ENVIRONMENTAL PRODUCT DECLARATION

Specific EPD

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

SOPRAROCK PF/GF 3500 SBS FINE SLATE

Programme:	Programme operator:	EPD registration number:	Publication date:	Valid until:	Geographical scope:
The International EPD® System, www.environdec.com	**EPD International AB**	S-P-08670	2023-03-15	2028-03-10	Europe

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.

Published by EPD Denmark Through MRA
Registration number MD-23106-EN

GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	SOPREMA NV
Address	Bouwelven 5, 2280 Grobbendonk, Belgium
Contact details	info@soprema.be
Website	www.soprema.com

PRODUCT IDENTIFICATION

Product name	Soprarock PF-GF 3500 SBS Fine slate
Additional label(s)	-
Product number / reference	18912, 18913, 153871
Place(s) of production	Schoten, Belgium
CPC code	Construction product

The International EPD System

EPDs within the same product category but from different programmes may not be comparable.

EPD INFORMATION

The EPD owner has the sole ownership, liability, and responsibility for the EPD. Construction products EPDs may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPD program operator	The International EPD System
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. In addition, the Int'l EPD System PCR 2019:14 Construction products, version 1.11 (05.02.2021) is used.
EPD author	Silvia Vilčeková, Salvis, s.r.o.
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
Verification date	2023-03-10
EPD verifier	Sergio A. Ballén Zamora
EPD number	S-P-08670
ECO Platform nr.	-
Publishing date	2023-03-15
EPD valid until	2028-03-10

PRODUCT INFORMATION

PRODUCT DESCRIPTION

Membrane composed of elastomer modified bitumen and a composite polyester reinforcement. The upper surface is finished with fine slates with an overlap marking on both sides. The lower surface is protected by a thermofusible film.

PRODUCT APPLICATION

Used as a base layer within a multi-layer waterproofing system. Fully applied by torch-on or hot-air method including the overlaps. Mechanically fastened in the overlap, overlaps torched.

TECHNICAL SPECIFICATIONS

The 70 years reference service life (RSL) value is only applicable if the Soprarock PF-GF 3500 SBS will be covered with a suitable Soprema Top layer of min. 35 years RSL and is replaced or overlaid after 35 years to extend the total RSL to 70 years.

Further information can be found at *https://www.soprema.dk/*

PRODUCT STANDARDS

Product met requirements of EN 1849-1, EN 12311-1, EN 1107-1, EN 12310-1, EN 1109, EN 1110 and EN 13501-1.

PHYSICAL PROPERTIES OF THE PRODUCT

Composition	Standard	Unit	Value	Tolerance
Thickness	EN 1849-1	mm	3.0	
Mass (indicative)	EN 1849-1	kg/m^2	3.8	
Tensile force (L/T)	EN 12311-1	N/50 mm	850/650	± 20 %
Elongation at max. tensile force	EN 12311-1	%	35/35	± 15
Dimensional stability	EN 1107-1	%	≤ 0.3	
Resistance to tearing (nail shank) (L/T)	EN 12310-1	N	270/270	± 25 %
Flexibility at low temperature	EN 1109	°C	≤ -20	
Flow resistance at elevated	EN 1110	°C	≥ 110	
Reaction to fire	EN 13501-1	Class	NPD	

NPD = no performance determined

Detailed technical information can be found from manufacturers webpages at https://www.soprema.dk/

ADDITIONAL TECHNICAL INFORMATION

Further information can be found at www.soprema.com.

PRODUCT RAW MATERIAL COMPOSITION

Product and packaging material	Weight kg	Post-consumer %	Renewable %	Country region of origin
Bitumen	2.4102	0	0	NL, DE
Calcium carbonate	0.3691	0	0	BE
Slates	0.3284	0	0	CZ
SBS	0.2771	0	0	SE, CH, US, TW, KR, RU,
Polyester mesh	0.1945	0	0	BE
Oil	0.0883	100	0	FR, NL
LDPE	0.0090	0	0	DE, BE
Cardboard	0.0382	0	0	BE
Tape	0.0011	0	0	BE
Paper	0.0006	0	0	BE
Wooden pallets	0.0965	0	100	BE

Mass of the raw materials and packaging include an extra 10% weight for the overlaps.

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The main raw materials for the production of the waterproofing system are bitumen (65.6%), SBS (7.5%), reinforcement (5.3%), minerals as fillers or finishing (19%) and other materials (2.6%). The finished packaged product is stored and transported on wooden pallets.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The transportation distance is defined according to PCR. Average distance of transportation from production plant to building site is assumed as 1110 km and the transportation method is assumed to be lorry. Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as product are packaged properly.

