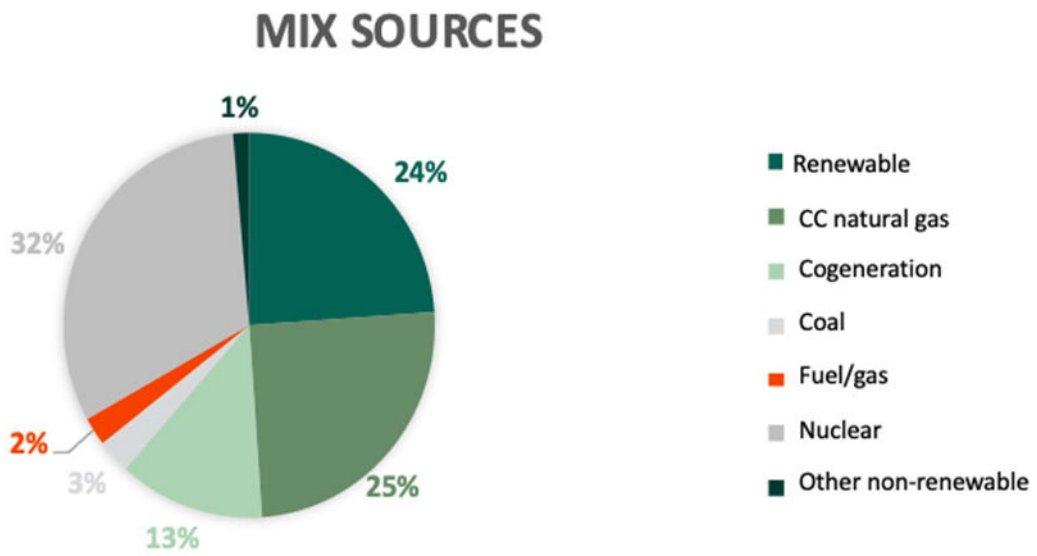

Figure 2. Suppliers mix composition 2021. Source: own invoices

- Cutting rules and considerations:
  - At least 95% of raw material and energy consumption per module and at least 99% for the total life cycle are included.
    - The modularity principle has been followed, as well as the polluter pays principle.
- Allocation procedure: Wherever possible, allocation has been avoided, but for general electricity consumption and waste production, allocation has had to be made on the basis of physical mass considerations.
- Based on the system limits indicated in the PCR Construction products reference standard, the following processes have not been taken into account:
  - The manufacture of capital goods with an expected useful life in excess of three years, buildings and other capital goods.
  - Maintenance activities of the production plant.
  - Research and development activities.
  - Transportation carried out by workers on the home-factory-home route.
  - Long-term issuance.
- The scenarios included are currently in use and are representative of one of the most likely alternatives for the products analyzed.

Content information

For confidentiality reasons, the following table shows the composition of the product according to the materials pre-produced by Topcret that make up the final product:

Table 6. Composition of the product according to the materials pre-produced by Topcret (Baxab®Eco)

Raw Materials	Percentage, %	Post-consumer material, weight-%	Renewable material, wt-%
POWDER BASE	52.66%	0	0
LIQUID BASE CONCENTRATE	17.35%	0	0
POWDER BAXAB	11.93%	0	0
CONCENTRATED LIQUID BAXAB A	3.10%	0	0
CONCENTRATED LIQUID BAXAB B	5.61%	0	0
ARMOUR CRED COMPONENT 1	6.72%	0	0
ARMOUR CRED COMPONENT 2	1.02%	0	0
SEALER	0.99%	0	0
WAX	0.62%	0	0
TOTAL	3.228 kg	0	0
Packaging Materials	**Weight, kg**	**Weight-% (versus product)**	**Post-consumer material, weight-%**
Plastic container	0.1242	3.85%	0
Stretch film	0.00455	0.14%	0
Wooden pallet	0.00354	0.11%	0
TOTAL	0.1324	4.10%	0

Bisphenol A:

3.1 **Substance:** 2,2-Bis/4-hydroxyphenyl)propane
Synonyms: 4,4'-Isopropylidenediphenol

Formula C15H16o2
Molecular weight 228.29 g/mol
NºCAS 80-05-7
NºCE 201-245-8
NºIndex 604-030-00-0

Component		Classification	Concentration
Bisphenol A Included in the candidate list of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006.			
NºCAS	80-05-7	Eye Dam. 1; Skin Sens. 1; Repr. 1B; STOT SE 3; Aquatic Chronic 2; H318, H317, H360F, H335, H411	<=100%
NºCE	201-245-8		
NºIndex	604-030-00-0		

The rest of the products studied do not include during their life cycle any hazardous substance included in the "Candidate List of Very High Impact Substances for Authorization (SVHC)" in a percentage higher than 0.1% of the weight of the product.

