EPD OWNER:
Soprema Srl

PROGRAMME:
The International EPD® System,
www.environdec.com

PROGRAMME OPERATOR:
EPD International AB

EPD REGISTRATION NUMBER:
EPD-IES-0026668

VERSION DATE:
2026-01-20

VALIDITY DATE:
2031-01-19

EPD of multiple products, based on the average results of the product group listed on page 7.

BITUMINOUS WATERPROOFING MEMBRANES FOR CIVIL ENGINEERING APPLICATIONS

ENVIRONMENTAL PRODUCT DECLARATION

waterproofing

This Environmental Product Declaration has been developed in accordance with ISO 14025:2006, EN 15804:2012+A2:2019/AC:2021 standards

EPD® INTERNATIONAL EPD SYSTEM

ECO PLATFORM EPD VERIFIED

SOPREMA

General Information

PROGRAMME INFORMATION

EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden, E-mail: info@environdec.com.

EPDs within the same product category but published in different EPD programmes may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same version number up to the first two digits) 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 and ISO 14025.

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

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

c-PCR: EN 17388 Flexible sheets for waterproofing - Part 1 and Part 2, October 2024

PCR review was conducted by:

The Technical Committee of the International EPD® System. See www.environdec.com 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.

LIFE CYCLE ASSESSMENT (LCA)

LCA accountability: Life Cycle Engineering SpA

Via Livorno, 60, Environment Park, 10144 Torino (TO) - Italy
www.lcengineering.eu

THIRD-PARTY VERIFICATION

External and independent ('third-party') verification of the declaration and data, according to ISO 14025:2006, via EPD verification through:

Individual EPD verification without a pre-verified LCA/EPD tool

Third-party verifier: CERTIQUALITY S.r.l., Via G. Giardino, 4 - 20123 Milano - Italy. info@certiquality.it. certiquality.it

Approved by: Accredia, 0027vv

Procedure for follow-up of data during EPD validity involves third-party verifier:

☐ YES ☑ NO

Information about EPD owner

THE SOPREMA GROUP

An independent group since its inception in 1908, SOPREMA specializes in the design and implementation of cutting-edge waterproofing systems and thermal and acoustic insulation solutions, in line with the requirements of sustainable construction.

With the collaboration of over 12,000 people worldwide and a turnover of 5,14 billion Euros in 2024, the SOPREMA Group has a global industrial and commercial presence. With over 130 production sites, more than 130 operational branches, and a presence in 90 countries, the company also boasts 24 Research and Development centers and 62 training centers across 15 countries.

The SOPREMA product range, the result of close collaboration between the marketing and Research and Development departments, is innovative and in perfect harmony with market needs and current standards. SOPREMA's success is based on a fundamental principle: focusing on ideas.

SOPREMA's products and services aim to meet the needs of construction professionals, whether it be waterproofing with synthetic or bituminous membranes, thermal and acoustic insulation, liquid products, or civil engineering works – SOPREMA always has the solution.

SOPREMA offers high-performance technological products, constantly optimized through Research and Development in an eco-design logic, boasting exceptional characteristics in terms of robustness, reliability, and longevity.

At SOPREMA, sustainability is an essential driver that propels us towards the creation of a sustainable construction model in two main aspects: developing high-energy efficiency products and adopting an approach oriented towards the life cycle analysis of our products. Our goal is to promote a renewed vision of construction, with more responsible and environmentally friendly practices.

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BITUMINOUS WATERPROOFING MEMBRANES FOR CIVIL ENGINEERING APPLICATIONS

The Soprema Civil Engineering Division offers a comprehensive range of waterproofing solutions tailored to various civil engineering applications, including the Bituminous Waterproofing line.

To address the specific requirements of the sector, Soprema has developed the Civil Engineering range—products specifically designed to deliver technical solutions for a wide array of infrastructure projects, such as:

- Bridges and car parks
- Tunnels and underground structures
- Hydraulic works

The Civil Engineering range encompasses all activities related to major engineering works, subterranean constructions, and water containment systems. This opens up new opportunities to provide a more complete and targeted product offering, aligned with the needs of clients, project managers, and specialized installation companies.

Thanks to its diverse product portfolio, Soprema Civil Engineering delivers waterproofing solutions suitable for nearly all types of built structures.

The membranes are CE-marked products in accordance with EN 13707 for roofing application and in accordance with EN 14695 for civil engineering application. Bituminous membranes are generally applied in full adhesion using a torch.

Products included in the EPD

The EPD corresponds to a virtual average product, calculated based on production volumes. The associated variability is set out in the additional information section.

NOVABOND PONTI 4mm - 5mm

Waterproofing membrane made of Bitumen Polymer Plastomer (BPP), with internal reinforcement in non-woven fabric of continuous filament polyester stabilized with mesh. Upper surface finished with non-stick amorphous sand and lower surface finished with heat-fusible polyolefin film.

APPLICATIONS

- ✚ Flat roofs (in systems under heavy ballast with gravel, mobile or fixed pavements, drivable surfaces, parking areas, etc.), underground structures, single layer under hot-applied asphalt concrete, concrete bridge decks.

NOVAPONTI 3mm - 4mm - 5mm

Waterproofing membrane made of Bitumen Polymer Plastomer (BPP), with internal reinforcement in non-woven fabric of continuous filament polyester stabilized with glass fibers. Upper surface finished with non-stick amorphous sand or heat-fusible polyolefin film and lower surface finished with heat-fusible polyolefin film.

APPLICATIONS

- ✚ Flat roofs (in systems under heavy ballast with gravel, mobile or fixed pavements, drivable surfaces, parking areas, etc.), underground structures, single layer under hot-applied asphalt concrete, concrete bridge decks.

Note: for all the technical information, refer to the technical data sheet of the products.

Content Declaration

The average composition of the products, as a representative range for all the type and thicknesses, is provided in the table below, along with average packaging composition. Based on our knowledge, no substance listed as a candidate for Authorization (Candidate List SVHC) or subject to Authorization (Annex XIV - REACH) is contained in the product at a concentration greater than 0.1% weight/weight.

Declared Unit: 1 m^2 of installed membrane.