Energy consumption during installation represents 0.6125 kWh.
Wooden pallets used for transportation of products to client is accounted for in A5. It is assumed that the pallets are incinerated at the nearest municipal incineration plant for energy recovery. The distance is assumed as 89 km and the transportation method assumed to be lorry.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

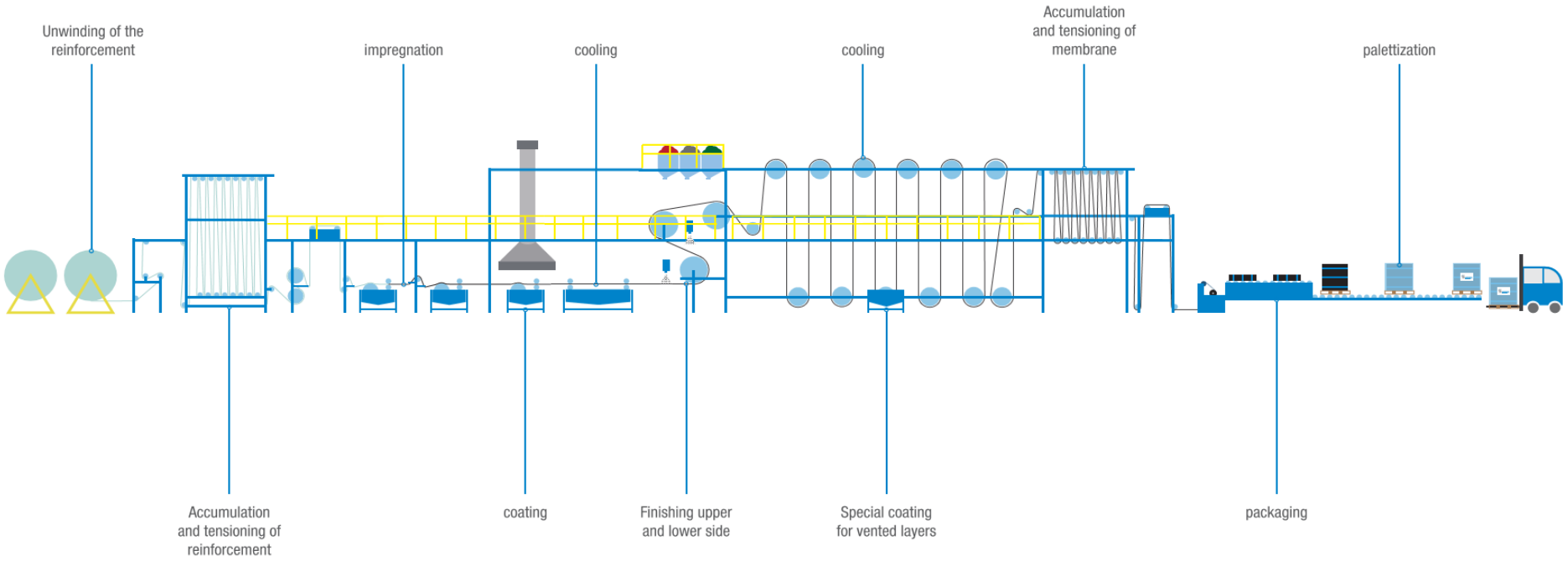
The impacts of the disassembly stage are assumed zero, since the consumption of energy and natural resources for disassembling the end-of-life product is negligible.

Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is assumed as lorry which is the most common.

15% of the material is assumed to be recycled and 45% used for energy recovery. 40% of waste is taken to landfill for final disposal.

Module D considers the benefits of recycling and energy recovery which replaces district heat and electricity.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

Period for data	2021

DECLARED AND FUNCTIONAL UNIT

Declared unit	1 m2
Mass per declared unit	3.6765 kg
Functional unit	-
Reference service life	70

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.0437

SYSTEM BOUNDARY

This EPD covers the cradle to gate with options scope with the following modules; A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), A4 (Transport), A5 (Assembly) as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and loads beyond the system boundary is included.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x	x	x
Geography, by two-letter ISO country code or regions. The International EPD System only.																		
EU	EU	EU	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 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.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation.

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.

3. Allocation should be based on economic values.

Allocation is based on annual production rate and made with high accuracy and precision. The values for 1 m2 of the product which is used within this study are calculated by considering the total product weight per annual production. The product output is fixed to 1 m2 and the corresponding amount of product is used in the calculations.

