ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Sika Norge AS
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-SIK-20250045-IBA1-EN
Issue date	16.04.2025
Valid to	15.04.2030

Sika® ViscoCrete®-1025

Sika Norge AS

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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BUILDING TRUST

General Information

Sika Norge AS

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-SIK-20250045-IBA1-EN

This declaration is based on the product category rules:

Concrete admixtures, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

16.04.2025

Valid to

15.04.2030

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

Sika® ViscoCrete®-1025

Owner of the declaration

Sika Norge AS
Sanitetsveien 1
2013 SKJETTEN
Norway

Declared product / declared unit

1 kg of Sika® ViscoCrete®-1025 with a density of 1.05 g/ml.

Scope:

This core-EPD relates to 1 kg of Sika® ViscoCrete®-1025 (admixture group of superplasticizer) applied into the building, manufactured at Sika's plant in Skytta, Hagan, Norway and is representative for the year 2024.

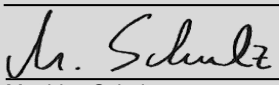
The results in this core-EPD were calculated using an LCA-tool verified by IBU in 2023.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally



Matthias Schulz,
(Independent verifier)

Product

Product description/Product definition

Sika® ViscoCrete®-1025 is a liquid superplasticizer for concrete and mortar. It reduces the water content of mixed concrete without detriment to its consistency or enhances its slump with or without change to the water content or causes both effects simultaneously.

For the purpose of this EPD, Sika Norway manufacturing unit Skytta is selected.

The product needs a declaration of performance taking into consideration *EN 934-2 2009+A1:2012*. Admixtures for concrete, mortar and grout – Part 2: Concrete admixtures – Definitions, requirements, conformity, marking and labelling and the CE-marking. For the application and use the respective national provisions apply.

Application

Sika® ViscoCrete®-1025 is used as a constituent material to produce concrete. It can be used in combination with other Sika admixtures.

Technical Data

Sika® ViscoCrete®-1025 meets the requirements of *EN 934-2:2009 + A1:2012*, Table 3.1/3.2.

Constructional data

Name	Value	Unit
Density (ISO 758)	1.05 ± 0.02	g/ml
Solids content (EN 480-8)	25.0 ± 1.0	M.-%
pH value (ISO 4316)	4.5 ± 1.0	$-\log_{10}(a_{H_+})$
Chloride content (EN 480-10)	≤ 0,01	M.-%
Alkali content (EN 480-12)	≤ 1,0	M.-%
Corrosion behavior (EN 934-1 / EN 480-14)	Contains only components from EN 934-1:2008 Annex A.1 Approved list	µ A/cm^2
Air content of fresh concrete (EN 12350-7)	Test mix ≤ 2 % by volume above control mix	Vol.-%
Compressive strength (EN 12390-3)	At +20 °C and 24 h: test mix ≥ 140 % of control mix; at +20 °C and 28 d: test mix ≥ 115 % of control mix; at +20 °C and 28 d: test mix ≥ 90 % of control mix (Table 3.2/reference concrete IV)	N/mm^2
Water reduction (EN 12350-2 / EN 12350-5) Plasticizer	In test mix ≥ 12 % compared with control mix	mm
Increasing / maintaining of consistence (EN 12350-2 / EN 12350-5) Superplasticizer	Increase in slump ≥ 120 mm from initial (30 ± 10) mm, 30 min after the addition the consistence of the test mix shall not fall below the value of the control mix	mm

Base materials/Ancillary materials

The raw materials and additives of Sika® ViscoCrete®-1025 can be given as follows:

Water: 60 - 85 %
Polycarboxylate ether: 20 - 30 %
Additives: 1 – 5 %

This product contains substances listed in *the candidate list* (date: 21.01.2025) exceeding 0.1 percentage by mass: No

This product contains other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: No

Biocide products were added to this contribution product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) ordinance on Biocide Products Number 528/2012): Yes
Contains 1,2-benzisotiazol-3(2H)-on (BIT), 2-oktyl-2H-isotiazol-3-on (OIT) and (ethylenedioxy)dimethanol.

Please refer to the most recent Safety Datasheet for further details.

Reference service life

The durability of concrete admixtures is normally at least as long as the lifetime of the building in which it is used.The documentation of the RSL is not required for the EPDs calculated using the EPD tool from Sika since the entire life cycle is not declared. Only modules A1-A3, A4, A5, C1, C2, C3, C4 and D are considered.

LCA: Calculation rules

Declared Unit

The EPD refers to the declared unit of 1 kg of concrete admixture (Superplasticizer) applied to the building with a

density of 1.05 g/ml in accordance with *IBU PCR 04-2023 part B*.

