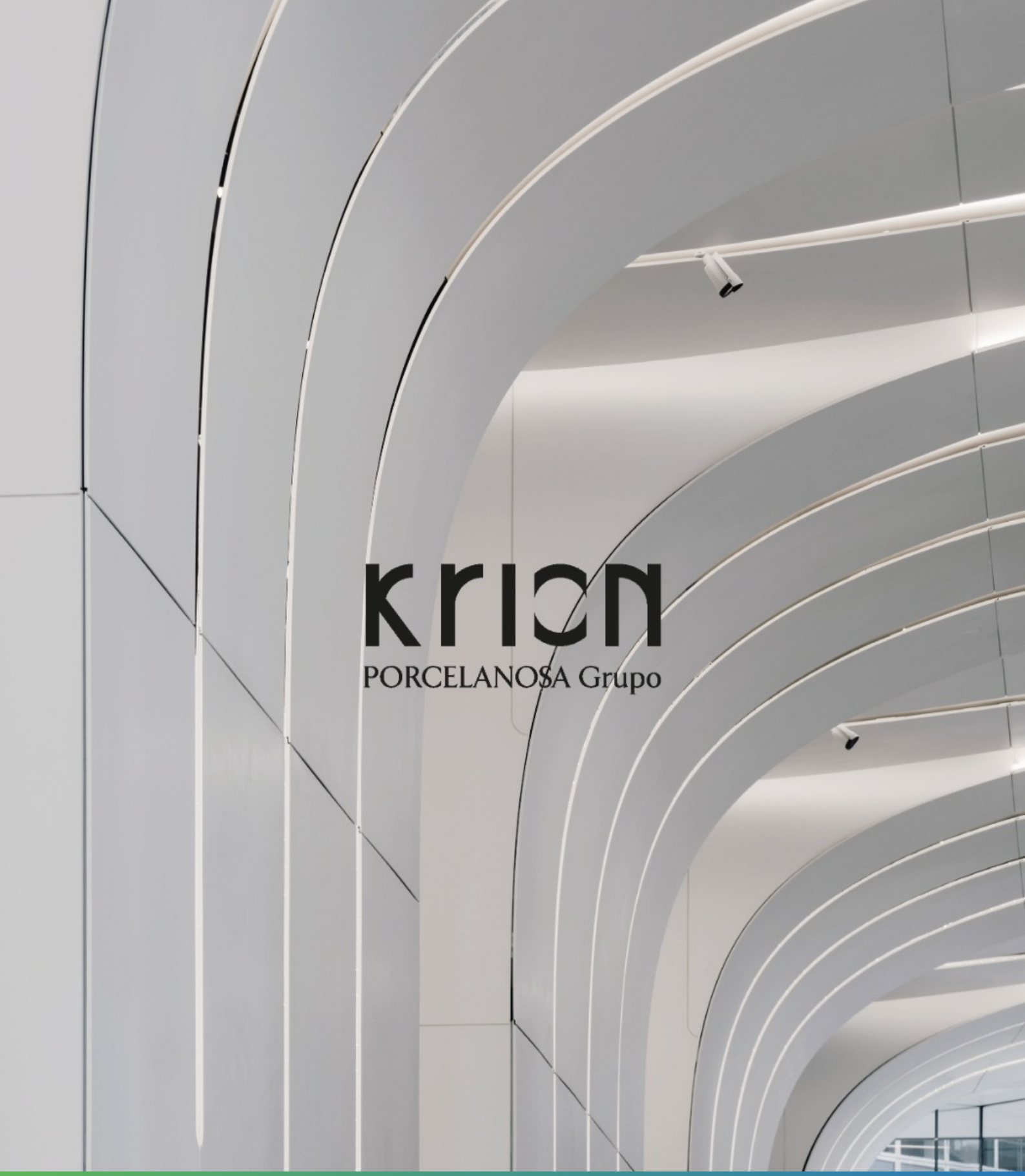

DAPcons®.100.122

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

According to the standards:
ISO 14025 y EN 15804 + A2:2020

cateb Arquitectura Tècnica Barcelona

ECO PLATFORM EPD VERIFIED

dapcons®

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

DAPcons®.100.122

According to the standards:

ISO 14025 y EN UNE 15804 + A2:2020

GENERAL INFORMATION

Product

KRION® K-LIFE 1100 - Interior cladding

Company

Product description

KRION® K-LIFE 1100 is a new generation solid surface developed by KRION SOLID SURFACE, S.A.U., a Grupo Porcelanosa company.

