

**Environmental
Product
Declaration**

According to ISO14025+EN15804+A2

This declaration is for:
SOLITEX FRONTA QUATTRO connect

Provided by:
pro clima / MOLL bauökologische Produkte GmbH



MRPI® registration:
1.1.01083.2026

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MRPI® REGISTRATION

1.1.01083.2026

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SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Dr.-Ing. Nikolay Minkov, greentability Ltd.. The LCA study has been done by Antonia Willich & María Díaz Cáceres, brands & values GmbH. The certificate is based on an LCA-dossier according to ISO14025+EN15804+A2. It is verified according to the 'Verification protocol for MRPI LCA project report & EPD 21th of May 2025, V. 5.2'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

PROGRAM OPERATOR

Stichting MRPI®
 Kingsfordweg 151
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 Amsterdam

PRODUCT

SOLITEX FRONTA QUATTRO connect

DECLARED UNIT / FUNCTIONAL UNIT

1 Area (m2)

DESCRIPTION OF PRODUCT

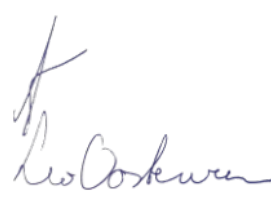

Breather membrane (WRB) for open-jointed cladding, with self-adhesive strips

VISUAL PRODUCT



MORE INFORMATION

<https://proclima.com/products/external-sealing/solitex-fronta-quattro-connect>

<p>Ing. L. L. Oosterveen MSc. MBA Managing Director MRPI</p>	<p>DEMONSTRATION OF VERIFICATION</p>
	<p>CEN standard EN15804 serves as the core PCR [1]</p>
	<p>Independent verification of the declaration and data according to ISO14025+EN15804+A2</p> <p>Internal: _____ External: X</p>
	<p>Third party verifier: Dr.-Ing. Nikolay Minkov, greentability Ltd.</p> 
<p>[1] PCR = Product Category Rules</p>	

DETAILED PRODUCT DESCRIPTION

SOLITEX FRONTA QUATTRO connect has the following components:

Protective and covering fleece: Polypropylene microfibre; Functional film: Monolithic TEEE; Self-adhesive strips: Water-resistant SOLID adhesive.

Reference service life: 30 years

Applications

For use as a breather membrane (weather-resistive barrier, WRB) behind closed and open facades (open-jointed cladding up to a gap width of 35 mm (1 3/8")); cladding width = at least 3 x gap width). Installation onto boarding, wood-based panels and all

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Non-woven and scrim (PP)	0,16	0.0%	0 %- 0 kg C/kg
Additives and adhesives	0,027055	0.0%	0 %- 0 kg C/kg
Printing ink	0,001	0.0%	0 %- 0 kg C/kg
Total product	0,188055	0.0%	0 %- 0 kg C/kg

The SOLITEX FRONTA QUATTRO connect breather membrane (or weather-resistive barrier, WRB) with self-adhesive strips for open-jointed cladding is produced by bonding and laminating two fleece layers (front and back) with a functional film layer between them to create large rolls. These rolls are printed and then cut into smaller rolls, which are the sales units. Adhesive strips and release films are fitted to the long edges of the membranes to create the self-adhesive 'connect' strips (one on the printed front surface, one on the back surface). These rolls are then packaged and sent for storage and distribution, first to the central warehouse in Germany, and then all over the world for further sale.

Packaging materials	Weight, kg	Weight-% (relative to the product)	Weight biogenic carbon, [kg C/kg]
Film (PE)	0,006442667	0,029392934	0 kg C/kg
Film (PP)	0,00336	0,015329097	0 kg C/kg
Cardboard	0,005333333	0,024331899	0,002 kg C/kg
Pallet	0,016	0,072995698	0,008 kg C/kg
Total packaging	0,031136	0,142049628	0,01 kg C/kg
TOTAL Product with packaging	0,219191	1	0,01 kg C/kg

Biogenic carbon content	Unit (expressed per functional unit)
Biogenic carbon content in product	0 kg C/kg
Biogenic carbon content in accompanying packaging	0,01 kg C/kg

SCOPE AND TYPE

Geographical Scope: Netherlands

The product is manufactured in Germany and subsequently transported to the Netherlands for sale.