PRODUCT CONTENT	MASS (kg)	POST-CONSUMER RECYCLED MATERIAL, MASS-% OF PRODUCT	PRE-CONSUMER RECYCLED MATERIAL, MASS-% OF PRODUCT	BIOGENIC MATERIAL, MASS-% OF PRODUCT	BIOGENIC MATERIAL, kgC/m^2
BITUMEN	2.48	2.5%	-	-	-
MINERALS	1.27	-	-	-	-
POLYMERS & ADDITIVES	0.66	1.8%	1.8%	-	-
REINFORCING MATERIAL	0.20	0.6%	-	-	-
COATING	0.16	-	-	-	-
TOTAL	**4.77**	**4.9%**	**1.8%**	**-**	**-**

PACKAGING MATERIALS	MASS (kg)	MASS - % (VERSUS THE PRODUCT)	BIOGENIC MATERIAL, kgC/m^2
WOODEN PALLET	0.06	88.8%	0.03
PAPER ROLL LABEL	< 0.01	< 0,1%	< 0.01
POLYPROPYLENE TAPE	< 0.01	0.9%	< 0.01
LDPE CAP	0.01	8.4%	< 0.01
PAPER PALLET LABEL	< 0.01	< 0.1%	< 0.01
INK FOR LABELS	< 0.01	< 0.1%	< 0.01
OSB WOOD PANEL	< 0.01	1.5%	< 0.01
POLYPROPYLENE STRAP	< 0.01	0.2%	< 0.01
RFID TAG (PAPER LABEL WITH MICROCHIP)	< 0.01	< 0.1%	< 0.01

LCA Information

SYSTEM BOUNDARIES

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

ND: module not declared IT: Italy GLO: Global

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	ND	ND	ND	X	ND	ND	ND	X	X	X	X	X

GEOGRAPHY

GLO	GLO	IT	GLO	GLO				GLO				GLO	GLO	GLO	GLO	GLO

SPECIFIC DATA USED

56%															

VARIATIONS PRODUCTS

-16%/+9%															

VARIATIONS SITES

0%															

LCA Information

METHODOLOGY

TYPE OF EPD

Cradle-to-gate with options, modules C1-C4, module D and optional modules (A4, A5 and B4).

This scheme is compliant with the standard EN 15804: 2012+A2:2019/AC:2021 as presented in the table above.

UN CPC CODE

5453 - Roofing and water proofing services.

DECLARED UNIT

1 m^2 of installed membrane.
The weight per 1 m^2 of installed membrane is 4.77 kg/m^2 and the conversion factor to 1 kg is 0.210 m^2/kg.

REFERENCE SERVICE LIFE OF THE BUILDING

105 years

THEORETICAL PRODUCT LIFESPAN

The theoretical lifespan of the membranes is expected to be at least 35 years. Membrane service life value is provided by EN17388 c-PCR for flexible sheets for waterproofing and used exclusively for calculations. They may not be representative of the real service lifetimes. Service lifetime is also influenced by type of membrane, thickness, design and use conditions and regular maintenance according to the manufacturer's indications.

LCA SOFTWARE

SimaPro 10.2.0.3

ENVIRONMENTAL IMPACT ASSESSMENT METHOD

EN 15804 reference package based on EF 3.1

MAIN DATABASES FOR GENERIC DATA

Ecoinvent v 3.11, Plastics Europe, Carbon Minds

GEOGRAPHICAL SCOPE FOR WHICH GEOGRAPHICAL LOCATION OF END-OF-LIFE THE PRODUCT'S PERFORMANCE HAS BEEN CALCULATED

Global

REPRESENTATIVE YEAR FOR THE INVENTORY FOR THE MANUFACTURING

2024

ENERGY SOURCES BEHIND THE ELECTRICITY GRID IN MODULE A3

Italian residual mix (GWP-GHG) 0.68 kgCO2 eq/kWh.

CUT OFF

All available primary data were incorporated into the model. Where primary data were not available, suitable secondary data were used to ensure the inclusion of all relevant flows, in accordance with the cut-off criteria defined by EN 15804.

This approach guarantees that at least 99% of total mass and energy inflows per unit process, and 95% per life cycle stage (A1–A3, A4–A5, C1–C4, aggregated modules B1–B5 and B6–B7, and Module D), are covered. No data were excluded to conceal information, and proxy data were applied where necessary to achieve 100% completeness of the life cycle inventory.

ALLOCATION

Allocation occurs anytime a system is producing more than a single output. In this case it is necessary to choose a technique to proper split the environmental burdens among the output flows; PCR 2019:14, version 2.0.1 provides guidelines about how to deal with this issue, that have been implemented in this project as well.

Soprema produces several product types that are not object of the study. Therefore, it is important to establish an allocation method based on physical variables to split input and output flows to the multi-products: allocation by square meters of produced membranes in the reference year has been chosen.

AVERAGING

In the Civil Engineering membrane product family, the products are divided into two commercial families: NOVABOND PONTI e NOVAPONTI. Both share the same technical characteristics:

- They are smooth membranes (including sand, talc, non-woven PP, PE film, PP film).
- They do not contain flame retardants and glass veil reinforcement.

The overall average environmental profile declared in this EPD is calculated as a weighted average based on the production volumes of each commercial family in 2024.

OMITTED LIFE CYCLE STAGES

Modules B1, B2, B3, B5, B6 and B7 are all excluded.

LCA Information

DATA QUALITY ASSESSMENT

The average composition of the products, as a representative range for all the type and thicknesses, is provided in the table below, along with average packaging composition. Based on our knowledge, no substance listed as a candidate for Authorization (Candidate List SVHC) or subject to Authorization (Annex XIV - REACH) is contained in the product at a concentration greater than 0.1% weight/weight.

GEOGRAPHICAL REPRESENTATIVENESS SCORE	TECHNOLOGICAL REPRESENTATIVENESS SCORE	TEMPORAL REPRESENTATIVENESS SCORE
3.5	4.2	4.3

PROCESS	SOURCE TYPE	SOURCE	REFERENCE YEAR	DATA CATEGORY	SHARE OF PRIMARY DATA, OF GWP-GHG RESULTS FOR A1-A3
SBS AVERAGE RECIPE	COLLECTED DATA	VARIOUS EPDS	2023-2024	PRIMARY DATA	32%
UPSTREAM TRANSPORTS	COLLECTED DATA	ECOINVENT V. 3.11	2024	PRIMARY DATA	14%
PROCESS ENERGIES PRODUCTION AND DIRECT EMISSIONS	COLLECTED DATA	EPD OWNER AND ECOINVENT 3.11	2024	PRIMARY DATA	10%
SHARE OF PRIMARY DATA, OF GWP-GHG RESULTS FOR A1-A3					**56%**

