

Environmental Product Declaration



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

Concrete admixtures / impregnates - ConProtect WP 1

from

SL Protection OÜ



Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
Licensee:	N/A
Type of EPD:	EPD of a single product from a manufacturer/service provider
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



General information

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

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR 2019:14 Construction products, version 2.0.1.
PCR review was conducted by: The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com . The review panel may be contacted via support@environdec.com .

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: Dr. Freddy Navarro, LCACHECK S.A.S de C.V., fnavarro@lcacheck.org Approved by: International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

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

EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: SL Protection OÜ

Address: Siduri 3-41, Tallinn, Harjumaa, 11313, Estonia

Contact: Margus Siilo

Address and contact information of the LCA practitioner commissioned by the EPD owner:
BM Certification Estonia OÜ; Väike-Paala 1, 11415, Tallinn, Estonia; info.ee@bmcertification.com.

Description of the organisation:

SL Protection is an Estonian company specializing in the production of concrete admixtures and impregnating agents, offering modern and high-quality solutions for the construction industry. Our goal is to support sustainable and durable construction by providing products that protect concrete and enhance the longevity of projects.

We take pride in creating products based on environmentally friendly principles, delivering effective protection and improving the resilience of concrete surfaces. In addition to innovative products, we provide professional consultancy and support to help ensure the success of every project.

SL Protection continues to grow and evolve, focusing on innovation and meeting customer expectations, making us a trusted choice for any construction project.

Product-related or management system-related certifications: N/A

PRODUCT INFORMATION

Product name: ConProtect WP 1

Product identification: Concrete admixtures / impregnates

UN CPC code: 3549 - Other chemical products n.e.c.

Product description:

ConProtect WP 1 is an easy-to-use liquid concrete admixture based on nanotechnology.

Product application:

ConProtect WP 1 is used to ensure the resistance to water of concrete and to fill microcracks in a humid environment. The admixture, based on nanotechnology provokes chemical reaction with cement, filling the pores and capillaries of the concrete with a sealing insoluble structure.

Technical specification:

Watertightness:

Capillary water absorption – according to the standard (EN 934-2, Table 9, MORTAR), ConProtect WP1 significantly reduced water absorption compared to the measurement standard.

Water under pressure – according to the standard EN 12390-8, water penetration was significantly reduced compared to the reference concrete.

High water resistance (W8) ≤ 10 mm. Self-healing ability of concrete cracks up to 0.5 mm.

Reduction of water demand:

According to standards EN 12350-2 and EN 12350-5, ConProtect WP1 reduces the water demand by $\geq 5\%$ compared to the control mix.

Compressive strength:

Measurement of compressive strength after 7 days (according to EN 934-2, Table 2) showed an increase to 110% of the control mix strength.

Measurement of compressive strength after 28 days (according to EN 934-2, Table 2) showed an increase to 110% of the control mix strength.

Air content:

The requirement (EN 934-2, Table 9) for the air content of the concrete mix, tested according to EN 12350-7, is that the test mix air content may be at most $\leq 2\%$ higher by volume than the control mix air content. Requirement fulfilled.

Sulphate resistance:

Sulphate resistance, measured by both mass loss and length change, improved by up to 25%.

Freeze–thaw resistance:

Freeze–thaw resistance measurement according to EVS 814:2020 showed that the resistance of the treated concrete to attack was equivalent to that of the reference concrete in accordance with the measurement standard.

Physical properties of the product: Appearance: liquid. Colour: transparent. Density: 1.25 ± 0.1 g/ml.

Name and location of production site(s): Vana-Narva mnt 30, Maardu, 74114, Estonia

References to any relevant websites for more information: <https://www.slprotection.eu/>

CONTENT DECLARATION

Information on the environmental and hazardous/toxic properties of a substances contained in the product:

Products do not contain any REACH SVHC substances in amounts greater than 0,1% (1000 ppm).

Other information on substances with hazardous and toxic properties: N/A

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Tap water	0,4000	0	0	0
Natrium silicate	0,6000	0	0	0
Total	1,0000	0	0	0
Packaging				
IBC container per declared unit	0,0108	0	0	0

Note: The packaging can be used an indefinite number of times.

LCA INFORMATION

Declared unit: 1 kg of Concrete admixtures / impregnates - ConProtect WP 1

Reference service life: Average service life 75 years.

Time representativeness: 2024

Geographical scope: The products are exported to the Estonian / European market.
The manufacturing facility located in Estonia, and the main suppliers are located in Europe.