It is a material with a high mineral content and a low percentage of natural pigments which give it an excellent whiteness level. All this is combined with high quality acrylic resins.

Reference RCP

RCP 100 (version 3 - 27/05/2021) Construction products in general

Production plant

Ctra. Vila-real - Puebla de Arenoso (CV-20) km 1 - 12540 VILA-REAL (Castelló) Spain

Validity

From: 16/11/2022 Until: 16/11/2027

The validity of DAPcons®.100.122 is subject to the conditions of the regulation DAPcons®. The current edition of this DAPcons® is the one that appears in the registry maintained by Cateb; for informational purposes, it is included on the Program website www.csostenible.net

EXECUTIVE SUMMARY

KRION® K-LIFE 1100 - Interior cladding

	DAPconstruction® PROGRAMME Environmental Product Declarations in the Construction sector www.csostenible.net
	Programme Manager Colegio de la Arquitectura Técnica de Barcelona (Cateb) Bon Pastor, 5 · 08021 Barcelona www.apabcn.cat
	Declaration Holder KRION SOLID SURFACE S.A.U. Ctra. Vila-real - Puebla de Arenoso Km. 1 (CV-20) 12540 - CASTELLON (España) https://www.krion.com
	Statement made by: Marcel Gómez Consultoria Ambiental Torrent de Vallmora 24-26 1º 2ª, 08320 - BARCELONA, España

Declared product

KRION® K-LIFE 1100 - Interior cladding

Geographic representation

Global

Variability between different products

This document states the results of each of the outputs individually.

Declaration number

DAPcons®.100.122

Registration date

25/10/2022

Validity

This verified declaration authorizes its holder to carry the logo of the operator of the ecolabelling program DAPconstruction®. The declaration is applicable exclusively to the mentioned product and for five years from the date of registration. The information contained in this statement was provided under the responsibility of: **KRION SOLID SURFACE S.A.U.**

Programme Administrator Signature

Celestí Ventura Cisternas. President of Cateb

36548201M CELESTINO VENTURA (R: Q0875009C)
36548201M CELESTINO VENTURA (R: Q0875009C) 22.02.2023 14:35:30 +0100

Programme Verifier Signature

Lucas Pedro Berman. Verifier accredited by the administrator of the DAPcons® Programme

BERMAN LUCAS PEDRO - X4616722R
BERMAN LUCAS PEDRO - X4616722R 22.02.2023 14:35:29 +0100

ENVIRONMENTAL PRODUCT DECLARATION

1. DESCRIPTION OF THE PRODUCT AND ITS USE

KRION® K-LIFE 1100 - INTERIOR CLADDING

KRION® K-LIFE 1100 is a new generation solid surface developed by KRION SOLID SURFACE, S.A.U., a Grupo Porcelanosa company.

It is a material with a high mineral content and a low percentage of natural pigments that give it an excellent level of whiteness. All this is combined with high quality acrylic resins.
One of the applications of our material is interior cladding. Any surface that forms part of an environment is susceptible to being coated with KRION® K-LIFE 1100 due to its thermoplastic properties. This skin covering the main sheet can be adjusted to any type of shape, including organic shapes.

Within the interior cladding, the most widely used application is the cladding of vertical walls, achieving surfaces without visible joints, and reaching an aesthetic level far beyond the majority of materials on the current market. However, false ceiling cladding, vertical communication cores in height, all of them can be done with KRION® K-LIFE 1100.

A lifespan of 25 years is envisaged for the use of interior cladding, with the understanding that the interior of the building can be refurbished once during its useful life.

An image and the main technical characteristics of the product are shown below.

