

# Environmental Product Declaration



INTERNATIONAL EPD SYSTEM



In accordance with ISO 14025:2006, ISO 21930:2017 and  
EN 15804:2012+A2:2019/AC:2021 for:

## Vetrofluid

from

**Ecobeton-USA**



Programme:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator:	EPD International AB
Licensee:	EPD North America
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*EPD of construction products may not be comparable if they do not comply with EN 15804. An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see [www.environdec.com](http://www.environdec.com).*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

<b>Accountabilities for PCR, LCA and independent, third-party verification</b>	
<b>Product Category Rules (PCR)</b>	
CEN standard EN 15804 and ISO standard ISO 21930 serve as the Core Product Category Rules (PCR).	
Product Category Rules (PCR): <i>IES PCR 2019:14 Construction products v. 1.3.4. c-PCR 2019:14-c-PCR-017 Technical-chemical products (for construction sector) (c-PCR to PCR 2019:14) (adopted from EPD Norway 2022-07-08)</i>	
PCR review was conducted by: <i>The Technical Committee of the International EPD System. See <a href="http://www.environdec.com">www.environdec.com</a> for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat <a href="http://www.environdec.com/contact">www.environdec.com/contact</a></i>	
<b>Life Cycle Assessment (LCA)</b>	
LCA accountability: <i>Maggie Wildnauer, Sergio Ballen, WAP Sustainability, LLC</i>	
<b>Third-party verification</b>	
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:	
<input checked="" type="checkbox"/> EPD verification by individual verifier	
Third-party verifier: Sazal Kundu Edge Impact, Greenhouse, Level 3 180 George Street Sydney NSW 2000, Australia Email: <a href="mailto:sazal.kundu@edgeimpact.global">sazal.kundu@edgeimpact.global</a>	
Approved by: The International EPD® System	
Procedure for follow-up of data during EPD validity involves third-party verifier	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804:2012+A2:2019/AC:2021 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 EN 15804, EF 3.1, and ISO 14025.

## Information about EPD owner

Owner of the EPD: Ecobeton-USA

Contact: Mike Consalvi <info@ecobeton-usa.com>

Description of the organization: The Ecobeton group was founded in 1993 in Oslo, and has spread throughout Europe, U.S. and the world through a network of national branches and local distributors. Today the leading production site for Europe is based in Italy.

Ecobeton-USA has the responsibility for product manufacturing and development of the US market. In the United States Ecobeton-USA has focused on concrete, while additionally providing products for brick, stone and wood.

Name and location of production site(s): Vetrofluid is produced in Sparks, NV, United States.

## Product information

Product name: Vetrofluid

Product description: Vetrofluid is a permanent anti-deterioration product protecting concrete from water infiltration, salts, freeze & thaw cycles, corrosive chemicals and more. It is a formula of proprietary catalysts and silicates that allows Vetrofluid to penetrate existing concrete to depths of 1.5" inches (38.1 mm) on average and penetrates and permanently protects new concrete when used as a cure up to 3 inches (76.2 mm)! Vetrofluid seals the pores of all treated concrete and becoming a permanent part of the concrete matrix. When applied to either the positive or negative pressure side. Vetrofluid permanently stops water infiltration hardens and protects all concrete.

The Vetrofluid's catalyst allows it to penetrate 1.5" (38.1) on average into the concrete filling existing voids & cracks up to 0.3 mm wide. Vetrofluid reacts with the free lime, un-hydrated cement and pozzolans that exist in all concrete and when cured becomes a permanent part of the concrete matrix which dramatically improves the life cycle and performance of your concrete while providing a host of other benefits.

UN CPC code: 3511

Geographical scope: United States

Manufacturing process: The raw materials for the product were obtained from the USA. Manufacturing consists of a mixing process of the sodium silicate and the deionized water. There are no direct emissions or waste other than packaging at the mixing facility. The eGRID region's dataset was used to model electricity production. The residual mix was calculated conservatively by removing all renewable energy sources from the dataset. Note that nuclear energy is not considered renewable.