MODELLING OF INFRASTRUCTURES

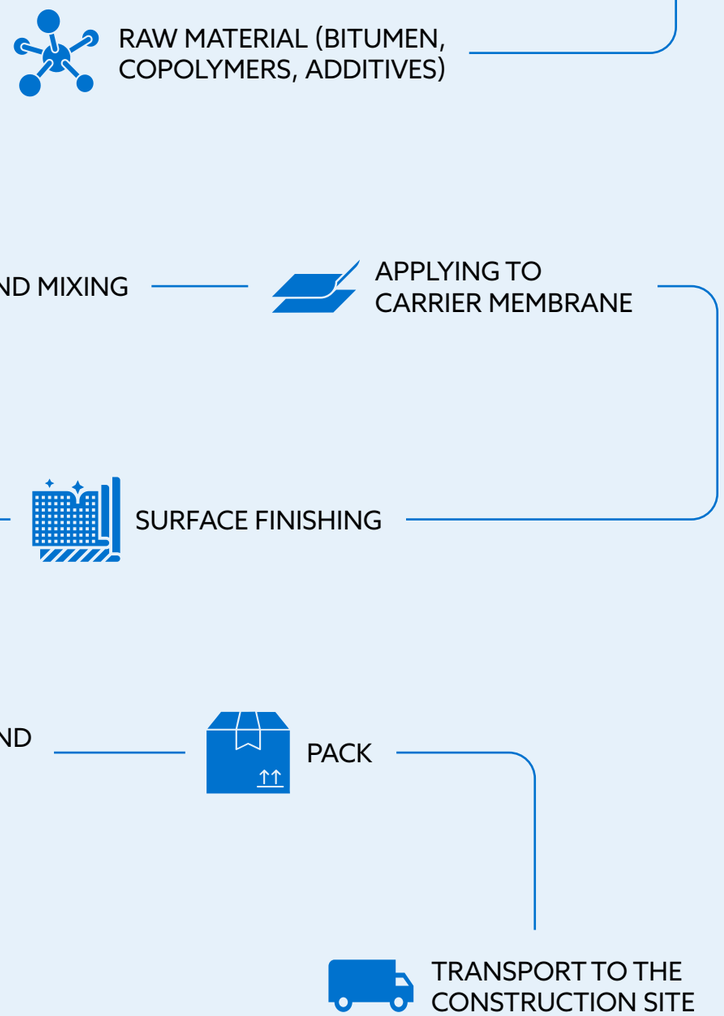
The construction of power plant for electricity and heat datasets used in manufacturing process in module A3 has been included in the LCA model as relevant infrastructures.

LCA Information

PRODUCTION PROCESS

Raw materials (bitumen, copolymers and additives) are heated to a specific temperature and mixed. The bitumen is delivered as hot from the refinery to the manufacturing site, where it's heated further. When the mixture is ready, it's applied to the carrier membrane and faced with plastic film, mineral slates or sand. Then it's cooled down and cut to the desired length. Finally, the product is packed and placed on pallets and transported to the construction site.

SYSTEM BOUNDARIES FLOW DIAGRAM



LCA Information

CALCULATION RULES

A1
UPSTREAM

A2+A3
CORE

A4
TRANSPORT

A5
INSTALLATION

B4
REPLACEMENT

C1+C2+C3+C4
END OF USE

D
RESOURCE RECOVERY

LCA Information

CALCULATION RULES

A1
UPSTREAM

A2+A3
CORE

A4
TRANSPORT

A5
INSTALLATION

B4
REPLACEMENT

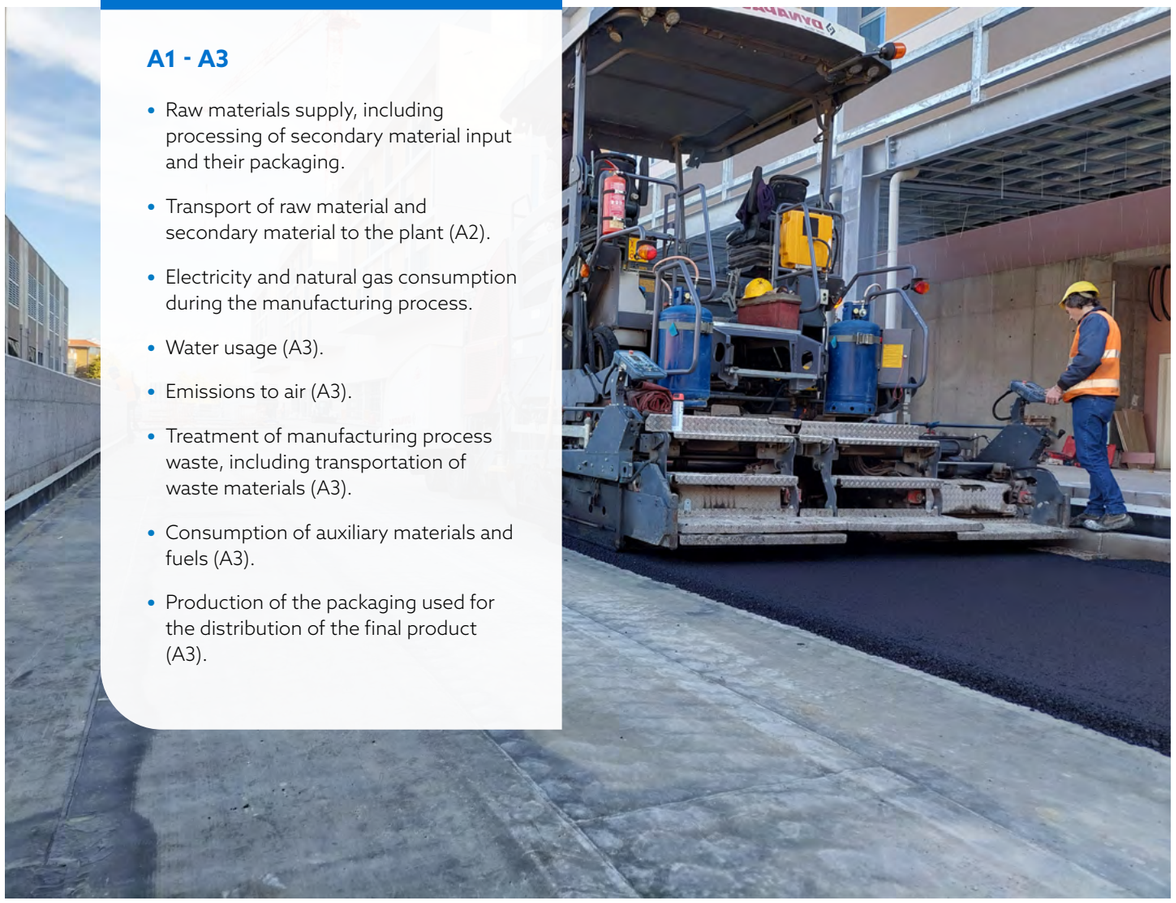
C1+C2+C3+C4
END OF USE

D
RESOURCE RECOVERY

PRODUCT STAGE

A1 - A3

- Raw materials supply, including processing of secondary material input and their packaging.
- Transport of raw material and secondary material to the plant (A2).
- Electricity and natural gas consumption during the manufacturing process.
- Water usage (A3).
- Emissions to air (A3).
- Treatment of manufacturing process waste, including transportation of waste materials (A3).
- Consumption of auxiliary materials and fuels (A3).
- Production of the packaging used for the distribution of the final product (A3).