PROPERTY	TEST METHOD	RESULT	
Bending strength	ISO 178	77,3 MPa	
Tensile modulus	ISO 527	40 MPa	
Compressive strength	ISO 604	99,1 MPa	
Ball impact strength	ISO 19712-2 (324 g) / NEMA LD3 (224 g)	> 200 cm	
Postforming at 163°C	NEMA LD3	Radius of curvature parallel to the 50 mm side: 16 mm. No breakage	
Density	ISO 1183	1,736 g/cm³	
Rockwell hardness	ASTM D785	> 90	
Barcol hardness	ISO 19712 / ASTM D2583	68	
Linear thermal expansion coefficient	ISO 11359-2	(-30 a +105) °C	3,7 · 10⁻⁵°C
Thermal conductivity	UNE-EN 12667 / ASTM C518	(0 a 40)°C	0,10-0,22 W/m K
Dry heat resistance 180°C	ISO 19712	Grade 5 No visible change	
Humid heat resistance 100°C	ISO 19712	Grade 5 No visible change	
Resistance to cigarette smoke	ISO 19712	Grade 4 Slight change in brightness, only visible at certain viewing angles and slight brown staining.	
Thermal shock resistance 250 cycles. (90-10)°C	ISO 19712	Satisfactory. No defects observed	
Colour resistance to light (72h)	NEMA LD3	Grade a No visible change	
Resistance to Ultraviolet UV light. (1500h)	UNE-EN 438 / ISO 4892-3	Appearance: Good. Grey scale index: 4-5	
Resistance to Artificial Weathering (3000h)	UNE-EN 438 / ISO 4892-2	No change in appearance Grey scale index: 5	
Emission of volatile organic compounds	UL 2818-2013	Greenguard Gold	
	ISO 16000-6 French Legislation	A+ rating	
Nitric oxide removal	ISO 22197-1	NOx degradation < 0.5 µmoles	
Bacteria resistance	UNE-EN ISO 846 (Method C)	Bacteria Gram-negativa Pseudomonas aeruginosa Bacteria Gram-positiva Staphylococcus aureus No growth of test bacteria	
Fungus resistance	UNE-EN ISO 846 (Method A) / ASTM G21	Aspergillus niger van Tieghem, Penicillium funiculosum Thom, Paecilomyces variotii Bainier: Gliocladium virens Miller, Chaetomium globosum Kunze, Aureobasidium pullulans: Fusarium fujikuroi No growth of any test fungus	
Antimicrobial activity of materials	ISO 27447	Staphylococcus aureus: R1=0,16 / ΔR=0,15 Bacterial Lethality: 3,11%	
		Escherichia coli: R1=0,13 / ΔR=0,12 Bacterial Lethality: 2,45%	
Viral stability on surface over time	TCID50 (tissue culture infectious dose 50)	CORONAVIRUS NL63 Decrease of infectivity in 48h > 97%	
		INFLUENZA A Decrease of infectivity in 48h > 99%	
Resistance to chemical agents	ISO 19712 (Method A)	Agent results ≥ 4	
Self-cleaning performance. Drop angle	ISO 27448	Test 1: θ_{in} = 76° θ_{des} = 66°	
		Test 2: θ_{in} = 47° θ_{des} = 32°	

PROPERTY	TEST METHOD	RESULT	
Overall Migration (Simulants)	Commission Regulation 10/2011	Below limits	
Specific Migration. (Metals)		Below limits	
Specific Migration. (MMA)		Below limits	
Food Contact	NSF / ANSI-51 "Food equipment"	FOOD ZONE	
REACH Regulation	European Regulation 1907/2006	SVHC are ≤ 0,1% (w/w)	
SiO_2 content (crystalline)	National Institute of Silicosis (INS)	Quartz < 1%	
		Tridymite < 2%	
		Cristobalite < 1%	
Ecotoxicity (terrestrial and aquatic environments)	OECD 202	Non-toxic	
	OECD 203		
	OECD 201		
	OECD 207		
	OECD 208		
Reaction to fire test. Euroclasses	UNE-EN 13501-1+A1 UNE-EN 13823 UNE-EN ISO 11925-2 (Walls and ceilings)	Thickness tested	Rating
		3 mm 6 mm 12 mm 19 mm	B s1 d0
	UNE-EN 13501-1+A1 UNE-EN 13823 UNE-EN ISO 11925-2 (Ventilated façade)	Thickness tested	Rating
		12 mm	B s1 d0

2. DESCRIPTION OF THE STAGES OF THE LIFE CYCLE

2.1. Manufacturing (A1, A2 y A3)

Raw Materials (A1 y A2)

Module A1 includes the supply of raw materials.

Module A2 refers to the transport of raw materials from the suppliers to the factory. Since the raw materials come from the USA, China, and South Korea. For this, the distance from the origin to destination and the type of transport used have been taken into account.

