

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

Owner of the Declaration	Sika Services AG
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-SIK-20240054-IBA1-EN
Issue date	30/04/2025
Valid to	29/04/2030

Sikaplan® SGK
Sika AG

www.ibu-epd.com | <https://epd-online.com>



1. General Information

Sika AG

Programme holder

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

Declaration number

EPD-SIK-20240054-IBA1-EN

This declaration is based on the product category rules:

Plastic and elastomer roofing and sealing sheet systems,
01/08/2021
(PCR checked and approved by the SVR)

Issue date

30/04/2025

Valid to

29/04/2030



Dipl.-Ing. Hans Peters
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Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

Sikaplan® SGK

Owner of the declaration

Sika Services AG
Tüffenwies 16-22
8064 Zurich
Switzerland

Declared product / declared unit

1 m² of Sikaplan® SGK polymer waterproofing membrane

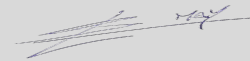
Scope:

This document represents a specific EPD for Sikaplan® SGK polymeric waterproofing membrane with 1.5 mm thickness manufactured by Sika in Troisdorf, Germany. Formula to calculate impacts for module A1-A3 of other thicknesses is provided. The life cycle assessment data are based on production data from 2023 collected by Sika. The intended use of the EPD is to communicate (B2B - Business to Business) environmentally relevant information and LCA results to support the assessment of the sustainable use of resources and of the impact of construction works on the environment. 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



Sr Lucas Berman,
(Independent verifier)

2. Product

2.1 Product description/Product definition

Sikaplan® SGK is a multi-layer synthetic roof waterproofing sheet based on polyvinyl chloride (PVC) with embedded glass non-woven and polyester fleece backing. Sikaplan® SGK waterproofing sheets are available in these thicknesses: 1.2 mm, 1.5 mm and 1.8 mm. For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) Regulation (EU) No. 305/2011 (CPR) applies. The product needs a declaration of performance taking into consideration EN 13956-2012, Plastic and rubber sheets for roof waterproofing.

For the application and use the respective national provisions apply.

All values given in the LCA result section apply to Sikaplan® SGK-15 (1.5 mm thickness); a formula for individually calculating values for other thicknesses is given in Chapter 5.

2.2 Application

Sikaplan® SGK waterproofing sheets are used for fully bonded waterproofing flat roofs with any slope. Substrates can be bitumen sheet membranes, concrete, fiber cement boards, metal decking, plywood and various thermal insulation boards.

2.3 Technical Data

In the following table, only technical data relevant to Sikaplan® SGK waterproofing sheets are given.

Constructional data

Name	Value	Unit
Watertightness (EN 1928)	Pass	-
Tensile strength MD (EN 12311-2)	≥ 600	N/50mm
Tensile strength CMD (EN 12311-2)	≥ 600	N/50mm
Elongation MD (EN 12311-2)	≥ 50	%
Elongation CMD (EN 12311-2)	≥ 50	%
Joint peel resistance (EN 12316-2)	≥ 300	N/50mm
Joint shear resistance (EN 12317-2)	≥ 500	N/50mm
Tear strength MD (EN 12310-2)	≥ 150	N/50mm
Tear strength CMD (EN 12310-2)	≥ 150	N/50mm
Resistance to UV exposure (EN 1297)	Pass (> 5000h / grade 0)	-
Dimensional stability MD (EN 1107-2)	≤ 0.3	%
Dimensional stability CMD (EN 1107-2)	≤ 0.3	%
Foldability at low temperature (EN 495-5)	≤ -25	°C
Resistance to impact hard (EN 12691)	≤ 700	mm
Resistance to impact soft (EN 12691)	≤ 1500	mm
Hail resistance rigid (EN 13583)	≥ 22	m/s
Hail resistance flexible (EN 13583)	≥ 30	m/s
Reaction to fire (EN 13501-1)	Class E	-
Water vapour transmission (EN 1931)	μ = 20`000	-

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to EN 13956:2012, Flexible sheets for waterproofing.