CONSTRUCTION PROCESS STAGE

A4

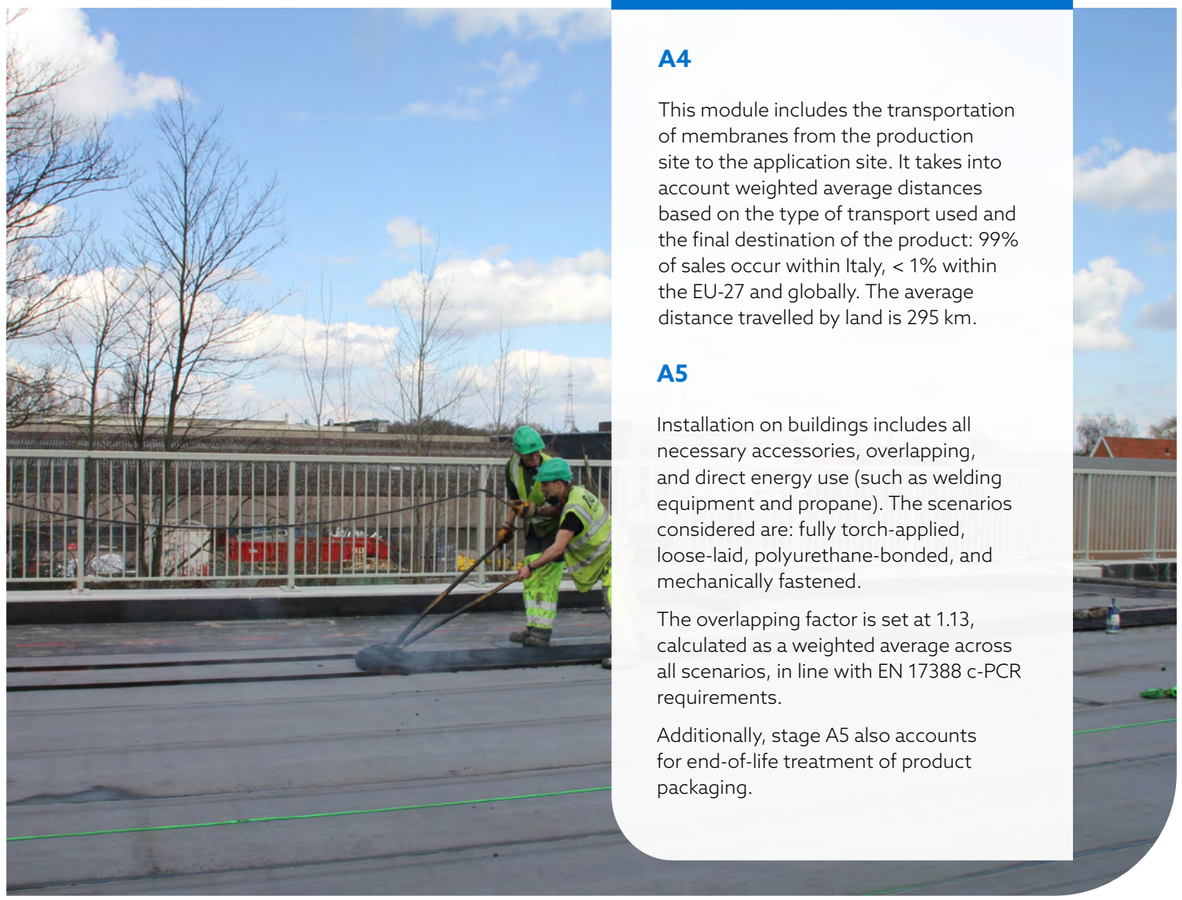
This module includes the transportation of membranes from the production site to the application site. It takes into account weighted average distances based on the type of transport used and the final destination of the product: 99% of sales occur within Italy, < 1% within the EU-27 and globally. The average distance travelled by land is 295 km.

A5

Installation on buildings includes all necessary accessories, overlapping, and direct energy use (such as welding equipment and propane). The scenarios considered are: fully torch-applied, loose-laid, polyurethane-bonded, and mechanically fastened.

The overlapping factor is set at 1.13, calculated as a weighted average across all scenarios, in line with EN 17388 c-PCR requirements.

Additionally, stage A5 also accounts for end-of-life treatment of product packaging.



LCA Information

CALCULATION RULES

A1 UPSTREAM

A2+A3 CORE

A4 TRANSPORT

A5 INSTALLATION

B4 REPLACEMENT

C1+C2+C3+C4 END OF USE

D RESOURCE RECOVERY

USE STAGE

B4

Following European common practice, two replacements are allowed within a 105-year Reference Service Lifetime, meaning one re-roofing every 35 years. To account for these substitutions, the modules from A1 to A5 and from C1 to C4 are repeated twice within stage B4.

END OF LIFE STAGE

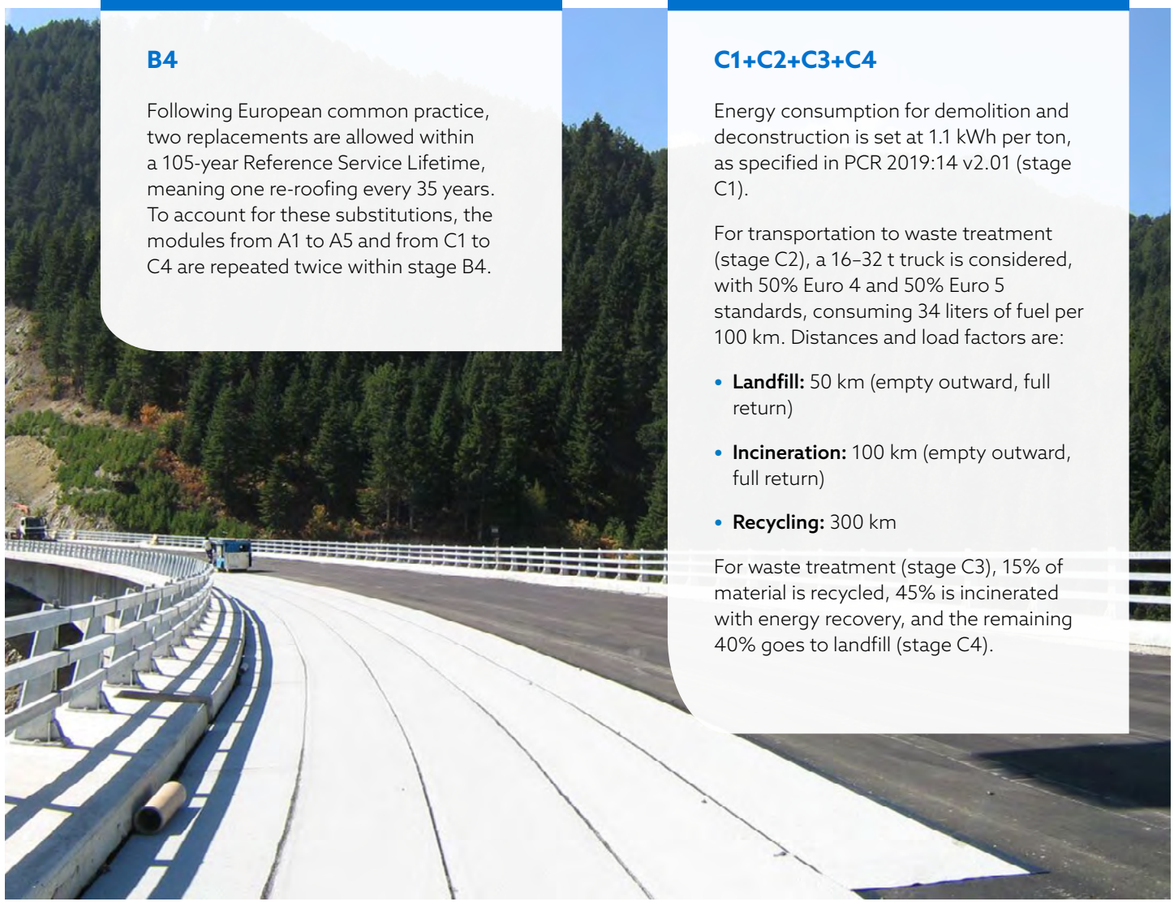
C1+C2+C3+C4

Energy consumption for demolition and deconstruction is set at 1.1 kWh per ton, as specified in PCR 2019:14 v2.01 (stage C1).