Manufacturing (A3)

The manufacturing process is carried out as follows:

- MIXING PROCESS

Once the raw materials are in the factory, they are first dosed and mixed in the required proportions. A vacuum is then applied to the mixture to remove any air bubbles and ensure the compactness of the product.

- CONTINUOUS MOULDING

A sheet is then formed by injecting the material in line through continuous steel strips that determine, according to their height, the thickness of each sheet. After this, the material undergoes a curing process at room temperature.

- SURFACE FINISHING

Once the piece is cold, the surface finish is carried out, consisting of cutting (if necessary), after which the surfaces are sanded and calibrated and the dust is removed with compressed air.

- PACKAGING

Finally, the sheets are covered with an individual film, palletized at 20 units per pallet and a cardboard cover is placed on each pallet. cardboard cover per pallet, and finally the whole assembly is strapped together.

2.2. Building (A4 y A5)

Transport of the product to the work (A4)

The product is distributed in two ways: (i) from the production plant in Korea the product is shipped to the distribution center in Spain, which is mainly distributed to Spain and Europe; (ii) the product is shipped directly from the production plant in Korea to customers in the rest of the world.

For the calculation of the distances, the weighted average of global sales has been considered. Since KRION® K-LIFE 1100 - Interior is distributed mainly in Spain, followed by Europe, and lastly to customers in the rest of the world.

Table 1. Scenarios applied for the transport of the product to the place of installation

Destinations	Type of transport	Percentage	Average km
Spain	EURO VI Truck >32	35	136.50
Europe	EURO VI Truck >32 - Transoceanic ship	34	336.60
Rest of the world	EURO VI Truck >32 - Transoceanic ship	31	164
		Total 100%	

Product installation process and construction (A5)

For the installation of the KRION® K-LIFE 1100 - Interior Cladding product, KRION® adhesive and polyurethane adhesive mastic is used. In addition, the use of energy is required, as it is necessary to use machinery for its installation. During the installation process, an estimated waste of 3 % has been estimated.

The transport to the corresponding manager, where a distance of 50 km is considered, has also been taken into account.

2.3. Product use (B1-B7)

Use (B1)

It is included because both in the atmosphere and in homes, there are certain gases that are hazardous to humans and nature itself. These gases are especially nitrogen oxides (NOx), sulfur oxides (SOx), and volatile organic compounds (VOC). When these gases come into contact with the surface of KRION® K-LIFE 1100 - Interior Cladding and are irradiated with UV light (e.g. sunlight), a photochemical reaction is initiated in which the material contributes to the reduction of the concentration of these gases. KRION® K-LIFE 1100 - Interior Cladding can remove up to 0.58 kg of NOx from the atmosphere over its lifetime over its lifespan.

Maintenance (B2)

The B2 stage for KRION® K-LIFE 1100 - Interior Cladding requires maintenance, for which water and detergent are used.

Repair (B3)

A lifespan of 25 years is envisaged for the use of interior cladding, with the understanding that the interior of the building can be refurbished once during the lifespan of the building. Therefore, the impacts generated in the modules B1 (Use), Repair (B3), Replacement (B4), Refurbishment (B5), In-service energy use (B6), and In-service water use (B7) are considered negligible for the case of KRION® K-LIFE 1100 - Interior Cladding.

Substitution (B4)

A lifespan of 25 years is envisaged for the use of interior cladding, with the understanding that the interior of the building can be refurbished once during the lifespan of the building. Therefore, the impacts generated in the modules B1 (Use), Repair (B3), Replacement (B4), Refurbishment (B5), In-service energy use (B6), and In-service water use (B7) are considered negligible for the case of KRION® K-LIFE 1100 - Interior Cladding.

Rehabilitation (B5)

A lifespan of 25 years is envisaged for the use of interior cladding, with the understanding that the interior of the building can be refurbished once during the lifespan of the building. Therefore, the impacts generated in the modules B1 (Use), Repair (B3), Replacement (B4), Refurbishment (B5), In-service energy use (B6), and In-service water use (B7) are considered negligible for the case of KRION® K-LIFE 1100 - Interior Cladding.

Operational energy use (B6)

A lifespan of 25 years is envisaged for the use of interior cladding, with the understanding that the interior of the building can be refurbished once during the lifespan of the building. Therefore, the impacts generated in the modules B1 (Use), Repair (B3), Replacement (B4), Refurbishment (B5), In-service energy use (B6), and In-service water use (B7) are considered negligible for the case of KRION® K-LIFE 1100 - Interior Cladding.