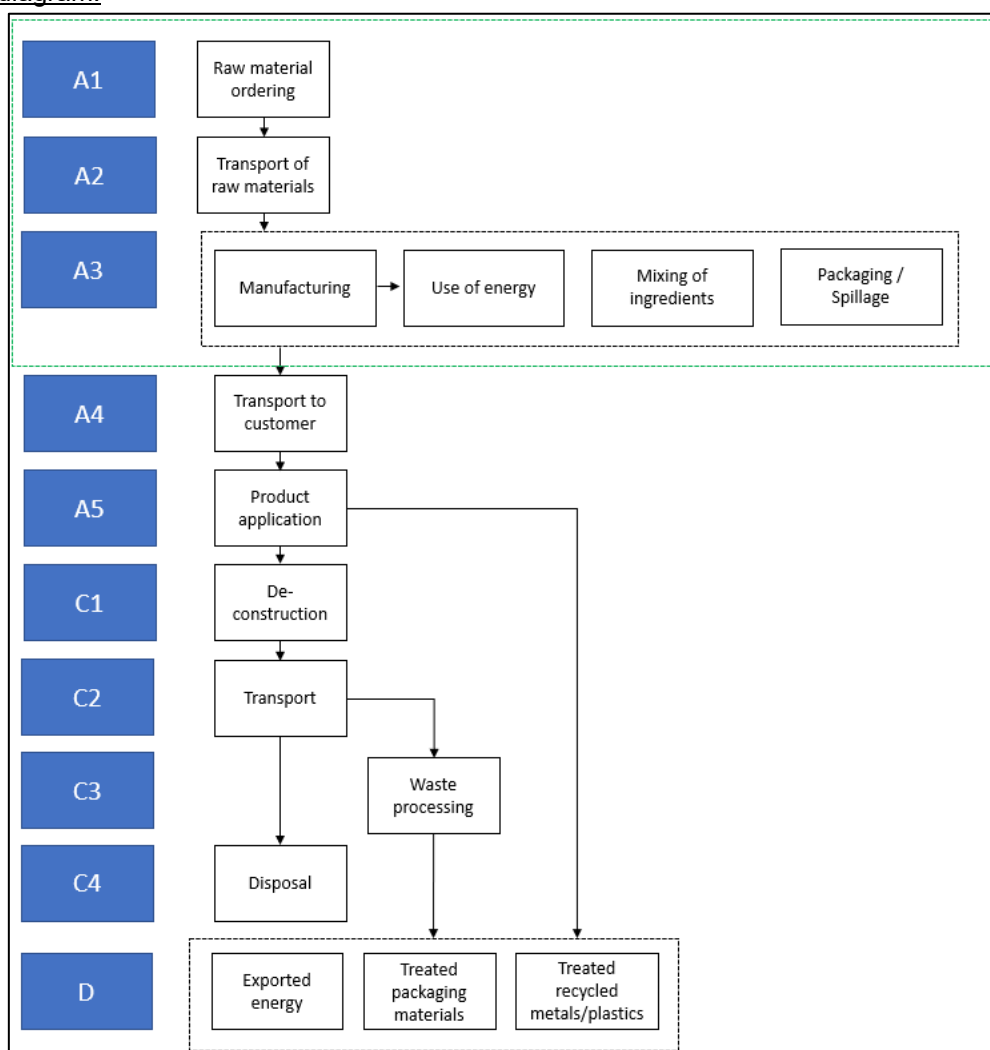
Database(s) and LCA software used:

Calculation software - One Click LCA: EPD Generator - Ecoinvent 3.10.1 (IES PreVerified).

Environmental Impact Assessment Method: EN15804 reference package EF 3.1.

Description of system boundaries: Cradle to gate (A1–A3).

System diagram:



Note: The EPD includes the activities indicated in the green square.

More information: The results have been calculated per 1 kg of product.

The study does not exclude any modules or processes which are mandatory and the applied PCR.

The study does not exclude any hazardous materials or substances.

The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The product is shipped to the consumer in 1000L IBC containers, which are returned to SL Protection and reused. Packaging materials are not included in this assessment, as they are returned to the manufacturer after use by the client - the packaging can be used an indefinite number of times.

Target group: The aim of the study is to provide information and data for EPD for business-to-business communication.

Cut-off criteria: The <1% due difficulties to attributing and minor environmental impacts.

Allocation: In this study, as per EN 15804, allocation is conducted in the following order:

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.

The allocations in the Ecoinvent 3.10.1 datasets used in this study follow the Ecoinvent system model 'Allocation, cut-off, EN15804'.

Electricity:

Energy sources of the electricity used in manufacturing processes of module A3 are modelled using the electricity, "Estonia, residual mix 2023" - 0.68kg CO₂ eq./kWh (100%).

The GHG emission factor was estimated using the GWP-GHG indicator.

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

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Geography	Estonia, Europé			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific data used	19 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Modules/processes/life-cycle stages declared noted with "X". Modules/processes/life-cycle stages not declared marked as "ND".