In the production plant, several kinds of products are produced; since the production processes of these products are similar, the annual production percentages are taken into consideration for allocation. According to the ratio of the annual production of the declared product to the total annual production at the factory, the annual total energy consumption, packaging materials and the generated waste per the declared product are allocated. Subsequently, the produced product output fixed to 1 m2 and the corresponding amount of product is used in the calculations.

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs. All estimations and assumptions are given below.

Module A1: Within the product stage accurate data has been used, with the exception of acrylic tape due to its absence in the database. In this case, it was modelled as close to reality as possible using proxy, representative datapoint.

Module A3: In the plant, lots of different products are produced. Therefore, electricity and natural gas are allocated on yearly consumption.

Module A2, A4 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality it may vary but as the role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by transportation companies to serve the needs of other clients.

Module A4: Transportation doesn't cause losses as products are packaged properly. Also, volume capacity utilisation factor is assumed to be 1 for the nested packaged products. Additionally, transportation distances and vehicle types are assumed according to the delivery in the last year.

Module A5: Energy consumption and used ancillary materials during installation are negligible, and can be assumed as zero. It is assumed that wood pallets are incinerated at the nearest municipal incineration plant for energy recovery. The distance is assumed as 50 km and the transportation method assumed to be lorry.

Module C1: The impacts of the disassembly stage are assumed zero, since the consumption of energy and natural resources for disassembling the end-of-life product is negligible.

Module C2: Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is assumed as lorry which is the most common.

Module C3, C4, D: According to the manufacturer's information, 15% of the material is assumed to be recycled and 45% used for energy recovery. 40% of waste is taken to landfill for final disposal. Module D considers the benefits of recycling and energy recovery which replaces district heat and electricity.

Allocation used in Ecoinvent 3.6 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 -standard.

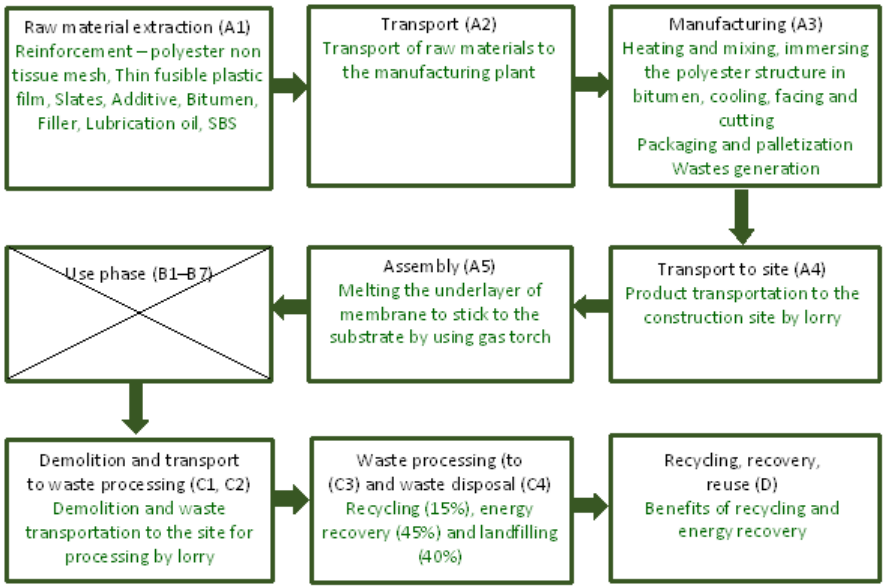
AVERAGES AND VARIABILITY

Any average and variation are not considered since this EPD refers to one specific product produced in one production plant.

The International EPD System additional data requirements

Data specificity and GWP-GHG variability for GWP-GHG for A1-A3.

Supply-chain specific data for GWP-GHG	>90%
Variation in GWP-GHG between products	Not relevant
Variation in GWP-GHG between sites	Not relevant