Operational water use (B7)

A lifespan of 25 years is envisaged for the use of interior cladding, with the understanding that the interior of the building can be refurbished once during the lifespan of the building. Therefore, the impacts generated in the modules B1 (Use), Repair (B3), Replacement (B4), Refurbishment (B5), In-service energy use (B6), and In-service water use (B7) are considered negligible for the case of KRION® K-LIFE 1100 - Interior Cladding.

2.4. End of life (C1-C4)

Deconstruction and demolition (C1)

This process will be combined with the demolition of the building, for this reason, it is not included in this study.

Transportation (C2)

It will be considered that the waste will be transported in a EURO VI truck attached to the demolition waste to a treatment plant located 50 km away.

Waste management for reuse, recovery and recycling (C3)

The materials are not separated from the other construction products during the end of the building's life, so the impact of this stage is considered to be zero.

Ultimate elimination (C4)

The waste generated goes to landfill.

2.5. Potential environmental benefits and burdens beyond the system boundary (D)

Since it has been considered that 100% of the product at the end of its useful life is landfilled, the value of module D is zero.

3. LIFE CYCLE ANALYSIS

This EPD has been carried out according to ISO 14040, ISO 14044, and RCP100 - General Construction Products - V.3 (2021), from cradle to grave and module D (A, B, C, and D).

It has been carried out using SimaPro 9.3 software together with the ECOINVENT 3.8 database. The primary data - raw material and energy consumption, waste production, supplier, and product transport - corresponds to factory data in 2020. The polluter pays and modularity principles have been followed. Where necessary, a mass-based load allocation has been carried out. The electricity mix of South Korea, where the production plant is located, was used to represent the electricity consumption in the factory.

3.1. Functional Unit

1 m2 of KRION® K-LIFE 1100 - Interior Cladding installed, 12 mm thick with a product lifespan of 25 years.

3.2. System limits

Table 2. Declared modules

Product stage			Construction Process Stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw materials supply	Transport	Manufacturing	Transport	Construction - Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal	Reuse, recovery, recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

X = Declared module **MND** = Undeclared module

3.3. Life cycle analysis data (ACV)

Table 3. Parameters of environmental impact

Parameter	Unit	Life cycle stage														Module D
		Product stage	Construction Process Stage		Use stage							End of life stage				
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Climate change - total (GWP-total)	kg CO2 eq	7,92E+01	4,63E+00	5,66E+00	0,00E+00	8,97E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,63E-02	0,00E+00	9,57E-02	0,00E+00
Climate change - fossil (GWP-fossil)	kg CO2 eq	7,91E+01	4,63E+00	5,61E+00	0,00E+00	7,23E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,63E-02	0,00E+00	9,52E-02	0,00E+00
Climate change - biogenic (GWP-biogenic)	kg CO2 eq	5,39E-02	1,29E-03	4,66E-02	0,00E+00	-1,66E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,61E-05	0,00E+00	4,36E-04	0,00E+00
Climate change - land use and changes in land use (GWP-luluc)	kg CO2 eq	1,55E-02	1,14E-04	1,01E-02	0,00E+00	1,03E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,42E-07	0,00E+00	2,14E-05	0,00E+00
Ozone layer depletion (ODP)	kg CFC 11 eq	1,96E-06	1,01E-06	3,03E-07	0,00E+00	1,03E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,88E-08	0,00E+00	4,71E-08	0,00E+00
Acidification (AP)	mol H+ eq	4,59E-01	1,17E-01	2,94E-02	-4,29E-01	9,57E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,57E-04	0,00E+00	9,34E-04	0,00E+00
Eutrophication of fresh water (EP-freshwater)	kg P eq	2,39E-03	2,98E-06	2,79E-04	0,00E+00	8,72E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,06E-08	0,00E+00	6,06E-07	0,00E+00
Eutrophication of sea water (EP-marine)	kg N eq.	7,97E-02	2,86E-02	5,19E-03	-2,26E-01	9,67E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,57E-05	0,00E+00	3,52E-04	0,00E+00
Terrestrial eutrophication (EP-terrestrial)	mol N eq.	6,73E-01	3,18E-01	5,46E-02	-2,47E+00	3,50E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,85E-04	0,00E+00	3,87E-03	0,00E+00
Photochemical ozone formation (POCP)	kg NMVOC eq	2,92E-01	8,14E-02	1,58E-02	-5,80E-01	4,50E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,01E-04	0,00E+00	1,11E-03	0,00E+00
Depletion of abiotic resources - minerals and metals (ADP-minerals&metals)	kg Sb eq	1,01E-04	3,01E-07	3,53E-05	0,00E+00	2,03E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,45E-09	0,00E+00	1,86E-07	0,00E+00
Depletion of abiotic resources - fossil fuels (ADP-fossil)	MJ, net calorific value	1,17E+03	6,22E+01	7,71E+01	0,00E+00	7,20E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,13E+00	0,00E+00	3,08E+00	0,00E+00
Water consumption (WDP)	m3 worldwide eq. private	1,39E+01	-7,85E-03	1,56E+00	0,00E+00	6,98E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,88E-04	0,00E+00	9,75E-03	0,00E+00
The Indicador includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This Indicador is thus equal to the GWP Indicador originally defined in EN 15804:2012+A1:2013. Can be obtained from IPCC characterization factors.																
Global Warming Potential (GHG)	kg CO2 eq	7,65E+01	4,61E+00	5,51E+00	0,00E+00	1,72E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,59E-02	0,00E+00	9,40E-02	0,00E+00