## Product Testing Standards:

Standard	Test
ASTM C1202	Rapid Chloride Ion Penetrability: 448 C (< 61%*)
ASTM E96	Water Vapor Transmission: < 26%
ASTM C1585	Rate of absorption: < 52%
ASTM C666-A	Freeze/Thaw Durability: 94% relative dynamic modulus through 303 cycles with 1-coat
ASTM C779-C	Abrasion Resistance Improvement: > 30%
ASTM E303	Skid Resistance: Negligible difference wet & dry between treated and untreated
ASTM C1543	15% NaCl Solution Absorption1): < 59% 15% NaCl Solution Vapor Transmission < 26%
ASTM 156	Water Retention: Comparable results with membrane curing compounds.
MTO LS-412	Salt Scaling Resistance: 0.123 kg/m <sup>2</sup> (std < 0.8 kg/m <sup>2</sup> )
MTO LS-417	Chloride Content: 0.231% by mass (<16%*)
CRD C48-92	Water Permeability of Concrete: 0.0 cm <sup>3</sup> , depth 1-inch @ 200 psi after 10-days.
EN 13892	Abrasion resistance: improvement > 30%
EN 1062-3	Capillary absorption and water permeability: w < 0.1 kg/m <sup>2</sup> x h0,5
EN 13529	Chemical resistance (astringent attack): no visible defects
EN 13687-1	Thermal compatibility: ≥ 1.5 N/mm <sup>2</sup>
EN ISO 6272-1	Falling-weight test: Classes III: ≥ 20 Nm
EN 1542	Bond strength by pull-off: ≥ 1.5 N/mm <sup>2</sup>
EN 13501-1	Reaction to fire tests: Euro class A1 Slip/skid resistance: NA Depth of penetration: > 10 mm Dangerous substances: absent

## LCA information

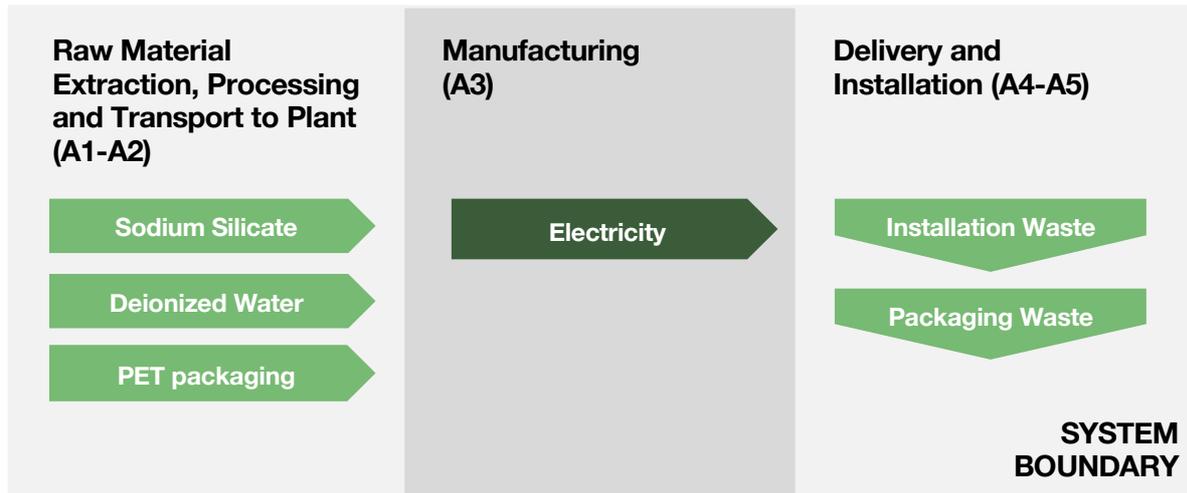
Declared unit: The declared unit is 1 kg of applied product.

Time representativeness: 01 January 2023 – 31 December 2023

Database(s) and LCA software used: Ecoinvent 3.10 and SimaPro 9.6.0.1

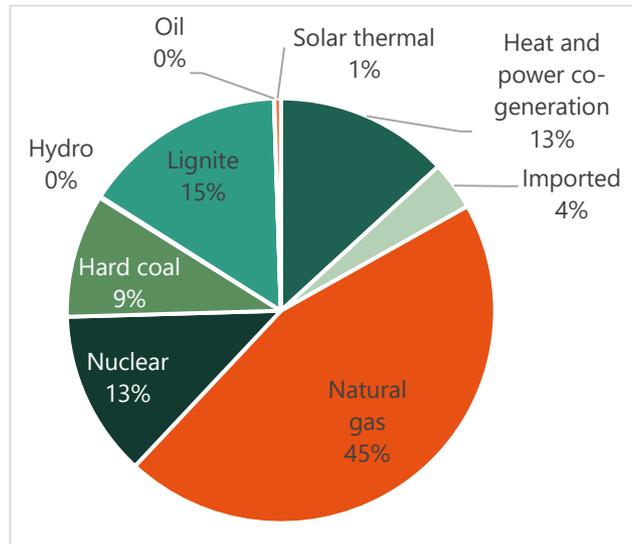
Description of system boundaries: Cradle-to-Gate with options (additional modules A4-A5).