Process diagram

ENVIRONMENTAL IMPACT DATA

Note: additional environmental impact data may be presented in annexes.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO_2e	2,57E0	1,74E-1	3,39E-1	3,08E0	3,65E-1	3,58E-1	MND	MND	MND	MND	MND	MND	MND	0E0	1,6E-2	4E0	2,21E-1	7,63E-1
GWP – fossil	kg CO_2e	2,32E0	1,74E-1	5,13E-1	3,01E0	3,69E-1	1,97E-1	MND	MND	MND	MND	MND	MND	MND	0E0	1,6E-2	4E0	2,21E-1	6,19E-1
GWP – biogenic	kg CO_2e	1,27E-2	1,29E-4	-1,74E-1	-1,61E-1	2,79E-4	1,62E-1	MND	MND	MND	MND	MND	MND	MND	0E0	1,21E-5	2,63E-4	1,74E-4	1,43E-1
GWP – LULUC	kg CO_2e	2,34E-1	5,58E-5	3,44E-4	2,34E-1	1,16E-4	2,1E-5	MND	MND	MND	MND	MND	MND	MND	0E0	5,03E-6	5,04E-5	9,58E-6	3,32E-4
Ozone depletion pot.	kg CFC_{-11}e	1,64E-7	4,26E-8	5,91E-8	2,66E-7	9,05E-8	3,89E-8	MND	MND	MND	MND	MND	MND	MND	0E0	3,93E-9	2E-8	4,84E-9	5,22E-7
Acidification potential	mol H^+e	1,22E-2	6,5E-4	8,22E-4	1,37E-2	1,19E-3	5,94E-4	MND	MND	MND	MND	MND	MND	MND	0E0	5,15E-5	1,49E-3	2,39E-4	5,15E-3
EP-freshwater[2)]	kg Pe	1,93E-4	1,46E-6	5,18E-6	2E-4	3,13E-6	1,05E-6	MND	MND	MND	MND	MND	MND	MND	0E0	1,36E-7	1,93E-6	3,19E-7	1,93E-5
EP-marine	kg Ne	1,57E-2	1,45E-4	2,28E-4	1,61E-2	2,61E-4	1,49E-4	MND	MND	MND	MND	MND	MND	MND	0E0	1,13E-5	4,28E-4	1,92E-4	6,72E-4
EP-terrestrial	mol Ne	1,74E-2	1,62E-3	2,45E-3	2,15E-2	2,9E-3	1,64E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1,26E-4	3,95E-3	5,13E-4	7,74E-3
POCP (“smog”)	kg NMVOCe	1,14E-2	5,99E-4	7,92E-4	1,28E-2	1,14E-3	5,67E-4	MND	MND	MND	MND	MND	MND	MND	0E0	4,94E-5	1,03E-3	2,01E-4	6,95E-2
ADP-minerals & metals	kg Sbe	1,26E-5	3,06E-6	1,05E-6	1,67E-5	6,56E-6	4,12E-7	MND	MND	MND	MND	MND	MND	MND	0E0	2,85E-7	2,24E-6	1,69E-7	6,64E-6
ADP-fossil resources	MJ	1,47E2	2,81E0	9,02E0	1,58E2	5,99E0	2,57E0	MND	MND	MND	MND	MND	MND	MND	0E0	2,6E-1	1,04E0	3,75E-1	3,88E1
Water use[1)]	m^3e depr.	1,83E1	1,04E-2	2,11E-1	1,86E1	2,23E-2	6,4E-3	MND	MND	MND	MND	MND	MND	MND	0E0	9,67E-4	7,72E-2	1,65E-2	2,1E-1

1) GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	3,33E1	1,51E-8	1,02E-8	3,33E1	3,23E-8	6,74E-9	MND	MND	MND	MND	MND	MND	MND	0E0	1,4E-9	9,77E-9	2,67E-9	3,13E-8
Ionizing radiation[3)]	kBq U235e	1,28E-1	1,23E-2	9,39E-2	2,34E-1	2,62E-2	1,07E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,14E-3	3,07E-3	1,46E-3	1,48E-1
Ecotoxicity (freshwater)	CTUe	1,61E1	2,14E0	3,13E0	2,14E1	4,57E0	1,63E0	MND	MND	MND	MND	MND	MND	MND	0E0	1,99E-1	1,74E0	5,29E-1	2,27E1
Human toxicity, cancer	CTUh	9,54E-9	5,51E-11	1,29E-10	9,72E-9	1,15E-10	6,31E-11	MND	MND	MND	MND	MND	MND	MND	0E0	5E-12	1,15E-10	1,07E-11	6,42E-10
Human tox. non-cancer	CTUh	7,52E-1	2,44E-9	1,58E-9	7,52E-1	5,22E-9	1,96E-9	MND	MND	MND	MND	MND	MND	MND	0E0	2,27E-10	4,08E-9	2,18E-10	1,29E-8
SQP	-	4,27E-1	4,19E0	2,41E-1	4,86E0	9,03E0	9,96E-2	MND	MND	MND	MND	MND	MND	MND	0E0	3,92E-1	1,11E0	1,3E0	6,72E-1