Environmental performance information

Information on environmental impacts is expressed with Life Cycle Impact Assessment (LCIA) impact category indicators using characterization factors in an LCIA according to ISO 14044. The information on impact categories, indicators, characterization methods, units and characterization factors to be applied is in accordance with Annex C of EN 15804+A2.

The additional impact categories in Table 4 of EN 15804+A2 are presented within the LCA report and are not stated in this EPD.

The results of the environmental impact potential of the product studied are presented below:

Potential environmental impact: mandatory indicators according to EN 15804

Estimated impact results are only relative statements that do not indicate impact category endpoints, exceeding threshold values, safety margins or risks.

Table 7. Mandatory indicators according to EN 15804

Results per declared unit																
Indicator	**Unit**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2.74E+00	5.06E-01	1.67E-01	0.00	2.17E+00	0.00	0.00	0.00	0.00	0.00	1.21E-02	6.88E-02	0.00	8.15E-03	0.00
GWP- biogenic	kg CO_2 eq.	-8.33E-02	4.05E-04	-4.13E-03	0.00	-5.41E+00	0.00	0.00	0.00	0.00	0.00	3.59E-06	6.65E-05	0.00	4.69E-06	0.00
GWP-luluc	kg CO_2 eq.	2.47E-03	1.69E-04	1.36E-04	0.00	3.35E+00	0.00	0.00	0.00	0.00	0.00	2.99E-07	3.26E-05	0.00	2.77E-07	0.00
GWP-total	kg CO_2 eq.	2.66E+00	5.07E-01	1.63E-01	0.00	1.06E-01	0.00	0.00	0.00	0.00	0.00	1.21E-02	6.89E-02	0.00	8.15E-03	0.00
ODP	kg CFC 11 eq.	2.21E-07	1.15E-07	1.77E-08	0.00	3.24E-07	0.00	0.00	0.00	0.00	0.00	2.72E-09	1.55E-08	0.00	1.69E-09	0.00
AP	mol H^+ eq.	1.58E-02	4.16E-03	1.02E-03	0.00	3.01E-02	0.00	0.00	0.00	0.00	0.00	1.31E-04	1.95E-04	0.00	8.39E-05	0.00
EP- fresh water	kg P eq	6.48E-05	3.04E-06	3.47E-06	0.00	2.72E-04	0.00	0.00	0.00	0.00	0.00	8.54E-09	5.62E-07	0.00	2.89E-08	0.00
EP- fresh water	kg PO43- eq.	1.99E-04	9.34E-06	1.07E-05	0.00	8.34E-04	0.00	0.00	0.00	0.00	0.00	2.62E-08	1.73E-06	0.00	8.88E-08	0.00
EP-marine	kg N eq.	2.23E-03	9.69E-04	1.66E-04	0.00	3.13E-02	0.00	0.00	0.00	0.00	0.00	5.87E-05	3.71E-05	0.00	3.65E-05	0.00
EP-terrestrial	mol N eq.	2.34E-02	1.08E-02	1.77E-03	0.00	1.12E-01	0.00	0.00	0.00	0.00	0.00	6.43E-04	4.15E-04	0.00	4.00E-04	0.00
POCP	kg NMVOC eq.	8.28E-03	3.08E-03	5.88E-04	0.00	1.42E-02	0.00	0.00	0.00	0.00	0.00	1.76E-04	1.59E-04	0.00	1.11E-04	0.00
ADP-minerals & metals*	kg Sb eq.	1.94E-05	1.49E-06	1.06E-06	0.00	5.91E-06	0.00	0.00	0.00	0.00	0.00	6.27E-10	3.15E-07	0.00	3.92E-10	0.00
ADP-fossil*	MJ	4.48E+01	7.48E+00	2.68E+00	0.00	2.07E+01	0.00	0.00	0.00	0.00	0.00	1.68E-01	1.03E+00	0.00	1.09E-01	0.00
WDP*	m^3	1.41E+00	1.92E-02	7.16E-02	0.00	9.67E+00	0.00	0.00	0.00	0.00	0.00	4.32E-05	3.42E-03	0.00	4.39E-05	0.00