A1 Supply of raw materials.**A2** Transportation. **A3** Manufacturing. **A4** Transportation. **A5** Installation and construction processes.**B1** Use. **B2** Maintenance. **B3** Repair. **B4** Substitution. **B5** Rehabilitation. **B6** Operational energy use.**B7** Operational water use.**C1** Deconstruction and demolition.**C2** Transportation. **C3** Waste management for reuse, recovery and recycling.**C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary.**MND** Undeclared module.

Table 4. Parameters for the use of resources, waste and output material flows

Parameter	Unit	Life cycle stage														Module D
		Product stage	Construction Process Stage		Use stage							End of life stage				
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy excluding renewable primary energy resources used as feedstock	MJ, net calorific value	2,11E+01	9,77E-02	8,31E+00	0,00E+00	1,03E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,72E-03	0,00E+00	6,27E-02	0,00E+00
Use of renewable primary energy used as raw material	MJ, net calorific value	2,68E+00	0,00E+00	8,00E-02	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
Total use of renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	2,38E+01	9,77E-02	8,39E+00	0,00E+00	1,03E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,72E-03	0,00E+00	6,27E-02	0,00E+00
Non-renewable primary energy use, excluding non-renewable primary energy resources used as feedstock	MJ, net calorific value	1,26E+03	6,60E+01	8,21E+01	0,00E+00	2,29E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,19E+00	0,00E+00	3,27E+00	0,00E+00
Use of non-renewable primary energy used as raw material	MJ, net calorific value	2,80E-01	0,00E+00	8,40E-03	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
Total use of non-renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	1,26E+03	6,60E+01	8,21E+01	0,00E+00	2,29E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,19E+00	0,00E+00	3,27E+00	0,00E+00
Use of secondary materials	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
Use of renewable secondary fuels	MJ, net calorific value	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
Use of non-renewable secondary fuels	MJ, net calorific value	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
Net use of freshwater resources	m3	3,37E-01	3,20E-04	5,43E-02	0,00E+00	5,30E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,09E-06	0,00E+00	3,71E-03	0,00E+00
Hazardous waste removed	kg	1,85E+01	3,64E-02	1,22E+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	4,64E-05	0,00E+00	2,24E+01	0,00E+00
Non-hazardous waste eliminated	kg	2,89E-04	7,65E-05	4,72E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,96E-06	0,00E+00	3,42E-06	0,00E+00
Radioactive waste disposed of	kg	8,57E-04	4,46E-04	2,19E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,05E-06	0,00E+00	2,08E-05	0,00E+00
Components for reuse	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
Materials for recycling	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
Materials for energy recovery (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	MJ by energy vector	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

A1 Supply of raw materials.**A2** Transportation. **A3** Manufacturing. **A4** Transportation. **A5** Installation and construction processes.**B1** Use. **B2** Maintenance. **B3** Repair. **B4** Substitution. **B5** Rehabilitation. **B6** Operational energy use.**B7** Operational water use.**C1** Deconstruction and demolition.**C2** Transportation. **C3** Waste management for reuse, recovery and recycling.**C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary.**MND** Undeclared module.