For transportation to waste treatment (stage C2), a 16–32 t truck is considered, with 50% Euro 4 and 50% Euro 5 standards, consuming 34 liters of fuel per 100 km. Distances and load factors are:

- **Landfill:** 50 km (empty outward, full return)
- **Incineration:** 100 km (empty outward, full return)
- **Recycling:** 300 km

For waste treatment (stage C3), 15% of material is recycled, 45% is incinerated with energy recovery, and the remaining 40% goes to landfill (stage C4).

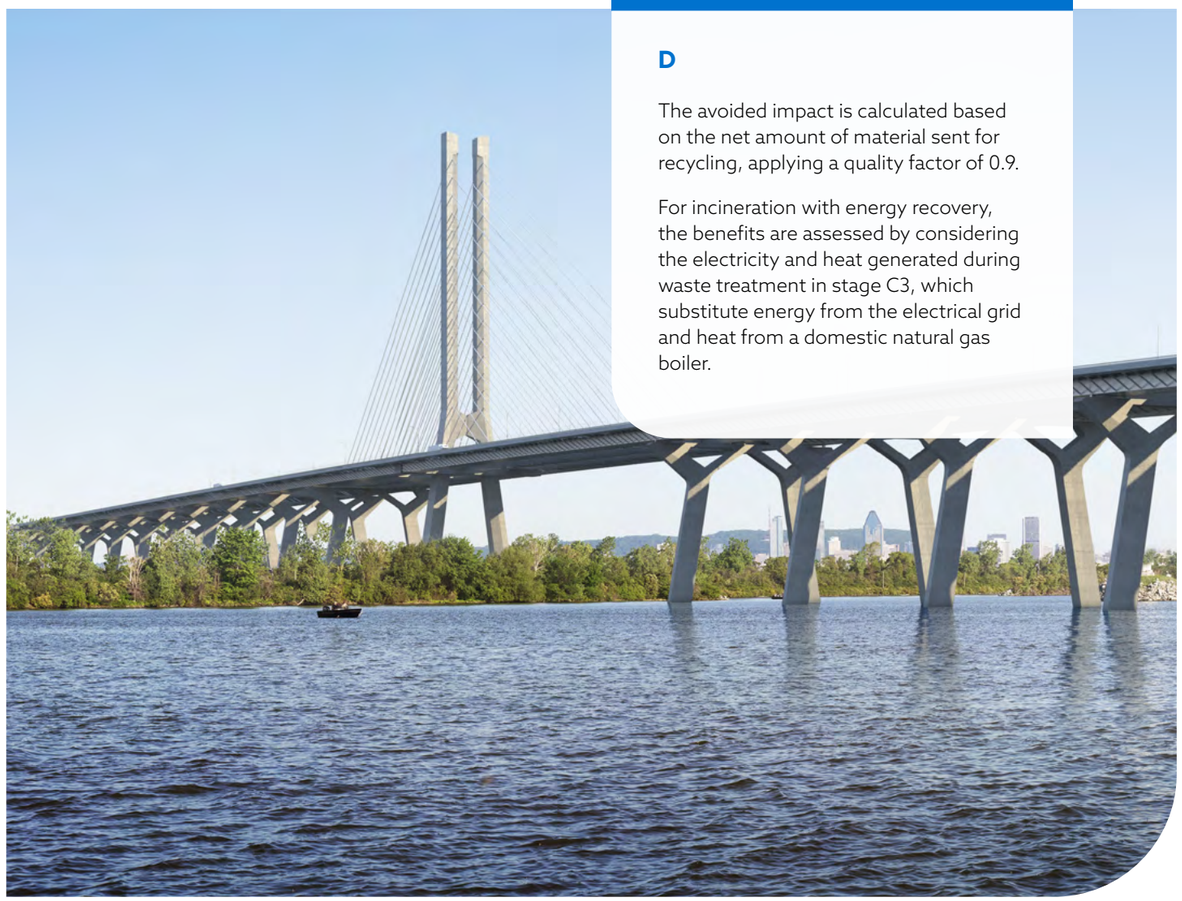


BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES

D

The avoided impact is calculated based on the net amount of material sent for recycling, applying a quality factor of 0.9.

For incineration with energy recovery, the benefits are assessed by considering the electricity and heat generated during waste treatment in stage C3, which substitute energy from the electrical grid and heat from a domestic natural gas boiler.



Environmental performance

ENVIRONMENTAL IMPACTS

Results are declared per 1m² of average product

BITUMINOUS WATERPROOFING MEMBRANES FOR CIVIL ENGINEERING APPLICATIONS		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE	END OF LIFE STAGE				RE-SOURCE RECOVE-RY STAGE
IMPACT CATEGORY	UNIT	A1-A3	A4	A5	B4	C1	C2	C3	C4	D
GWP. t	kg CO_2 eq	4.40E+00	2.16E-01	1.61E+00	2.32E+01	1.76E-03	8.01E-02	5.09E+00	2.23E-01	-1.80E+00
GWP. f	kg CO_2 eq	4.37E+00	2.16E-01	1.60E+00	2.32E+01	1.76E-03	8.01E-02	5.09E+00	2.23E-01	-1.79E+00
GWP. b	kg CO_2 eq	2.07E-02	6.79E-06	6.41E-03	5.45E-02	8.00E-08	2.53E-06	7.16E-05	2.78E-05	-7.31E-04
GWP. luluc	kg CO_2 eq	2.61E-03	3.41E-06	1.84E-03	9.13E-03	7.25E-08	1.27E-06	1.04E-04	9.16E-06	-1.70E-03
GWP. GHG	kg CO_2 eq	4.38E+00	2.16E-01	1.60E+00	2.32E+01	1.76E-03	8.01E-02	5.09E+00	2.23E-01	-1.80E+00
ODP	kg CFC-11 eq	2.48E-06	4.90E-09	3.47E-07	5.67E-06	2.68E-11	1.83E-09	3.52E-09	6.17E-10	1.63E-07
AP	mol H+ eq	1.82E-02	5.57E-04	6.28E-03	5.47E-02	1.63E-05	2.50E-04	1.76E-03	2.67E-04	-1.93E-03
EPf	kg P eq	8.97E-05	1.33E-07	3.61E-05	2.56E-04	1.66E-09	4.97E-08	2.00E-06	1.58E-07	-6.76E-05
EPm	kg N eq	5.67E-03	2.12E-04	1.95E-03	1.71E-02	7.67E-06	1.01E-04	4.62E-04	1.66E-04	-4.50E-04
EPt	mol N eq	5.20E-02	2.32E-03	1.85E-02	1.59E-01	8.41E-05	1.11E-03	4.86E-03	5.92E-04	-4.88E-03
POCP	kg NMVOC eq	2.54E-02	9.23E-04	7.69E-03	7.20E-02	2.51E-05	4.01E-04	1.28E-03	2.66E-04	-2.62E-03
ADPe*	kg Sb eq	4.72E-06	5.63E-09	9.35E-07	1.14E-05	6.17E-11	2.10E-09	5.76E-08	4.59E-09	6.48E-06
ADPf*	MJ	1.77E+02	2.87E+00	3.94E+01	4.43E+02	2.30E-02	1.07E+00	1.08E+00	4.40E-01	-3.97E+01
WDP*	m^3	1.01E+00	9.38E-04	5.50E-01	2.84E+00	1.72E-05	3.50E-04	5.29E-02	-1.90E-01	1.54E-01