Acronyms	GWP-fossil = Global Warming Potential, fossil fuels; GWP-biogenic = Biogenic Global Warming Potential; GWP-luluc = Global Warming Potential Land use and land use change; ODP = Stratospheric Ozone Depletion Potential; AP = Acidification Potential, cumulative exceedance; EP-freshwater = Eutrophication Potential, fraction of nutrients reaching the final freshwater compartment; EP-marine = Eutrophication Potential, fraction of nutrients reaching the marine compartment; EP-terrestrial = Eutrophication Potential, cumulative exceedance; POCP = Tropospheric Ozone Formation Potential; ADP-minerals and metals = Abiotic Depletion Potential of non-fossil resources; ADP-fossil = Abiotic Depletion Potential of fossil resources; WDP = Water Deprivation Potential (user), water consumption weighted by water unavailability (water stress); WDP = Water Deprivation Potential (user), water consumption weighted by water unavailability (water stress); WDP = Water Deprivation Potential (user), water consumption weighted by water unavailability (water stress).

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

Potential environmental impact: additional mandatory and voluntary indicators

Table 8. Additional mandatory and voluntary indicators (GWP - GHG)

Results per declared unit															
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
GWP-GHG[1]	kg CO_2 eq.	2.67E+00	5.02E-01	1.63E-01	0.00	5.40E+00	0.00	0.00	0.00	0.00	0.00	1.20E-02	6.82E-02	0.00	7.99E-03

Use of resources

Table 9. Additional mandatory and voluntary indicators (Use of resources)

Results per declared unit															
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	3.89E+00	9.25E-02	2.02E-01	0.00	1.34E+02	0.00	0.00	0.00	0.00	0.00	2.71E-04	1.74E-02	0.00	4.54E-04
PERM	MJ	5.41E-03	0.00E+00	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00	0.00E+00
PERT	MJ	3.90E+00	9.25E-02	2.02E-01	0.00	1.34E+02	0.00	0.00	0.00	0.00	0.00	2.71E-04	1.74E-02	0.00	4.54E-04
PENRE	MJ	4.80E+01	7.94E+00	2.87E+00	0.00	2.69E+01	0.00	0.00	0.00	0.00	0.00	1.78E-01	1.09E+00	0.00	1.15E-01
PENRM	MJ.	9.12E+00	0.00E+00	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00	0.00E+00
PENRT	MJ	5.71E+01	7.94E+00	2.87E+00	0.00	2.69E+01	0.00	0.00	0.00	0.00	0.00	1.78E-01	1.09E+00	0.00	1.15E-01
SM	kg	9.20E-01	0.00E+00	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00	0.00E+00
FW	m^3	3.57E-02	7.25E-04	1.83E-03	0.00	3.76E-01	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00	0.00E+00

[1] The indicator includes all greenhouse gases included in the total GWP but excludes the uptake and emissions of biogenic carbon dioxide and biogenic carbon stored in the product. This indicator is therefore equal to the GWP indicator originally defined in EN 15804: 2012 + A1: 2013.

Acronyms	PERE = Primary renewable energy use, excluding primary renewable energy resources used as feedstocks; PERM = Primary renewable energy resource use used as feedstocks; PERT = Total primary renewable energy resource use; PENRE = Primary nonrenewable energy use, excluding primary nonrenewable energy resources used as feedstocks; PENRM = Use of nonrenewable primary energy resources used as feedstocks; PENRT = Total use of nonrenewable primary energy resources; SM = Secondary material use; RSF = Use of renewable secondary fuels; NRSF = Use of nonrenewable secondary fuels; FW = Net freshwater use.