System diagram:



More information:

Manufacturing (A3) electricity mix GWP-GHG: 0.37 kg CO<sub>2</sub> eq./kWh



### A4 transportation details

Vehicle Type	Freight, lorry 16-32 metric ton, EURO4
Fuel Type	Diesel
Distance [km]	1.61E+02
Bulk density of transported products [kg/m <sup>3</sup> ]	1.13E+03
Capacity Utilization [%]	63%
Volume capacity utilization factor	<1

### A5 details

Ancillary materials for installation [kg]	0
Water use [m <sup>3</sup> ]	0
Other resource use [kg]	0
Energy consumption during the installation process [kWh]	0
Waste materials by the product's installation [kg]	3.80E-02
Wastewater [m <sup>3</sup> ; kg]	8.89E-06; 1.00E-02
Output materials of waste processing at the building site [kg]	0
Direct emissions to ambient air, soil and water [kg]	0
Distance to landfill [km]	1.61E+02

### Assumptions

- A distance of 160.9 km (100 miles) by truck was assumed for the delivery of 1 m<sup>3</sup> (264-gallon) totes to the facility (A2), delivery to clients (A4), and transportation of waste.
- 1% of the product is lost when installed.

### Cut-off criteria

Material inputs individually greater than 1% (based on the total mass of the final product) were included within the scope of analysis. Material inputs individually less than 1% were included if sufficient data were available to warrant inclusion and/or the material input was thought to have a significant environmental impact. No material was knowingly excluded from the study.

### Allocation procedures

General principles of allocation were based on ISO 14040/44. As a default, secondary Ecoinvent datasets use a physical basis for allocation. Of relevance to the defined system boundary is the method in which recycled materials were handled. Throughout the study, recycled materials were accounted for via the cut-off method. Additionally, impacts and benefits associated with secondary functions of materials at the end of life are also excluded.

### Infrastructure/capital goods

Infrastructure and capital goods used in the product are excluded.

## Modules declared

	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
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Geography	US	US	US	US	US												
Specific data used	< 10%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	n/a					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-

This type of EPD excludes modules C and D because the product is physically integrated with other products during installation, so they cannot be physically separated from them at the end of life, and the product is no longer identifiable at the end of life as a result of a physical or chemical transformation process. Finally, the product does not contain biogenic carbon.

## Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Sodium Silicate (37.5%)	0.26	0%	0%; 0 kg C/kg
Deionised Water	0.74	0%	0%; 0 kg C/kg
TOTAL	1.00	0%	0%; 0 kg C/kg
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Polyethylene terephthalate	0.028	2.8%	0%; 0 kg C/kg
TOTAL	0.028	2.8%	0%; 0 kg C/kg

This product does not contain substances on the candidate list of Substances of Very High Concern (SVHC) at a percentage higher than 0.1% by mass.

## Results of the environmental performance indicators

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.

### Mandatory impact category indicators according to EN 15804 EF 3.1

Indicator	Unit	A1-A3	A4	A5
GWP-fossil	kg CO <sub>2</sub> eq.	3.68E-01	2.55E-02	7.69E-03
GWP-biogenic	kg CO <sub>2</sub> eq.	5.19E-03	3.22E-06	5.85E-05
GWP-luluc	kg CO <sub>2</sub> eq.	1.32E-04	8.33E-07	1.48E-06
GWP-total	kg CO <sub>2</sub> eq.	3.74E-01	2.55E-02	7.75E-03
ODP	kg CFC 11 eq.	4.19E-07	3.72E-10	4.21E-09
AP	mol H <sup>+</sup> eq.	1.93E-03	9.64E-05	2.40E-05
EP-freshwater	kg P eq.	9.65E-06	6.19E-08	1.15E-07
EP-marine	kg N eq.	3.18E-04	3.95E-05	5.47E-06
EP-terrestrial	mol N eq.	4.44E-03	4.33E-04	6.47E-05
POCP	kg NMVOC eq.	1.27E-03	1.40E-04	2.03E-05
ADP-minerals&metals*	kg Sb eq.	9.78E-06	1.52E-09	9.80E-08
ADP-fossil*	MJ, net calorific value	4.64E+00	3.44E-01	6.22E-02
WDP*	m <sup>3</sup> world eq. deprived	1.44E-01	3.11E-04	-3.41E-03
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.