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3	Share on GWP-GHG results for A1-A3
Manufacturing of product	Collected data	Ecoinvent v3.10.1	2024	Secondary data	0%	81%
Transport to manufacturing site	Database	Ecoinvent v3.10.1	2024	Primary data	14%	14%
Generation of electricity used in manufacturing of product	Database	One Click LCA	2024	Primary data	5%	5%
Production of packaging	Database	Ecoinvent v3.10.1	2024	Primary data	0%	2%
Total share of primary data, of GWP-GHG results for A1-A3					19%*	100%

*The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Data quality assessment

The EPD covers Concrete admixtures / impregnates manufactured in 2024. Production is a discontinuous process in which all components are mechanically mixed in batches. Primary data was collected directly from the manufacturer and suppliers, while background data was sourced from Ecoinvent v3.10.1.

The quality of the data has been assessed according to EN 15804:2012+A2:2019, Annex E, and EN 15941. Using the semi-quantitative evaluation criteria for data quality (DQR) proposed by the European Commission in its Environmental Footprint Guide, the following results were obtained:

- Temporal representativeness (TiR): Very good.
- Geographical representativeness (GeR): Fair.
- Technological representativeness (TeR): Good.

Overall, the data quality is rated between “good” and “very good.” No datasets assessed were rated “very poor.” The assessed datasets together represent more than 80% of the results of each declared environmental impact indicator, ensuring that the EPD is based on sufficiently robust and reliable data.

ENVIRONMENTAL PERFORMANCE

LCA results of the product - main environmental performance results

The effect of the infrastructure involved in the production of raw material, transport means, and energy was included as it was not possible to exclude them.

Characterization factors of EN15804 are based on EF 3.1.

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit		
Indicator	Unit	A1-A3
GWP-total	kg CO ₂ eq.	9,86E-01
GWP-fossil	kg CO ₂ eq.	9,86E-01
GWP-biogenic	kg CO ₂ eq.	1,64E-04
GWP-luluc	kg CO ₂ eq.	5,41E-05
ODP	kg CFC 11 eq.	5,56E-09
AP	mol H ⁺ eq.	1,47E-03
EP-freshwater	kg P eq.	1,40E-01
EP-marine	kg N eq.	3,56E-04
EP-terrestrial	mol N eq.	3,89E-03
POCP	kg NMVOC eq.	1,46E-03
ADP-minerals&metals*	kg Sb eq.	4,26E-07
ADP-fossil*	MJ	1,31E+01
WDP*	m ³	4,40E-01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption	

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

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

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit		
Indicator	Unit	A1-A3
GWP-GHG ¹	kg CO ₂ eq.	9,86E-01

¹ This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

Resource use indicators

Results per functional or declared unit		
Indicator	Unit	A1-A3
PERE	MJ	1,18E-01
PERM	MJ	0,00E+00
PERT	MJ	1,18E-01
PENRE	MJ	1,31E+01
PENRM	MJ	0,00E+00
PENRT	MJ	1,31E+01
SM	kg	4,80E-03
RSF	MJ	6,01E-05
NRSF	MJ	0,00E+00
FW	m ³	1,34E-03
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water	

Waste indicators

Results per functional or declared unit		
Indicator	Unit	A1-A3
Hazardous waste disposed	kg	6,33E-02
Non-hazardous waste disposed	kg	7,74E-02
Radioactive waste disposed	kg	3,71E-05

Output flow indicators

Results per functional or declared unit		
Indicator	Unit	A1-A3
Components for re-use	kg	0,00E+00
Material for recycling	kg	0,00E+00
Materials for energy recovery	kg	0,00E+00
Exported energy, electricity	MJ	0,00E+00
Exported energy, thermal	MJ	0,00E+00

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

Disclaimer: it is not encouraged to use the results of modules A1-A3 without taking into account the results of module C.

The results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity, non cancer and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets, in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes.

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
eq	equivalent
CPC	Central product classification
SVHC	Substances of Very High Concern
ND	Not Declared
IBC	Intermediate bulk container

References

Life-Cycle Assessment Background Report in accordance with EN 15804+A2 & ISO 14025 / ISO 21930.

General Programme Instructions of the international EPD® system. Version 5.0. www.environdec.com.

ISO 14020:2023 Environmental statements and programmes for products. Principles and general requirements.

ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations Principles and procedures.

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

EN 15804:2012+A2:2019 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.

PCR 2019:14 v2.0.1., Construction products, version 2.0.1.

3549 – Other chemical products n.e.c.

LCA background report 01.09.2025.

Data references:

One Click LCA

Ecoinvent 3.10.1 database

Version History

Original Version of the EPD, 2025-09-06