Waste production and outflows

Waste production

Table 10. Waste production

Results per declared unit															
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Non-hazardous waste disposed	kg	9.26E-03	1.73E-05	4.64E-04	0.00	4.59E-05	0.00	0.00	0.00	0.00	0.00	4.40E-07	2.76E-06	0.00	2.74E-07	0.00
Hazardous waste disposed	kg	4.37E-01	3.33E-01	3.34E-01	0.00	6.10E-01	0.00	0.00	0.00	0.00	0.00	1.03E-05	4.38E-02	0.00	3.22E+00	0.00
Radioactive waste disposed	kg	9.27E-05	5.10E-05	7.61E-06	0.00	5.29E-05	0.00	0.00	0.00	0.00	0.00	1.20E-06	6.91E-06	0.00	7.49E-07	0.00

Outflows

Table 11. Outflows

Results per declared unit															
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Recycling materials	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00

Information on biogenic carbon content

Table 12. Biogenic carbon content

Results per declared Unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in the product.	kg C	0.00E+00
Biogenic carbon content in the packaging.	kg C	6.50E-03

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO2.

Interpretation of the LCA

The stage of transporting the product to the site (A4) has a medium impact, in some cases negligible due to the low density of the product and the short transport distance. Indeed, this stage represents between less than 1% (Eutrophication), 14% (Climate change) and 16% of the total life cycle impact in terms of ozone layer depletion.

The installation stage (A5) has a negligible impact on the product's life cycle. Indeed, this stage of the life cycle represents approximately 4 to 3% of the total impact for the indicators (climate change and depletion of abiotic resources, fossil fuels).

The waste production and transportation stage (C2 and C4) have an impact of less than 1% for both stages.

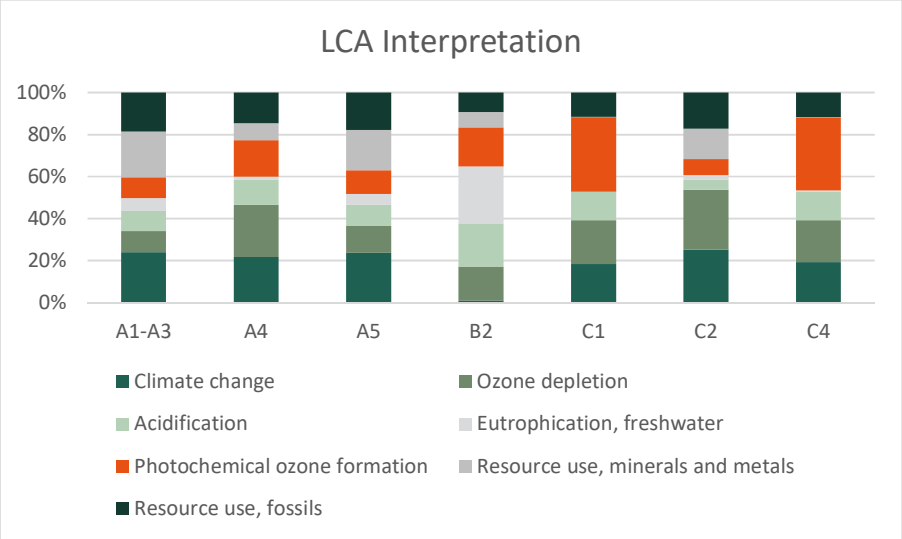

Figure 3. Results interpretation

Information related to the EPD Sector

This EPD® is individual.

Differences with previous versions

EPD® first version.

References

- General Programme Instructions of the International EPD® System. Version 3.01.
- ISO 14020: 2000 Environmental labels and declarations: general principles.
- ISO 14025: 2010 Environmental labels and declarations - Environmental declarations type III - Principles and procedures.
- ISO 14040: 2006 Environmental management - Life cycle assessment - Principles and framework.
- ISO 14044: 2006 Environmental management - Life cycle assessment - Requirements and guidelines.
- UNE-EN 15804:2012+A2:2019 Sustainability of construction works - Environmental product declarations - Basic rules for the product category of construction products.
- PCR 2019:14 Construction products (EN 15804+A2) version 1.11.
- EN 16908:2017+A1:2022 - Cement and building lime - Environmental product declarations - Product category rules complementary to EN 15804.
- EU Construction & Demolition Waste Management Protocol.
- European Commission (DG ENV) (2011). Report on the management of construction and demolition waste in the EU - SERVICE CONTRACT ON MANAGEMENT OF CONSTRUCTION AND DEMOLITION WASTE - SR1. Final Report Task 2. ENV.G.4/FRA/2008/0112. Paris.
- Marcel Gómez Consultoría Ambiental (2022). Life Cycle Assessment of Topcret surface coating for construction. Barcelona - Spain.