End-of-life processes are modelled according to conditions and scenarios applicable to the Netherlands. The software system LCA for Experts (GaBi) version 10.9 was used for the creation of the LCA model. Background datasets from the ecoinvent database (Service Pack 3.9.1, 2022) were applied within the LCA software.

Type of EPD: Representative

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to 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	ND	ND	ND	ND	x	x	x	x	x

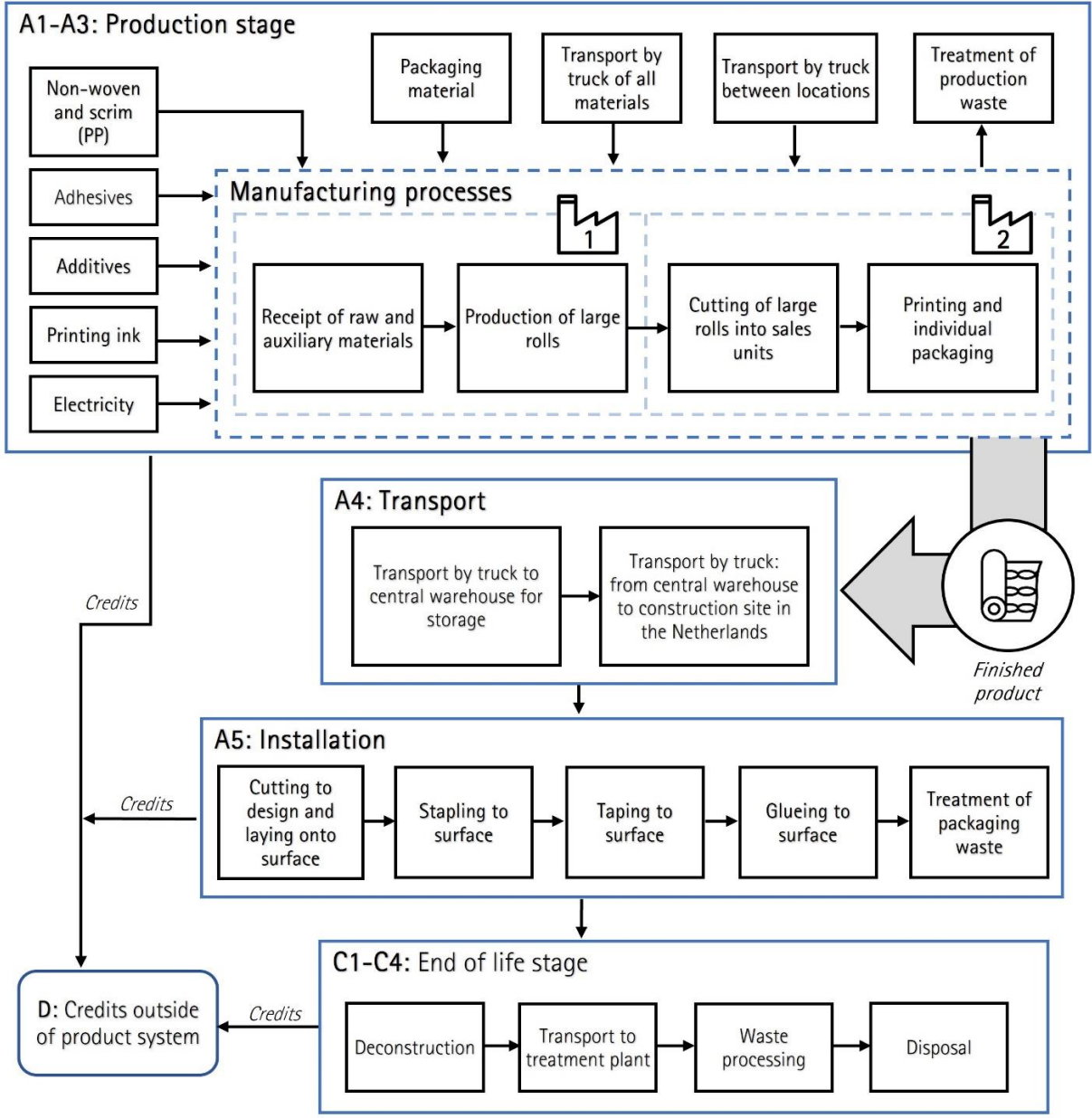
X = Modules Assessed

ND = Not Declared

Ecosphere

Technosphere

System boundaries



REPRESENTATIVENESS

The system boundary of the EPDs is: Cradle to gate with options, modules C1–C4, and module D (A1–A3 + C + D and additional modules A4 and A5)

This EPD covers a group of similar products and is based on one representative product that is considered typical for the entire product group. The products included differ only by the presence of an integrated self-adhesive strip, while the underlying membrane, materials, and manufacturing processes remain the same. A sensitivity analysis has shown that the differences between the products do not exceed the allowable deviation, confirming the representativeness of the selected product. To ensure a conservative approach, the product variant with the highest environmental impacts was selected as the representative product for this EPD.

The variability of the LCIA results within the product group amounts to 3,2 % for the core indicator GWP-total. For all other impact categories, the deviations range between 0 % and 4 %.

Manufacturing of the breather membrane (WRB) for open-jointed cladding, with self-adhesive strips occurs in Germany.
Geographical Scope: Netherlands

ENVIRONMENTAL IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	6,05E-01	3,04E-02	3,83E-02	6,74E-01	3,84E-05	9,93E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,22E-03	4,37E-01	2,03E-03	-1,71E-01