2.4 Delivery status

The products are delivered palletised: 20m x 2m, 15m x 2m, each 14 rolls per pallet.

2.5 Base materials/Ancillary materials

The base materials and ancillary materials of Sikaplan® SGK polymeric waterproofing membrane are:

- Polyvinyl chloride / PVC: 45 - 55 %
- Plasticiser (Phthalate): 28 - 35 %
- Stabiliser (UV/Heat): 1 - 2 %
- Fire retardant (inorganic): 0 - 10 %
- Carrier (Polyester scrim): 1 - 3 %
- Pigments: 0 - 8 %

This product contains no substances listed in the Candidate List of Substances of Very High Concern for Authorisation (SVHC).

2.6 Manufacture

Sikaplan® SGK polymeric waterproofing sheets are manufactured in the following steps:

- Dosing of the various raw materials and plastification of the mixture in an extruder
- Rolling the melt into sheets by calendar processing
- Cooling and reeling the sheets
- Heat fusing of two sheets (top and bottom layers), embedding a polyester mesh, on a lamination machine
- Trimming the sheets and winding them onto cardboard spools made of recycled paper
- Wrapping the rolls in PE stretch film, palletising

The emission factors considered during the production phase (modules A1-A3) for energy consumption are:

- electricity = 1,09E-01 kg CO₂e/kWh
- gas = 1,32E-02 kg CO₂e/MJ

2.7 Environment and health during manufacturing

In the production of the Sikaplan® SGK polymeric waterproofing membrane, the regulatory standards for exhaust gasses, waste water and solid waste as well as for noise emissions are fully met and the various limits are not exceeded. The health of production personnel is not put at risk during production. Waste gasses from the production process are collected and filtered in exhaust gas scrubbers. Water used is used exclusively for cooling and does not come into contact with the polymeric waterproofing membrane. There are no hazardous goods according to the REACH listing. In addition to national requirements, there are Sika strategic goals for waste, energy and water reduction, as well as for zero personal accidents at work. There are regular meetings with the neighbourhood for feedback regarding, e.g. noise. Employees receive regular training for process standards, and for safety and hazards. Sika maintains an environmental management system certified in accordance with ISO 14001.

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2.8 Product processing/Installation

Sikaplan® SGK polymeric waterproofing sheets are fully bonded to roofs with any slope. Seams between sheets are hot air welded.

In principle, the current product data sheet should be consulted. Please request further information from your local Sika organisation.

2.9 Packaging

The rolls of polymeric waterproofing sheets are wrapped in PE stretch foil and shipped on pallets. The cardboard spools are made of recycled paper. The packaging materials can be sorted and collected for recycling.

2.10 Condition of use

Professionally installed and properly used, the condition of Sikaplan® SGK polymeric waterproofing membrane remains unchanged throughout its service life.

2.11 Environment and health during use

During their service life, Sikaplan® SGK synthetic waterproofing sheets have no negative influence on the environment and health of users.

2.12 Reference service life

The reference service life of Sikaplan SGK is at least in excess of 35 years. According to Agrément Certificate 09/4668 under normal service conditions, the product will provide a durable roof waterproofing with a service life in excess of 35 years.

2.13 Extraordinary effects

Fire

Sikaplan® SGK polymeric waterproofing membrane is classified in Construction Material Class E, as defined by EN 13501-1:

- Building material class E

Water

No environmental impact due to water exposure of the installed Sikaplan® SGK polymeric waterproofing membrane is known.

Mechanical destruction

Sikaplan® SGK polymeric waterproofing membrane possesses good mechanical strength and is highly robust. No environmental impact is known to result from unexpected mechanical damage.

2.14 Re-use phase

After use, Sikaplan® SGK membrane cannot be reused or recycled.

As a PVC-based polymer membrane, it can be used for an energy recovery process by incineration.

2.15 Disposal

As an alternative to energy recovery, Sikaplan® SGK membrane can be treated by landfilling. Sikaplan SGK polymeric waterproofing membrane can be classified under Waste Code 170904 as defined by the European Waste Catalogue.