4) SQP = Land use related impacts/soil quality. 5) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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 nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy	MJ	1,19E0	3,52E-2	5,14E-1	1,74E0	7,53E-2	1,96E-2	MND	MND	MND	MND	MND	MND	MND	0E0	3,27E-3	4,25E-2	7,2E-3	4,03E-1
Renew. PER as material	MJ	3,93E-3	0E0	2,34E0	2,34E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	1,2E0	3,52E-2	2,85E0	4,08E0	7,53E-2	1,96E-2	MND	MND	MND	MND	MND	MND	MND	0E0	3,27E-3	4,25E-2	7,2E-3	4,03E-1
Non-re. PER as energy	MJ	3,34E1	2,81E0	8,89E0	4,51E1	5,99E0	2,57E0	MND	MND	MND	MND	MND	MND	MND	0E0	2,6E-1	1,04E0	3,75E-1	2,02E1
Non-re. PER as material	MJ	1,13E2	0E0	1,3E-1	1,13E2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	1,86E1
Total use of non-re. PER	MJ	1,46E2	2,81E0	9,02E0	1,58E2	5,99E0	2,57E0	MND	MND	MND	MND	MND	MND	MND	0E0	2,6E-1	1,04E0	3,75E-1	3,88E1
Secondary materials	kg	1,54E-1	0E0	2,04E-2	1,74E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	2,98E-3
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m3	8,55E-3	5,81E-4	3,92E-3	0.013	1,25E-3	2,63E-4	MND	MND	MND	MND	MND	MND	MND	0E0	5,41E-5	2,72E-3	4,15E-4	4,51E-3

6) PER = Primary energy resources

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,31E-1	2,74E-3	6,48E-3	1,4E-1	5,82E-3	3,32E-3	MND	MND	MND	MND	MND	MND	MND	0E0	2,53E-4	0E0	7,19E-4	4,91E-2
Non-hazardous waste	kg	4,5E-1	2,99E-1	1,74E-1	9,23E-1	6,43E-1	4,49E-2	MND	MND	MND	MND	MND	MND	MND	0E0	2,79E-2	0E0	1,47E0	8,41E-1
Radioactive waste	kg	1,25E-3	1,93E-5	4,01E-5	1,31E-3	4,11E-5	1,72E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,79E-6	0E0	2,21E-6	2,32E-4

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	5,51E-1	0E0	0E0
Materials for energy rec	kg	0E0	0E0	2,68E-2	2,68E-2	0E0	9,83E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	1,65E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG	kg CO_2e	2,32E0	1,74E-1	5,13E-1	3,01E0	3,69E-1	1,97E-1	MND	MND	MND	MND	MND	MND	MND	0E0	1,6E-2	4E0	2,21E-1	6,19E-1

8) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013) This indicator Is almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity, Belgium, residual mix
Electricity CO_2e / kWh	0.34
District heating data source and quality	Heat production, natural gas, at industrial furnace >100kw
District heating CO_2e / kWh	0.0687

Transport scenario documentation (A4)

Scenario parameter	Value
Specific transport CO_2e emissions, kg CO_2e / tkm	0.0863
Average transport distance, km	1110
Capacity utilization (including empty return) %	100
Bulk density of transported products	-
Volume capacity utilization factor	1

End of life scenario documentation

Scenario parameter	Value
Collection process – kg collected separately	3.6765
Collection process – kg collected with mixed waste	-
Recovery process – kg for re-use	-
Recovery process – kg for recycling	0.5515
Recovery process – kg for energy recovery	1.6544
Disposal (total) – kg for final deposition	1.4706
Scenario assumptions e.g. transportation	End-of-life product is transported 50 km with an average lorry.

BIBLIOGRAPHY

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

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Eriksson, O. & Finnveden, G. Energy Recovery from Waste Incineration - The Importance of Technology Data and System Boundaries on CO2 Emissions. Energies, 2017

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Soprarock PF-GF 3500 SBS Fine slate LCA background report 28.11.2022

ABOUT THE MANUFACTURER

The SOPREMA Group has been developing and diversifying its activities, worldwide, by including, over the years, additional operations to its traditional trade, waterproofing. By becoming the world leader in waterproofing solutions, the group is today a key player in the construction sector.