GWP-fossil	kg CO2 eq.	6,14E-01	3,04E-02	3,83E-02	6,82E-01	3,84E-05	8,62E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,22E-03	4,37E-01	2,03E-03	-1,71E-01
GWP-biogenic	kg CO2 eq.	-1,10E-02	9,73E-06	4,62E-06	-1,10E-02	1,22E-08	1,28E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,31E-06	2,15E-05	2,13E-07	-3,02E-04
GWP-luluc	kg CO2 eq.	2,33E-03	1,49E-05	2,64E-06	2,35E-03	1,87E-08	2,20E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,53E-06	9,56E-06	4,40E-08	-1,43E-05
ODP	kg CFC11 eq.	1,25E-07	6,65E-10	3,03E-10	1,26E-07	8,42E-13	1,18E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,58E-10	1,72E-09	5,68E-12	-9,22E-09
AP	mol H+ eq.	2,42E-03	1,26E-04	5,24E-05	2,60E-03	2,18E-07	2,58E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,99E-05	9,71E-05	1,27E-06	-2,04E-04
EP-fresh water	kg P eq.	1,26E-04	2,14E-06	8,35E-06	1,36E-04	2,69E-09	1,46E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,09E-07	7,73E-06	1,33E-08	-4,63E-06
EP-marine	kg N eq.	5,01E-04	4,81E-05	1,39E-05	5,63E-04	9,20E-08	6,06E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,14E-05	4,10E-05	1,10E-05	-5,65E-05
EP-terrestrial	mol N eq.	5,00E-03	5,12E-04	1,36E-04	5,65E-03	9,89E-07	5,79E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,22E-04	3,93E-04	5,74E-06	-5,94E-04
POCP	kg NMVOC eq.	2,18E-03	1,84E-04	4,12E-05	2,40E-03	3,20E-07	2,40E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,38E-05	1,11E-04	2,66E-06	-2,67E-04
ADP-minerals & metals	kg Sb eq.	3,52E-06	9,82E-08	1,96E-08	3,64E-06	1,23E-10	3,40E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,33E-08	5,25E-08	3,90E-10	-5,78E-07
ADP-fossil	MJ, net calorific value	1,82E+01	4,38E-01	3,91E-01	1,90E+01	5,54E-04	1,85E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,04E-01	2,30E-01	4,50E-03	-3,27E+00
WDP	m3 world eq. Deprived	2,17E-01	2,65E-03	8,58E-03	2,28E-01	3,34E-06	2,36E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,30E-04	1,39E-02	2,36E-04	-2,07E-02