Table 5. Kg of biogenic carbon

Packaging	5,04E-01
Product	0,00E+00

3.4. Recommendations of this DAP

The comparison of construction products must be made by applying the same functional unit at the building level, that is, including the behavior of the product throughout its entire life cycle.

3.5. Cutting rules

At least 99 % of the total matter and energy of the life cycle has been included, and 95 % of matter and energy per module.
It has been excluded because its impact is considered negligible:
1) Manufacture of equipment used in production, buildings or any other capital goods.
2) Transportation of personnel to the plant.
3) Transportation of personnel within the plant.
4) Research and development activities.
5) Long-term emissions.

3.6. Additional environmental information

The product does not contain, in a percentage greater than 0.1 % by weight of the product, dangerous substances included in the "Candidate List of Substances of Very High Concern for Authorisation" of the European Agency for Chemical Substances and Preparations.

3.7. Other data

During the manufacturing process, there are some losses due to the excess of resin on the mold, and in the cut, due to the deburring.

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4. ADDITIONAL TECHNICAL INFORMATION AND SCENARIOS

4.1. Transportation from the factory to the construction site (A4)

Parameter	Parameter expressed per functional unit
Type and fuel consumption, type of vehicle used for transportation	EURO VI Truck 16-32 ton
Distance	Average distance: Truck 637.4 km (Europe and Spain). Ship: 2976,2 km (Europe, Rest of the world)
Capacity utilization (including empty return)	Percentage assimilated in the Ecoinvent database
Apparent density of transported product	24.8 kg/m2
Useful capacity factor (1, <1 or >1 for products that are packed compressed or nested)	1

4.2. Installation processes (A5)

Parameter	Parameter expressed per functional unit
Auxiliary materials for construction (specifying each material)	KRION® Adhesive 100 ml/m2 Polyurethane adhesive 71 ml/m2
Water use	Not required
Use of other resources	Not required
Quantitative description of the type of energy (regional mix) and consumption during the installation process	Overall electrical maximum - 6 kw/m2 The installation process may require some machining and finishing.
Waste of materials in the work before the treatment of waste, generated by the installation of the product (specify by type)	Losses of 3 % during the installation process
Material outputs (specified by type) as a result of waste treatment on the building site. For example: collection for recycling, energy recovery, disposal (specified by route)	The final destination of the waste is landfill disposal.
Direct emissions to air, soil and water	No emissions during product installation .

4.3. Reference life (B1)

Parameter	Parameter expressed per functional unit
Reference Lifetime (RSL)	The reference service life of the product is 25 years
Characteristics and properties of the product	Non-porous, no bacterial growth without any additives, hardness, strength, durability, easy to repair, low maintenance, and easy to clean.
Requirements (conditions of use, frequency of maintenance, repair, etc.)	It requires one cleaning per week and has a lifespan of twenty-five years.

4.4. Maintenance (B2), Repair (B3), Substitution (B4), or Rehabilitation (B5)

Maintenance (B2)

Parameter	Parameter expressed per functional unit
Maintenance process, for example; cleaning agent, surfactant type	Cleaning is done with a damp cloth and, if the surface is dirty or greasy, cleaning agents such as detergents or bleaches can be added
Maintenance cycle	To customer's evaluation
Auxiliary materials for the maintenance process (specifying each material)	0.18 lt of detergent
Energy inputs for the maintenance process (quantity and type of energy vector)	Not required .
Net consumption of fresh water during maintenance or repair	30 lt of water .
Material waste during maintenance (specifying the type)	Not required .

Repair (B3)

Parameter	Parameter expressed per functional unit
Repair process	Not required
Proceso de inspección	Not required
Repair cycle	Not required
Auxiliary materials (specifying each material], for example lubricant	Not required
Interchange of parts during the product life cycle	Not required
Energy inputs during maintenance, type of energy, example: electricity, and quantity	Not required
Energy input during the repair, renovation, replacement process if applicable and relevant (quantity and type of energy vector)	Not required
Material waste during repair (specifying each material)	Not required
Consumo neto de agua dulce	Not required

Substitution (B4)

Parameter	Parameter expressed per functional unit
Energy input during substitution, for example for the use of cranes (quantity and energy vector)	Not required
Change of worn parts in the product life cycle (specifying each material)	Not required
Net freshwater consumption	Not required .