2.16 Further information

More information about the company and its products is available on the internet at www.sika.com. Detailed information on the polymeric waterproofing membranes is available at your local Sika organisation's website.

3. LCA: Calculation rules

3.1 Declared Unit

This declaration applies to 1 m² of Sikaplan® SGK-15 polymeric waterproofing membrane, thickness 1.5 mm. A formula is given for an independent calculation of the values for other thicknesses.

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	m ²
Grammage	2.1	kg/m ²
Layer thickness	0.0015	m

3.2 System boundary

Type of EPD: Cradle-to-grave with options.

The system boundaries of the EPD follow the modular construction system described by EN 15804+A2. The LCA takes into account the following modules:

- A1-A3: Manufacturing of pre-products, packaging, ancillary materials, transport to the factory, production including energy supply and waste handling
- A4: Transport to the building site
- A5: Installation into the building (energy consumption, disposal of packaging, fixing screws)
- C1: Deconstruction and demolition
- C2: Transport to the waste treatment plant
- C3/1: Waste incineration - Scenario 1
- C4/2: Disposal - Scenario 2
- D/1: Potential for reuse, recovery and/or recycling as net flows and benefits - scenario 1
- D/2: Potential for reuse, recovery and/or recycling as net flows and benefits - scenario 2

3.3 Estimates and assumptions

The membrane is assumed to be removed by hand at End of life, so no inputs/outputs are considered.

3.4 Cut-off criteria

In the assessment, all available data from production processes are considered, i.e. all raw materials used, utilised thermal energy, and electric power consumption using best available LCI datasets. Thus, material and energy flows contributing less than 1% of mass or energy are considered. The sum of the excluded material flows does not exceed 5% of mass, energy or environmental relevance.

3.5 Background data

The primary data provided by Sika was derived from the plant in Troisdorf, Germany. The underlying data were collected in the Sphera database (Managed LCA Content v. 2024.2). The German green electrical energy mix was applied.

3.6 Data quality

To simulate the product stage, data recorded by Sika from the production year 2023 were used. All other relevant background datasets were taken from generic data not older than 5 years, using as many as datasets possible for raw materials and processes with technological and geographical representativeness.

3.7 Period under review

The period under review is the year 2023.

3.8 Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product's

lifespan: Europe

3.9 Allocation

During the data collection phase, allocations were applied by Sika to refer all inputs to 1 m² of product. These include:

- Allocation of energy consumption and raw material use to individual products within the factory.
- Allocation for co-production processes where multiple outputs are produced in the same facility.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

The packaging material contains biogenic carbon content which is presented below.

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	0.0236	kg C

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

For the preparation of building life cycle assessments, it must be taken into account that in module A5 (installation in the building) the biogenic amount of CO₂ (0.0236 kg C * 3.67 = 0.0866 kg CO₂-eq.) of the packaging bound in module A1-A3 is mathematically booked out.

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	0.00541	l/100km
Transport distance	858	km
Capacity utilisation (including empty runs)	61	%
Gross density of products transported	1400	kg/m ³
Payload capacity	22	t

No allocations were made during the creation phase of the LCA model.

3.10 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.

Installation into the building (A5)

Name	Value	Unit
Material loss (membrane)	2	%
Overlaps (membrane)	6	%
Electricity consumption	0.055	kWh/m ²
Metal screw	0.0875	kg/m ²

End of life (C1-C4)

Name	Value	Unit
Transport to waste treatment plant	100	km
Incineration (Scenario 1)	100	%
Landfill (Scenario 2)	100	%

Reuse, recovery and/or recycling potentials (D), relevant scenario information

The benefits from the incineration of waste produced during installation and during the waste treatment in scenario 1 are credited in Module D as avoided generation of electricity and thermal energy, since in modern incineration plants the energy of combustion is used to produce power and thermal energy. The modules D1/D2 are connected with the corresponding end-of-life scenarios.