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

GWP - total Global Warming Potential Total
GWP - fossil Global Warming Potential Fossil fuels
GWP - biogenic Global Warming Potential Biogenic
GWP - luluc Global Warming Potential Land use and lnd use change
GWP - GHG Global Warming Potential Irreversible
ODP Ozone Depletion Potential
AP Acidification Potential

EP - freshwater Eutrophication Potential Aquatic freshwawter
EP - marine Eutrophication Potential Aquatic marine
EP - terrestrials Eutrophication Potential Terrestrial
POCP Photochemical Ozone Creation Potential
ADP - minerals&metals Abiotic Depletion Potential - Non fossil resources (elements)
ADP - fossil Abiotic Depletion Potential - Fossil resources
WDP Water Deprivation Potential

Environmental performance

RESOURCES USE

Results are declared per 1m² of average product

BITUMINOUS WATERPROOFING MEMBRANES FOR CIVIL ENGINEERING APPLICATIONS		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE	END OF LIFE STAGE				RESOURCE RECOVERY STAGE
IMPACT CATEGORY	UNIT	A1-A3	A4	A5	B4	C1	C2	C3	C4	D
PERE	MJ	9.89E+00	7.05E-03	2.58E+00	2.51E+01	4.94E-05	2.63E-03	4.43E-02	5.31E-03	-4.98E+00
PERM	MJ	8.66E-01	0.00E+00	-5.48E-01	6.35E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.08E+01	7.05E-03	2.03E+00	2.57E+01	4.94E-05	2.63E-03	4.43E-02	5.31E-03	-4.98E+00
PENRE	MJ	4.99E+01	2.87E+00	3.96E+01	3.41E+02	2.30E-02	1.07E+00	7.68E+01	4.40E-01	-3.97E+01
PENRM	MJ	1.27E+02	0.00E+00	-2.14E-01	1.02E+02	0.00E+00	0.00E+00	-7.58E+01	0.00E+00	0.00E+00
PENRT	MJ	1.77E+02	2.87E+00	3.94E+01	4.43E+02	2.30E-02	1.07E+00	1.08E+00	4.40E-01	-3.97E+01
SM	kg	2.90E-01	0.00E+00	3.77E-02	6.56E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.56E-01
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.87E-02	5.55E-05	1.31E-02	5.88E-02	6.92E-07	2.07E-05	1.92E-03	-4.41E-03	-5.75E-03

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.

The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

PERE Primary Renewable energy (carrier)
PERM Primary Renewable energy (feedstock)
PERT Primary Renewable energy (total)
PENRE Primary Non-renewable energy (carrier)
PENRM Primary Non-renewable energy (feedstock)

PENRT Primary Non-renewable energy (total)
SM Use of secondary materials
RSF Use of renewable secondary fuels
NSRF Use of non-renewable secondary fuels
FW Use of Net Fresh Water

Environmental performance

WASTE

Results are declared per 1m² of average product

BITUMINOUS WATERPROOFING MEMBRANES FOR CIVIL ENGINEERING APPLICATIONS		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE	END OF LIFE STAGE				RESOURCE RECOVERY STAGE
IMPACT CATEGORY	UNIT	A1-A3	A4	A5	B4	C1	C2	C3	C4	D
HWD	kg	3.83E-02	5.13E-05	4.09E-02	4.00E-01	1.31E-06	1.91E-05	1.20E-01	1.68E-04	-1.77E-02
NHWD	kg	7.91E+00	4.11E-03	1.88E+00	4.22E+01	2.26E-05	1.53E-03	3.23E+00	8.08E+00	-2.61E-01
RWD	kg	3.26E-05	1.73E-07	1.73E-05	1.02E-04	1.07E-09	6.45E-08	8.19E-07	1.31E-07	-8.78E-05

OUTPUT FLOWS

BITUMINOUS WATERPROOFING MEMBRANES FOR CIVIL ENGINEERING APPLICATIONS		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE	END OF LIFE STAGE				RESOURCE RECOVERY STAGE
IMPACT CATEGORY	UNIT	A1-A3	A4	A5	B4	C1	C2	C3	C4	D
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	1.84E-02	0.00E+00	2.74E-02	1.52E+00	0.00E+00	0.00E+00	7.16E-01	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	1.78E-02	0.00E+00	7.31E-02	2.27E+01	0.00E+00	0.00E+00	1.12E+01	0.00E+00	0.00E+00
EET	MJ	3.62E-02	0.00E+00	1.48E-01	4.61E+01	0.00E+00	0.00E+00	2.28E+01	0.00E+00	0.00E+00

Method B reported in Annex 3 of the PCR is adopted for calculation of energy use indicator.