SOPREMA was created in 1908 as an independent family group by Charles Geisen whose great-grandson, Pierre-Etienne Bindschedler, is now at the head of the company. Today we are rolling out millions of square metres of waterproofing, insulating and roofing material. As a result, SOPREMA claims a world-leading position in the design and manufacture of waterproofing solutions as well as roofing materials, sound and thermal insulation.

Today, SOPREMA operates all around the world with 101 manufacturing plants, more than 100 subsidiaries and more than 4,000 distributors.

EPD AUTHOR AND CONTRIBUTORS

Manufacturer	SOPREMA
EPD author	Silvia Vilčeková, Salvis, s.r.o.
EPD verifier	Sergio A. Ballén Zamora
EPD program operator	The International EPD System
Background data	This EPD is based on Ecoinvent 3.6 (cut-off) and One Click LCA databases.
LCA software	The LCA and EPD have been created using One Click LCA Pre-Verified EPD Generator for Bitumen membranes

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with EN 15804, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The background report (project report) for this EPD

Why does verification transparency matter? Read more online.

VERIFICATION OVERVIEW

Following independent third party has verified this specific EPD:

EPD verification information	Answer
Independent EPD verifier	Sergio A. Ballén Zamora
EPD verification started on	2023-02-06
EPD verification completed on	2023-03-10
Supply-chain specific data %	>90%
Approver of the EPD verifier	The International EPD System

Author & tool verification	Answer
EPD author	Silvia Vilčeková
EPD Generator module	Bitumen membranes
Independent software verifier	Ugo Pretato, Studio Fieschi & soci
Software verification date	2021-05-11

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of

- the data collected and used in the LCA calculations,
- the way the LCA-based calculations have been carried out,
- the presentation of environmental data in the EPD, and
- other additional environmental information, as present

with respect to the procedural and methodological requirements in ISO 14025:2010 and EN 15804:2012+A2:2019.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

VERIFICATION AND REGISTRATION (ENVIRONDEC)

ISO standard ISO 21930 and CEN standard EN 15804 serves as the core Product Category Rules (PCR)	
PCR	PCR 2019:14 Construction products, version 1.11
PCR review was conducted by:	The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.
Independent third-party verification of the declaration and data, according to ISO 14025:2006:	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
Third party verifier	Sergio A. Ballén Zamora
	Approved by: The International EPD® System Technical Committee, supported by the Secretariat
Procedure for follow-up during EPD validity involves third party verifier	☐ yes ☑ no

THE INTERNATIONAL EPD® SYSTEM

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ANNEX 1: ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1,84E0	1,72E-1	5,02E-1	2,51E0	3,65E-1	1,95E-1	MND	MND	MND	MND	MND	MND	MND	0E0	1,59E-2	3,97E0	1,56E-1	5,87E-1
Ozone depletion Pot.	kg $CFC_{-11}e$	9,9E-8	3,38E-8	4,53E-8	1,78E-7	7,19E-8	3,08E-8	MND	MND	MND	MND	MND	MND	MND	0E0	3,12E-9	2,53E-8	3,86E-9	4,26E-7
Acidification	kg SO_2e	8,08E-3	4,43E-4	6,12E-4	9,14E-3	7,83E-4	4,65E-4	MND	MND	MND	MND	MND	MND	MND	0E0	3,4E-5	4,16E-3	8,17E-3	4,38E-3
Eutrophication	kg PO_4^3e	2,54E-3	8,22E-5	2,06E-4	2,83E-3	1,58E-4	9,43E-5	MND	MND	MND	MND	MND	MND	MND	0E0	6,87E-6	3,61E-3	8,57E-3	9,15E-4
POCP (“smog”)	kg C_2H_4e	4,51E-4	2,3E-5	4,52E-5	5,19E-4	4,51E-5	5,03E-5	MND	MND	MND	MND	MND	MND	MND	0E0	1,96E-6	4,82E-5	3,61E-5	2,74E-4
ADP-elements	kg Sbe	1,26E-5	3,06E-6	1,05E-6	1,67E-5	6,56E-6	4,12E-7	MND	MND	MND	MND	MND	MND	MND	0E0	2,85E-7	2,24E-6	1,69E-7	6,64E-6
ADP-fossil	MJ	1,47E2	2,81E0	9,02E0	1,58E2	5,99E0	2,57E0	MND	MND	MND	MND	MND	MND	MND	0E0	2,6E-1	1,04E0	3,75E-1	3,88E1

ANNEX 2: LIFE-CYCLE ASSESSMENT RESULT VISUALIZATION

Life-cycle impacts by stage as stacked columns