5. LCA: Results

The results displayed below (EF 3.1) apply to Sikaplan® SGK-15. To calculate results for other thicknesses for module A1-A3, please use this formulas:

- Sikaplan® SGK-12: $lx = ((x-0.0748)/1.43) \cdot 11.5$
- Sikaplan® SGK-18: $lx = ((x+0.192)/1.69) \cdot 11.5$

[lx = the unknown parameter value for Sikaplan® SGK products with a thickness of "x" mm (1.2 or 1.8 mm)]

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	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m2 of Sikaplan® SGK

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
GWP-total	kg CO ₂ eq	5.69E+00	1.72E-01	1.02E+00	1.07E-03	2.06E-02	4.46E+00	0	0	1.75E-01	-1.29E+00	-7.18E-02
GWP-fossil	kg CO ₂ eq	5.82E+00	1.69E-01	9.28E-01	1.05E-03	2.02E-02	4.35E+00	0	0	6.54E-02	-1.29E+00	-7.15E-02
GWP-biogenic	kg CO ₂ eq	-1.36E-01	4.03E-04	9.18E-02	3.57E-06	4.84E-05	1.11E-01	0	0	1.09E-01	-5.6E-03	-3.13E-04
GWP-luluc	kg CO ₂ eq	3.72E-03	2.84E-03	8.3E-04	1.75E-05	3.4E-04	9.69E-04	0	0	2.41E-04	-1.17E-04	-6.53E-06
ODP	kg CFC11 eq	3.52E-11	2.49E-14	5.16E-12	1.53E-16	2.98E-15	3.35E-12	0	0	2.16E-13	-1.16E-11	-6.47E-13
AP	mol H ⁺ eq	3.02E-02	6.97E-04	4.67E-03	5.27E-06	8.37E-05	9.77E-04	0	0	3.92E-04	-1.36E-03	-7.56E-05
EP-freshwater	kg P eq	2.41E-05	7.2E-07	2.56E-06	4.45E-09	8.65E-08	8.96E-07	0	0	3.75E-05	-2.16E-06	-1.21E-07
EP-marine	kg N eq	3.49E-03	3.26E-04	5.34E-04	2.54E-06	3.92E-05	3.19E-04	0	0	8.43E-05	-4.13E-04	-2.3E-05
EP-terrestrial	mol N eq	3.8E-02	3.65E-03	5.9E-03	2.81E-05	4.38E-04	4.22E-03	0	0	9.26E-04	-4.43E-03	-2.47E-04
POCP	kg NMVOC eq	1.75E-02	6.55E-04	2.18E-03	7.17E-06	7.87E-05	9.19E-04	0	0	2.7E-04	-1.17E-03	-6.51E-05
ADPE	kg Sb eq	3.05E-02	1.47E-08	2.45E-03	9.08E-11	1.76E-09	3.5E-08	0	0	4.35E-09	-1.12E-07	-6.28E-09
ADPF	MJ	1.34E+02	2.22E+00	1.53E+01	1.37E-02	2.67E-01	6.82E+00	0	0	1.11E+00	-2.3E+01	-1.28E+00
WDP	m ³ world eq deprived	8.75E-01	2.61E-03	1.5E-01	1.61E-05	3.14E-04	4.32E-01	0	0	8.45E-03	-1.42E-01	-7.92E-03

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 m2 of Sikaplan® SGK

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
PERE	MJ	2.16E+01	1.91E-01	4.09E+00	1.18E-03	2.3E-02	1.75E+00	0	0	1.67E-01	-7.74E+00	-4.33E-01
PERM	MJ	1.04E+00	0	-1.04E+00	0	0	0	0	0	0	0	0
PERT	MJ	2.26E+01	1.91E-01	3.05E+00	1.18E-03	2.3E-02	1.75E+00	0	0	1.67E-01	-7.74E+00	-4.33E-01
PENRE	MJ	8.52E+01	2.22E+00	1.26E+01	1.37E-02	2.67E-01	5.82E+01	0	0	1.11E+00	-2.3E+01	-1.28E+00
PENRM	MJ	4.86E+01	0	2.74E+00	0	0	-5.13E+01	0	0	0	0	0
PENRT	MJ	1.34E+02	2.22E+00	1.53E+01	1.37E-02	2.67E-01	6.82E+00	0	0	1.11E+00	-2.3E+01	-1.28E+00
SM	kg	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0
FW	m ³	3.18E-02	2.13E-04	4.78E-03	1.32E-06	2.56E-05	1.09E-02	0	0	2.53E-04	-5.95E-03	-3.32E-04