Rehabilitation (B5)

Parameter	Parameter expressed per functional unit
Rehabilitation process	Not required
Rehabilitation cycle	Not required
Energy input during rehabilitation, for example for the use of cranes (quantity and energy vector)	Not required
Input material for rehabilitation, including auxiliary materials (specifying by material)	Not required
Waste of material during rehabilitation (specifying each material)	Not required
Other scenario development assumptions	Not required .

4.5. Reference life

Parameter	Parameter expressed per functional unit
Reference life	25 years
Declared properties of the product, finishes, etc.	Solid surfaces with a high mineral content and a low percentage of natural pigments
Application design parameters (manufacturer's instructions)	For more information consult the installation manual at www.krion.com
Estimation of the quality of execution, when installed according to the manufacturer's instructions	No building work is required
Outdoor environment for outdoor applications. For example, weather, pollutants, UV radiation, temperature, etc.	For more information visit the website: www.krion.com
Indoor environment for indoor applications. For example, temperature, humidity, chemical exposure	Temperature: -20° to 80°
Terms of use. For example, frequency of use, mechanical exposure, etc.	Single-use
Maintenance. For example, the required frequency, etc.	To customer's evaluation

4.6. Use of energy (B6) and water (B7) in service

Parameter	Parameter expressed per functional unit
Auxiliary materials (specified by material)	Not required
Type of energy vector. For example, electricity, natural gas, district heating	Not required
Equipment output power	Not required
Net freshwater consumption	Not required
Characteristic features (energy efficiency, emissions, etc.)	Not required
Other scenario development assumptions. For example, transportation	Not required

4.7. End of life (C1-C4)

	Process				
	Collection processes (specified by types)	Recovery systems (specified by type)			Elimination
	kg collected with mixed construction waste	kg for reuse	kg for recycling	kg for energy recovery	kg for final disposal
	0	0	0	0	24.80
Assumptions for scenario development	Together with the inert materials on which it is applied. 100 % deposit in a controlled landfill. 50 km transport from site to landfill.				

5. ADDITIONAL INFORMATION

KRION® K-LIFE 1100 - Interior Cladding: with fire resistance Euroclass B-s1-d0 according to UNE-EN13501-1, B1 without restrictions according to DIN 4102 and Class A according to ASTM E84 with an FSI<10 SDI<10.

Contributes to the improvement of the surrounding air due to low VOC's emission with Greenguard Gold102154-420 certificate according to UL 2818, A+ classification according to ISO16000-6, and criteria of the French decree no. 2011-321 (23/11/2011) and tests according to ISO 22197. Complies with REACH Compliance SVHC certifiedHKHL 1501002788J and Bisphenol A free. Health Product Declaration (HPD) with identification 24934 and labeled as DECLARE LBC-COMPLIANT. No hazardous crystalline silica is detected in its composition according to INS report MM_2017046.

It is also considered to be of low eco-toxicity to the environment according to OECD 201, 202, 203, 207 and 208.

Listed in Food Equipment Materials according to NSF/ANSI 51 with all types of food contact. And considered aseptic for the non-growth of bacteria and viruses on its surface according to, ISO846, ASTM G21, ISO 27447, UL2824, and TCID50.

This product is available in various thicknesses (3 mm, 6 mm, 9 mm, 12 mm and 19 mm).

6. RCP AND VERIFICATION

This statement is based on Document

RCP 100 (version 3 - 27/05/2021) Construction products in general

Independent verification of the declaration and data, in accordance with ISO 14025 and IN RCP 100 (version 3 - 27/05/2021)

☑ External

Third party Verifier

Lucas Pedro Berman
Accredited by the administrator of the DAPcons® Programme

Verification date:

02/10/2022

References

- Krion Life Cycle Analysis (2020).
- General DAP®construction programme standards.
- RCP 100 (version 3 - 27/05/2021) Construction products in general.
- UNE-EN 15804:2012+A2:2020 Sustainability in construction. Environmental Product Declarations.
- ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework.
- ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
- ISO 14025:2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
- ISO 14020:2000 Environmental labels and declarations - General principles.
- ISO 21930:2017 Sustainability in building construction. Environmental declaration of construction products and services.

Programme Manager

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