- GWP-total = Global Warming Potential total
- GWP-fossil = Global Warming Potential fossil fuels
- GWP-biogenic = Global Warming Potential biogenictotal
- GWP-luluc = Global Warming Potential land use and land use change
- ODP = Depletion potential of the stratospheric ozone layer
- AP = Acidification Potential, Accumulated Exceedence
- EP-freshwater = Eutrophication Potential, fraction of nutrients reaching freshwater end compartment
- EP-marine = Eutrophication Potential, fraction of nutrients reaching marine end compartment
- EP-terrestrial = Eutrophication Potential, Accumulated Exceedence
- POCP = Formation potential of tropospheric ozone photochemical oxidants
- ADP-minerals & metals = Abiotic Depletion Potential for non-fossil resources [1]
- ADP-fossil = Abiotic Depletion for fossil resources potential [1]
- WDP = Water (user) deprivation potential, deprivation-weighted water consumption [1]

Disclaimer [1]:

- 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 experience with the indicator.

ENVIRONMENTAL IMPACT per functional unit or declared unit (additional indicators A2)

Unit		A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease incidence	2,06E-08	2,03E-09	2,01E-10	2,28E-08	3,57E-12	2,32E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,82E-10	7,26E-10	3,03E-11	-1,39E-09
IRP	kBq U235 eq.	3,46E-02	5,81E-04	3,99E-03	3,92E-02	7,31E-07	4,60E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,38E-04	9,53E-04	1,15E-05	-1,58E-03
ETP-fw	CTUe	2,00E+00	2,11E-01	7,02E-02	2,28E+00	2,67E-04	2,48E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,01E-02	7,04E-01	4,20E-03	-6,51E-02
HTP-c	CTUh	2,62E-10	1,46E-11	5,51E-12	2,82E-10	2,65E-14	8,03E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,46E-12	2,82E-11	1,35E-13	-2,20E-11
HTP-nc	CTUh	4,91E-09	2,73E-10	2,23E-10	5,41E-09	4,38E-13	6,00E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,47E-11	5,27E-10	3,98E-12	-2,95E-10
SQP	-	1,79E+00	2,58E-01	2,63E-02	2,07E+00	3,24E-04	1,94E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,13E-02	6,38E-02	1,10E-02	-4,89E-02

- PM = Potential incidence of disease due to PM emissions
- IRP = Potential Human exposure efficiency relative to U235 [1]
- ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
- HTP-c = Potential Comparative Toxic Unit for humans, cancer [2]
- HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
- SQP = Potential soil quality index [2]

Disclaimer [1]:

- 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.

Disclaimer [2]:

- 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 experience with the indicator.

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 en A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NHWD	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RWD	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
CRU	kg	0,00E+00	0,00E+00	1,18E-02	1,18E-02	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	1,65E-03	1,65E-03	0,00E+00	6,77E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,06E-02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,35E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	2,46E-02	2,46E-02	0,00E+00	2,26E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	9,78E-01	0,00E+00	1,06E-04
ETE	MJ	0,00E+00	0,00E+00	4,24E-02	4,24E-02	0,00E+00	4,15E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,68E+00	0,00E+00	1,83E-04

- HWD = Hazardous Waste Disposed
- NHWD = Non Hazardous Waste Disposed
- RWD = Radioactive Waste Disposed
- CRU = Components for reuse
- MFR = Materials for recycling
- MER = Materials for energy recovery
- EEE = Exported Electrical Energy
- ETE = Exported Thermal Energy