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 m2 of Sikaplan® SGK

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
HWD	kg	1.18E-06	8.51E-11	9.69E-08	5.26E-13	1.02E-11	3.82E-09	0	0	2.73E-10	-1.57E-08	-8.76E-10
NHWD	kg	1.14E+00	3.63E-04	1.44E-01	2.24E-06	4.36E-05	1.86E+00	0	0	2.22E+00	-1.2E-02	-6.7E-04

RWD	kg	2.28E-03	4.05E-06	3.57E-04	2.5E-08	4.86E-07	1.77E-04	0	0	1.56E-05	-1.71E-03	-9.57E-05
CRU	kg	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	3.43E-01	0	0	5.79E+00	0	0	0	0	0
EET	MJ	0	0	6.16E-01	0	0	1.05E+01	0	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 m2 of Sikaplan® SGK

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
PM	Disease incidence	1.79E-06	4.51E-09	1.8E-07	6.35E-11	5.41E-10	2.2E-08	0	0	4.05E-09	-1.11E-08	-6.2E-10
IR	kBq U235 eq	3.44E-01	5.87E-04	5.06E-02	3.63E-06	7.05E-05	2.15E-02	0	0	2.14E-03	-2.82E-01	-1.58E-02
ETP-fw	CTUe	6.26E+01	1.65E+00	6.43E+00	1.02E-02	1.98E-01	5.14E+00	0	0	2.39E+00	-3.27E+00	-1.83E-01
HTP-c	CTUh	1.97E-09	3.33E-11	1.36E-07	2.06E-13	4E-12	1.69E-10	0	0	3.55E-11	-2.64E-10	-1.47E-11
HTP-nc	CTUh	8.44E-08	1.5E-09	9.69E-09	9.25E-12	1.8E-10	1.34E-08	0	0	7.44E-10	-6.18E-09	-3.43E-10
SQP	SQP	4.6E+01	1.09E+00	4.7E+00	6.75E-03	1.31E-01	1.66E+00	0	0	1.88E-01	-4.53E+00	-2.53E-01

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.

6. LCA: Interpretation

This chapter contains an interpretation of the Life Cycle Impact Assessment categories. Stated percentages in the whole interpretation are related to the overall life cycle, excluding credits (module D).

Examining the results for Sikaplan® SGK, it can be concluded that the most significant contributor to the impact categories is the production stage (Modules A1-A3) with contributions ranging between 49% and 92%. Another relevant module is End-of-Life (C). The analysis is divided into two scenarios (C3/1 and C4/2). In scenario C3/1, the EoL has a substantial negative impact on both Global Warming Potential (GWP) and Water Depletion (WDP). In scenario C4/2, the EoL significantly impacts the EP - freshwater category, being the module with the highest contribution.

Examining the results for modules A1-A3 in further detail, the

raw materials involved in the production of Sikaplan® SGK represent greater than 85% across each of the different impact categories. Overall, two raw materials, PVC and Di-isononylphthalate, consistently appear among those with the highest impacts. This is likely since they constitute the two main raw materials by weight in the product.

The only exception is ODP where the 34% of the impacts arise from the electricity consumption. However, considering module A1-A3 again, the raw material antimony trioxide acts as a hotspot for two impact categories, AP and ADPe. Finally, the impact of the raw materials transport is, overall, practically negligible.

7. Requisite evidence

8. References

Agrément Certificate 09/4668
BBA (British Board of Agrément) Agrément Certificate 09/4668 for Sika waterproofing membrane.

Candidate list
Candidate list of substances of very high concern to the European Chemicals Agency, as of July 2021

CLP Regulation
Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, as of February 03-2021

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