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	kg
Gross density	1050	kg/m^3

System boundary

Declaration type with respect to life cycle stages covered according to clause 5.2 *EN 15804+A2* is cradle to gate with modules C1–C4 and module D (A1–A3, A4, A5, C and D). Modules taken into account:

- A1 Production of preliminary products
- A2 Transport to the plant
- A3 Production including provision of energy, production of auxiliaries and consumables and waste treatment
- A4 Transport from the construction site to the installation site
- A5 Installation, admixtures applied into the building during A5 phase operations. At this stage, an impact of the production and treatment of installation residue equal to 1% of the product is considered.
- C1-C2-C3-C4, D: The building deconstruction (demolition process) takes place in C1 module which considers energy production and consumption in terms of diesel and all the emissions connected with the fuel-burning process. After the demolition, the admixture is transported to the end-of-life processing (module C2) where all the impacts related to the transport processes are considered. C3: Waste processing. No waste processing is considered. One scenario is considered for the final treatment of the waste:100% disposal (C4), modelled by the landfill process where admixtures end their life cycle. Module D accounts for benefits that are beyond the defined system boundaries. Credits are generated during the incineration of the installation scrap in module A5.

Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Norway

Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account. *Sphera LCA for Expert software (version 10)* and *Managed LCA Content (2022.2)* have been used.

LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

No biogenic carbon is contained in the product. Since the product is delivered to the installation site in tank trucks, or in reusable containers no packaging is considered.

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	-	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Transport from the gate to the side (A4)

Name	Value	Unit
Transport distance	600	km
Gross density of products transported	1050	kg/m^3

Assembly (A5)

Material loss regards the amount of product not used during the application phase into the building. This amount is 1 % of the product, impacts related to the production of this part are charged to the A5 module. This percentage is considered as waste to incineration since the product has a calorific value and impacts of its end of life have been considered in the LCA model and declared in A5.

Name	Value	Unit
Material loss	0.01	kg
Other resources	-	kg

End of life (C1-C4)

C1: This module considers the use of machinery (7.5E-5 kg of diesel for kg handled) to dismantle the product to enable its subsequent transport.
C2: The concrete demolition waste is transported from the building site to a treatment plant or disposal site by truck and an average distance of 50 km is considered.
C3: No waste processing is considered.
C4: The results for the end-of-life are declared for one scenario.

Name	Value	Unit
Landfill Percentage	100	%
Landfilling	1	kg

LCA: Results

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	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	MND	MND	MNR	MNR	MNR	MND	MND	X	X	MND	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 kg Sika® ViscoCrete®-1025

Parameter	Unit	A1-A3	A4	A5	C1	C2	C4	D
GWP-total	kg CO_2 eq	6.62E-01	3.01E-02	1.93E-02	2.83E-04	6.27E-03	1.45E-02	-3.15E-03
GWP-fossil	kg CO_2 eq	6.53E-01	2.88E-02	1.41E-02	2.7E-04	6E-03	1.49E-02	-3.13E-03
GWP-biogenic	kg CO_2 eq	7.42E-03	1.3E-03	5.22E-03	1.23E-05	2.71E-04	-4.42E-04	-1.47E-05
GWP-luluc	kg CO_2 eq	1.13E-03	1.31E-06	1.19E-05	1.25E-08	2.72E-07	2.75E-05	-3.1E-07
ODP	kg CFC11 eq	2.66E-12	2.95E-15	2.17E-14	2.82E-17	6.15E-16	3.51E-14	-1.85E-14
AP	mol H^+ eq	1.22E-03	8.39E-05	9.41E-05	3.62E-06	1.91E-05	1.06E-04	-3.83E-06
EP-freshwater	kg P eq	3.17E-06	6.73E-09	8.33E-09	6.41E-11	1.4E-09	2.53E-08	-3.79E-09
EP-marine	kg N eq	3.52E-04	3.86E-05	1.33E-05	1.65E-06	8.89E-06	2.71E-05	-1.07E-06
EP-terrestrial	mol N eq	3.84E-03	4.25E-04	1.8E-04	1.81E-05	9.78E-05	2.97E-04	-1.15E-05
POCP	kg NMVOC eq	1.51E-03	7.8E-05	4.53E-05	4.95E-06	1.77E-05	8.22E-05	-3.02E-06
ADPE	kg Sb eq	7.6E-07	1.51E-09	1.73E-09	1.44E-11	3.14E-10	1.53E-09	-4.32E-10
ADPF	MJ	1.76E+01	4.03E-01	2.69E-01	3.84E-03	8.39E-02	1.95E-01	-5.29E-02
WDP	m^3 world eq deprived	1.77E-01	7.79E-05	3.73E-03	7.43E-07	1.62E-05	1.64E-03	-2.93E-04

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 kg Sika® ViscoCrete®-1025

Parameter	Unit	A1-A3	A4	A5	C1	C2	C4	D
PERE	MJ	1.48E+00	2.44E-03	1.29E-02	2.33E-05	5.08E-04	2.93E-02	-1.28E-02
PERM	MJ	0	0	0	0	0	0	0
PERT	MJ	1.48E+00	2.44E-03	1.29E-02	2.33E-05	5.08E-04	2.93E-02	-1.28E-02
PENRE	MJ	1.28E+01	4.05E-01	2.69E-01	3.86E-03	8.42E-02	1.96E-01	-5.29E-02
PENRM	MJ	4.82E+00	0	0	0	0	0	0
PENRT	MJ	1.76E+01	4.05E-01	2.69E-01	3.86E-03	8.42E-02	1.96E-01	-5.29E-02
SM	kg	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	m^3	5.18E-03	3.32E-06	9.33E-05	3.16E-08	6.9E-07	4.97E-05	-1.23E-05