HWD Hazardous Waste Disposed
NHWD Non-Hazardous Waste Disposed
RWD Radioactive Waste Disposed
CRU Components For Re-Use
MFR Material For Recycling
MER Materials For Energy Recovery
EEE Exported electricity energy
EET Exported thermal energy

Environmental performance

ALTERNATIVE END-OF-LIFE SCENARIOS

Alternative End-of-Life scenarios assessed: 100% recycling, 100% Incineration with energy recovery and 100% Landfill

100% RECYCLING

IMPACT CATEGORY	UNIT	C2	C3	C4	D
GWP. t	kg CO_2 eq	2.19E-01	7.01E-02	0.00E+00	1.01E+01
GWP. f	kg CO_2 eq	2.18E-01	6.99E-02	0.00E+00	1.01E+01
GWP. b	kg CO_2 eq	6.90E-06	4.25E-05	0.00E+00	1.81E-02
GWP. luluc	kg CO_2 eq	3.46E-06	1.85E-04	0.00E+00	1.74E-02
GWP. GHG	kg CO_2 eq	2.18E-01	7.01E-02	0.00E+00	1.01E+01
ODP	kg CFC-11 eq	4.98E-09	9.79E-10	0.00E+00	2.76E-06
AP	mol H+ eq	6.81E-04	3.69E-04	0.00E+00	4.82E-02
EPf	kg P eq	1.35E-07	9.68E-07	0.00E+00	4.36E-04
EPm	kg N eq	2.76E-04	1.44E-04	0.00E+00	7.20E-03
EPt	mol N eq	3.02E-03	1.56E-03	0.00E+00	7.95E-02
POCP	kg NMVOC eq	1.09E-03	4.91E-04	0.00E+00	2.69E-02
ADPe	kg Sb eq	5.72E-09	5.55E-09	0.00E+00	7.37E-05
ADPf	MJ	2.91E+00	9.59E-01	0.00E+00	1.33E+02
WDP*	m^3 depriv.	9.53E-04	-1.14E-01	0.00E+00	4.44E+00
PERE	MJ	7.17E-03	2.72E-02	0.00E+00	6.68E+00
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	7.17E-03	2.72E-02	0.00E+00	6.68E+00
PENRE	MJ	2.91E+00	1.27E+02	0.00E+00	1.33E+02
PENRM	MJ	0.00E+00	-1.26E+02	0.00E+00	0.00E+00
PENRT	MJ	2.91E+00	9.59E-01	0.00E+00	1.33E+02
SM	kg	0.00E+00	0.00E+00	0.00E+00	4.01E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	5.64E-05	-2.61E-03	0.00E+00	1.08E-01
HWD	kg	5.21E-05	1.10E-03	0.00E+00	-3.75E-05
NHWD	kg	4.18E-03	1.93E+00	0.00E+00	-1.16E-01
RWD	kg	1.76E-07	4.63E-07	0.00E+00	1.08E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	4.77E+00	0.00E+00	0.00E+00

MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

100% INCINERATION WITH ENERGY RECOVERY

IMPACT CATEGORY	UNIT	C2	C3	C4	D
GWP. t	kg CO_2 eq	7.28E-02	1.13E+01	0.00E+00	-5.98E+00
GWP. f	kg CO_2 eq	7.28E-02	1.13E+01	0.00E+00	-5.97E+00
GWP. b	kg CO_2 eq	2.30E-06	1.45E-04	0.00E+00	-5.11E-03
GWP. luluc	kg CO_2 eq	1.15E-06	1.70E-04	0.00E+00	-7.13E-03
GWP. GHG	kg CO_2 eq	7.28E-02	1.13E+01	0.00E+00	-5.97E+00
ODP	kg CFC-11 eq	1.66E-09	7.49E-09	0.00E+00	-1.84E-07
AP	mol H+ eq	2.27E-04	3.78E-03	0.00E+00	-1.38E-02
EPf	kg P eq	4.51E-08	4.12E-06	0.00E+00	-2.35E-04
EPm	kg N eq	9.21E-05	9.78E-04	0.00E+00	-2.41E-03
EPt	mol N eq	1.01E-03	1.03E-02	0.00E+00	-2.64E-02
POCP	kg NMVOC eq	3.64E-04	2.68E-03	0.00E+00	-1.11E-02
ADPe	kg Sb eq	1.91E-09	1.26E-07	0.00E+00	-1.73E-07
ADPf	MJ	9.72E-01	2.08E+00	0.00E+00	-1.14E+02
WDP*	m^3 depriv.	3.18E-04	1.56E-01	0.00E+00	-5.25E-01
PERE	MJ	2.39E-03	8.95E-02	0.00E+00	-1.23E+01
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	2.39E-03	8.95E-02	0.00E+00	-1.23E+01
PENRE	MJ	9.72E-01	1.28E+02	0.00E+00	-1.14E+02
PENRM	MJ	0.00E+00	-1.26E+02	0.00E+00	0.00E+00
PENRT	MJ	9.72E-01	2.08E+00	0.00E+00	-1.14E+02
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.88E-05	5.13E-03	0.00E+00	-3.38E-02
HWD	kg	1.74E-05	2.67E-01	0.00E+00	-3.90E-02
NHWD	kg	1.39E-03	6.54E+00	0.00E+00	-4.35E-01
RWD	kg	5.86E-08	1.66E-06	0.00E+00	-4.06E-04
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00

MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	2.50E+01	0.00E+00	0.00E+00
EET	MJ	0.00E+00	5.08E+01	0.00E+00	0.00E+00

100% LANDFILL

IMPACT CATEGORY	UNIT	C2	C3	C4	D
GWP. t	kg CO_2 eq	3.64E-02	0.00E+00	5.57E-01	-1.43E-02
GWP. f	kg CO_2 eq	3.64E-02	0.00E+00	5.57E-01	-1.41E-02
GWP. b	kg CO_2 eq	1.15E-06	0.00E+00	6.94E-05	-8.55E-05
GWP. luluc	kg CO_2 eq	5.77E-07	0.00E+00	2.29E-05	-7.80E-05
GWP. GHG	kg CO_2 eq	3.64E-02	0.00E+00	5.57E-01	-1.42E-02
ODP	kg CFC-11 eq	8.30E-10	0.00E+00	1.54E-09	-6.28E-10
AP	mol H+ eq	1.13E-04	0.00E+00	6.67E-04	-6.37E-05
EPf	kg P eq	2.26E-08	0.00E+00	3.95E-07	-9.64E-07
EPm	kg N eq	4.60E-05	0.00E+00	4.16E-04	-1.50E-05
EPt	mol N eq	5.04E-04	0.00E+00	1.48E-03	-1.49E-04
POCP	kg NMVOC eq	1.82E-04	0.00E+00	6.65E-04	-7.69E-05
ADPe	kg Sb eq	9.53E-10	0.00E+00	1.15E-08	-1.65E-09
ADPf	MJ	4.86E-01	0.00E+00	1.10E+00	-4.70E-01
WDP*	m^3 depriv.	1.59E-04	0.00E+00	4.80E-02	-1.18E-02
PERE	MJ	1.19E-03	0.00E+00	1.33E-02	-1.03E-01
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.19E-03	0.00E+00	1.33E-02	-1.03E-01
PENRE	MJ	4.86E-01	0.00E+00	1.10E+00	-4.70E-01
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	4.86E-01	0.00E+00	1.10E+00	-4.70E-01
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	9.40E-06	0.00E+00	1.14E-03	-2.71E-04
HWD	kg	8.68E-06	0.00E+00	4.19E-04	-1.84E-04
NHWD	kg	6.96E-04	0.00E+00	2.02E+01	-1.19E-01
RWD	kg	2.93E-08	0.00E+00	3.27E-07	-1.30E-06
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00

MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Environmental performance

RESULTS VARIATION

The table below presents the variation in results between each subgroup compared to the average product, considering the modules A1-A3.The variations in the results are due, in addition to the different composition of the membranes. For some impact indicators the differences are very marked, this is due to the absence or presence of particular substances.