### Additional mandatory environmental impact indicators

Indicator	Unit	A1-A3	A4	A5
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	3.69E-01	2.55E-02	7.70E-03

<sup>1</sup> 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 CO<sub>2</sub> is set to zero.

## Resource use indicators

Indicator	Unit	A1-A3	A4	A5
PERE	<i>MJ, net calorific value</i>	1.90E-01	5.51E-04	1.98E-03
PERM	<i>MJ, net calorific value</i>	0.00E+00	0.00E+00	0.00E+00
PERT	<i>MJ, net calorific value</i>	1.90E-01	5.51E-04	1.98E-03
PENRE	<i>MJ, net calorific value</i>	3.41E+00	3.44E-01	1.30E+00
PENRM	<i>MJ, net calorific value</i>	1.24E+00	0.00E+00	-1.24E+00
PENRT	<i>MJ, net calorific value</i>	4.64E+00	3.44E-01	6.22E-02
SM	<i>kg</i>	5.36E-04	0.00E+00	0.00E+00
RSF	<i>MJ, net calorific value</i>	0.00E+00	0.00E+00	0.00E+00
NRSF	<i>MJ, net calorific value</i>	0.00E+00	0.00E+00	0.00E+00
FW	<i>m<sup>3</sup></i>	3.53E-03	1.29E-05	-7.72E-05
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 and output flow indicators

Indicator	Unit	A1-A3	A4	A5
Hazardous waste disposed	<i>kg</i>	2.73E-05	2.36E-06	3.78E-07
Non-hazardous waste disposed	<i>kg</i>	1.09E-02	1.40E-05	2.81E-02
Radioactive waste disposed	<i>kg</i>	1.63E-06	1.21E-08	1.79E-08
Components for re-use	<i>kg</i>	2.52E-03	0.00E+00	0.00E+00
Material for recycling	<i>kg</i>	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	<i>kg</i>	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	<i>MJ, net calorific value</i>	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	<i>MJ, net calorific value</i>	0.00E+00	0.00E+00	0.00E+00

## TRACI 2.1 Indicators

Indicator	Unit	A1-A3	A4	A5
Ozone depletion	kg CFC-11 eq	3.76E-07	3.94E-10	3.78E-09
Global warming	kg CO <sub>2</sub> eq	3.63E-01	2.52E-02	7.24E-03
Smog	kg O <sub>3</sub> eq	1.97E-02	2.51E-03	3.16E-04
Acidification	kg SO <sub>2</sub> eq	1.61E-03	8.80E-05	2.04E-05
Eutrophication	kg N eq	1.30E-04	5.86E-06	2.63E-06

Additional environmental impact indicators, per EN15804+A2 (EF 3.1), are not declared in this EPD.

## Additional environmental information

Details on additional sustainability certifications and ratings for products can be found on [Ecobeton-USA's website](#).

## References

- CEN. (2019). *EN 15804+A2: Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products*. European Committee for Standardization.
- ISO. (2006). *ISO 14025: Environmental labels and declarations - Type III environmental declarations - Principles and procedures*. Geneva: International Organization for Standardization.
- ISO. (2006). *ISO 14040/Amd 1:2020: Environmental management - Life cycle assessment - Principles and framework*. Geneva: International Organization for Standardization.
- ISO. (2006). *ISO 14044/Amd 1:2017/Amd 2:2020: Environmental Management - Life cycle assessment - Requirements and Guidelines*. Geneva: International Organization for Standardization.
- ISO. (2018). *ISO 14067: Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification*. Geneva: International Organization for Standardization.
- Ecoinvent. (2022). *ecoinvent Version 3.9.1*. Retrieved from <https://ecoinvent.org/the-ecoinvent-database/>
- ISO. (2017). *ISO 21930: Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services*. Geneva: International Organization for Standardization.
- IPCC. (2013). *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. . Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.
- IES. (2024). PCR 2019:14 Construction products v.1.3.4: <https://www.environdec.com/>
- EPD Norge. (2021). PCR 2019:14-c-PCR-017 Technical-chemical products (for construction sector) (c-PCR to PCR 2019:14) (adopted from EPD Norway 2022-07-08): <https://www.epd-norge.no/>