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 kg Sika® ViscoCrete®-1025

Parameter	Unit	A1-A3	A4	A5	C1	C2	C4	D
HWD	kg	1.18E-09	1.4E-12	1.02E-11	1.33E-14	2.91E-13	1.01E-11	-7.46E-12
NHWD	kg	1.52E-02	4.13E-05	1.21E-03	3.94E-07	8.6E-06	1E+00	-2.52E-05
RWD	kg	4.96E-04	6.67E-07	3.88E-06	6.36E-09	1.39E-07	2.18E-06	-3.67E-06
CRU	kg	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0
EEE	MJ	0	0	1.23E-02	0	0	0	0
EET	MJ	0	0	2.81E-02	0	0	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 kg Sika® ViscoCrete®-1025

Parameter	Unit	A1-A3	A4	A5	C1	C2	C4	D
PM	Disease incidence	1.11E-08	4.81E-10	7.2E-10	1.93E-10	1.06E-10	1.3E-09	-3.17E-11
IR	kBq U235 eq	6.99E-02	1E-04	4.9E-04	9.55E-07	2.08E-05	2.42E-04	-6.21E-04
ETP-fw	CTUe	8.8E+00	2.87E-01	1.95E-01	2.74E-03	5.97E-02	1.1E-01	-1.03E-02
HTP-c	CTUh	3.21E-10	5.34E-12	4.49E-12	5.09E-14	1.11E-12	1.67E-11	-5.18E-13
HTP-nc	CTUh	2.43E-08	2.62E-10	1.69E-10	3.52E-12	5.51E-11	1.85E-09	-2.01E-11
SQP	SQP	1.82E+00	2.39E-03	1.63E-02	2.28E-05	4.98E-04	4.07E-02	-8.32E-03

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

This EPD was created using a software tool.

References

Standards

EN 15804
EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

ISO 14025
EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

ISO 4316
ISO 4316:1977, Surface active agents — Determination of pH of aqueous solutions — Potentiometric method

ISO 758
ISO 758:1976, Liquid chemical products for industrial use — Determination of density at 20 degrees C

EN 196-2
EN 196-2:2013, Test methods for cement – Part 2: Chemical analysis of cement

EN 206+A1
EN 206:2013+A1:2016, Concrete – Part 1: Specification, performance, production and conformity

EN 480-1
EN 480-1:2014, Admixtures for concrete, mortar and grout – Test methods – Part 1: Reference concrete and reference mortar for testing

EN 480-6
EN 480-6:2005, Admixtures for concrete, mortar and grout – Test methods – Part 6: Infra red analysis

EN 480-8
EN 480-8:2012, Admixtures for concrete, mortar and grout – Test methods – Part 8: Determination of the conventional dry material content

EN 480-10 & 12
EN 480-10:2009, Admixtures for concrete, mortar and grout – Test methods – Part 10: Determination of water-soluble chloride content
EN 480-12:2005
EN 480-12:2005, Admixtures for concrete, mortar and grout – Test methods – Part 12: Determination of the alkali content of admixtures

EN 934-1, 2 & 6
EN 934-1:2008, Admixtures for concrete, mortar and grout – Part 1: Common requirements
EN 934-2:2009+A1:2012, Admixtures for concrete, mortar and grout – Part 2: Concrete admixtures – Definitions, requirements, conformity, marking and labelling
EN 934-6:2019, Admixtures for concrete, mortar and grout – Part 6: Sampling, assessment and verification of the constancy of performance

EN 12350-2 & 7
EN 12350-2:2019, Testing fresh concrete – Part 2: Slump test
EN 12350-7:2019, Testing fresh concrete – Part 7: Air content – Pressure methods

EN 12390-3:2019
EN 12390-3:2019, Testing hardened concrete – Part 3: Compressive strength of test specimens

Further References

IBU 2021
Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V., Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021
www.ibu-epd.com

Candidate list
Candidate List of substances of very high concern for Authorisation published by the European Chemicals Agency in accordance with Article 59(10) of the REACH Regulation.

LCA Calculator
LCA Calculator software (version 6).
https://sphera.com/yourpath[
1]to-sustainability/

LCA for Experts
Life cycle assessment software (version 10), by Sphera Solutions GmbH, Leinfelden-Echterdingen, 2022
https://sphera.com/life-cycle-assessment-lca-software/

Managed LCA Content
Life cycle assessment database, by Sphera Solutions GmbH, Leinfelden-Echterdingen, 2022
https://sphera.com/life-cycle-assessment-lca-database/

PCR Part A
PCR - Part A: Calculation rules for the Life Cycle Assessment and Requirements on the Background Report, version 1.3, Institut Bauen und Umwelt e.V., 08-2021.

PCR Part B
PCR – Part B:Requirements on the EPD for Concrete admixtures, Institut Bauen und Umwelt e.V., 04-2023

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