IMPACT CATEGORY	MIN VARIABILITY - %	MAX VARIABILITY - %
GWP. t Global Warming Potential Total	-15%	9%
GWP, f Global Warming Potential Fossil Fuels	-16%	9%
GWP, b Global Warming Potential Biogenic	-5%	9%
GWP, luluc Global Warming Potential Land use and Ind use change	-9%	16%
AP Acidification Potential	-1%	0.3%
EP - freshwater Eutrophication Potential Aquatic freshwawter	-19%	10%
EP - marine Eutrophication Potential, acquatic marine	-0.3%	1%
EP - terrestrials Eutrophication Potential, terrestrial	-1%	1%
POCP Photochemical Ozone Creation Potential	-9%	5%
ODP Ozone Depletion Potential	-53%	30%
ADP minerals and metals Abiotic Depletion Potential - Non fossil resources (elements)	-8%	4%
ADP fossil Abiotic Depletion Potential - Fossil resources	-18%	10%
WDP Water Deprivation Potential	-15%	8%

Additional Environmental information

MINIMUM CONTENT OF RECYCLED, RECOVERED OR BY-PRODUCT MATERIAL

The table outlines the minimum content of recycled, recovered, and by-product materials as defined by UNI/PdR 88:2020, integrated with the relevant guidelines for the EPDs.

PRODUCT NAME		RECYCLED MATERIAL			RECOVERED MATERIAL - %	BY-PRODUCT MATERIAL - %	TOTAL CONTENT OF RECYCLED, RECOVERED, BY-PRODUCT MATERIAL - %
		TOTAL - %	PRE-CONSUMER - %	POST-CONSUMER - %			
NOVABOND PONTI	≥	1.9%	0.0%	1.9%	0.0%	0.0%	1.9%
NOVAPONTI	≥	2.0%	0.0%	2.0%	0.0%	0.0%	2.0%

ABBREVIATIONS

EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
C-PCR	Complementary Product Category Rules
CPC	Central product classification
SBS	Styrene-Butadiene-Styrene
BPE	Bituminous-Polymeric Elastomeric

OTHER GENERAL TERMS

SVHC	Substances of Very High Concern
EC No.	European Community Number
CAS No.	Chemical Abstracts Service Number
MJ	Megajoule
kg	Kilogram
m^3	Cubic Meter
NMVOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO_2eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO_2eq.	Kilograms of Carbon Dioxide Equivalent

REFERENCES

General Programme Instructions of the International EPD® System, version 5.01

Product Category Rules PCR 2019:14 Construction products, version 2.0.1.

c-PCR EN 17388, Part 1 and Part 2, October 2024

EN 15804:2012+A2:2019/AC:2021

ISO 14040:2006/AMD:2020

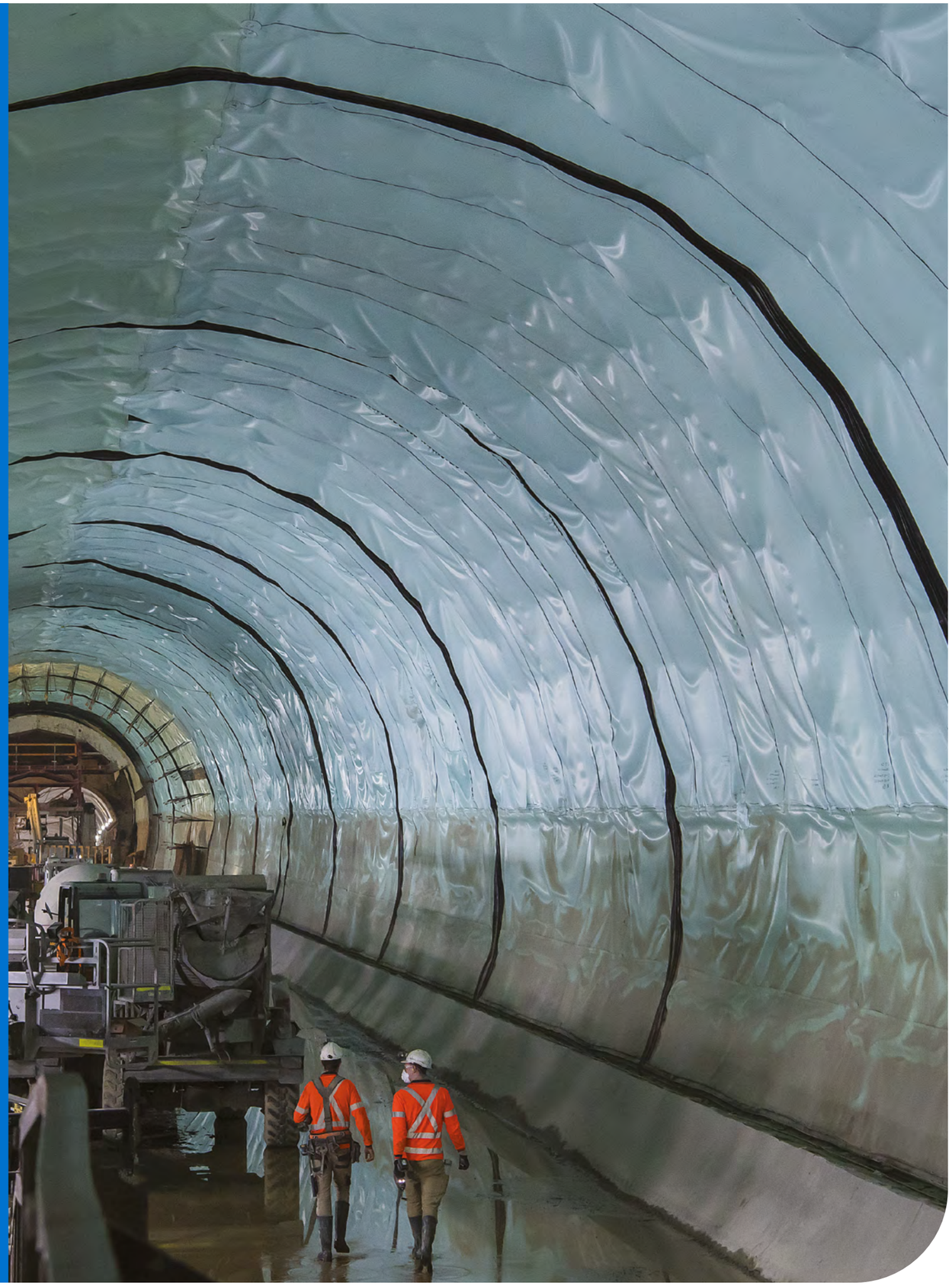
ISO 14044:2006/AMD:2020

ISO 14025:2006

Life Cycle Assessment applied to waterproofing bitumen membranes, rev.2 - 09/12/2025

VERSION HISTORY

Original version of the EPD, 2026-01-20



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