RESOURCE USE per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	4,21E-01	6,74E-03	2,41E-03	4,30E-01	8,48E-06	1,62E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,60E-03	1,36E-02	1,97E-04	-2,32E-02
PERM	MJ	1,12E-01	0,00E+00	0,00E+00	1,12E-01	0,00E+00	-1,12E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	5,32E-01	6,74E-03	2,41E-03	5,41E-01	8,48E-06	5,09E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,60E-03	1,36E-02	1,97E-04	-2,32E-02
PENRE	MJ	9,83E+00	4,38E-01	3,91E-01	1,07E+01	5,54E-04	2,30E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,04E-01	7,36E+00	7,71E-01	-3,27E+00
PENRM	MJ	8,34E+00	0,00E+00	0,00E+00	8,34E+00	0,00E+00	-4,45E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-7,13E+00	-7,67E-01	0,00E+00
PENRT	MJ	1,82E+01	4,38E-01	3,91E-01	1,90E+01	5,54E-04	1,85E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,04E-01	2,30E-01	4,50E-03	-3,27E+00
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	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	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NSRF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	5,04E-03	6,18E-05	2,00E-04	5,30E-03	7,78E-08	5,49E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,47E-05	3,25E-04	5,49E-06	-4,81E-04

- PERE = Use of renewable primary energy excluding renewable primary energy 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 resources excluding non-renewable 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 materials
- RSF = Use of renewable secondary fuels
- NSRF = Use of non-renewable secondary fuels
- FW = Use of net fresh water

BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	kg C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
BCCpa	kg C	0,00E+00	0,00E+00	0,00E+00	-1,00E-02	0,00E+00	1,00E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

- BCCpr = Biogenic carbon content in product
- BCCpa = Biogenic carbon content in packaging

CALCULATION RULES

The reference year of this study is 2023. The LCA was carried out in accordance with the requirements and guidelines of the NMD "Bepalingsmethode Milieuprestatie Bouwwerken" (Environmental Performance Assessment Method for Construction Works) (version 1.2, January 2025).

Cut-off criteria:

The impact associated with the disregarded mass shares is less than 5% of the impact categories per module. In addition, less than 1% of the total mass and the primary energy used is cut off. No substances or processes with high environmental relevance were cut off. Equipment and infrastructure required in production are not included in this LCA. An attempt was made to take into account all data collected in the operational data collection. Thus, material flows with a mass fraction of less than one percent were also balanced.

Data quality: The data quality of the relevant datasets was assessed using EN 15804+A2, Annex E, Table E.2. The two datasets with the highest contribution to the core indicators are from ecoinvent 3.9.1: the RER fleece production, polyethylene, contributing between 14 % and 88 % to the core indicators, and the CH treatment of waste polypropylene, municipal incineration with fly ash extraction, contributing up to 38 % to the core indicators.

The dataset RER fleece production, polyethylene was assessed with an overall data quality score of 1.67, corresponding to "good". The dataset CH treatment of waste polypropylene, municipal incineration with fly ash extraction was assessed with an overall data quality score of 2.00, corresponding to "good".

Data collection:

The software system LCA for Experts (GaBi) version 10.9 was used the LCA model. The entire manufacturing process was modelled as far as possible using the manufacturer-specific data. For the upstream and downstream processes, generic background data sets were used. Background datasets from the ecoinvent database (Service Pack 3.9.1, 2022) were applied within the LCA software.

Approach Power Mix: The location-based approach was applied using the residual electricity mix. Electricity is the only energy carrier used in modules A1-A3. The ecoinvent 3.9.1 dataset "Electricity, medium voltage, residual mix, DE" with a reference year of 2022 was used. The residual mix represents the electricity mix of untracked consumption, i.e. electricity consumption not explicitly tracked through mechanisms such as Guarantees of Origin (GO), calculated based on statistics from AIB (2022) following the methodology of grexel (2020). The composition of the residual mix is 9.22 % renewable, 17.02 % nuclear and 73.76 % fossil. The GWP-total of the electricity dataset is 0.705 kg CO₂ eq./kWh.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

Production, A1-A3

For the modelling of the raw material extraction up to the production of the precursors (A1), generic data sets are used, which already include the system boundaries (cradle to gate) for the input materials. Transports (A2) are covered by generic data sets, the system boundary for truck transports is on the input side for the upstream processes of the fuels and on the output side for the emissions caused (exhaust gases). The manufacturing phase (A3) is modelled with manufacturer-specific material and energy data, whereby the upstream chains of the energy flows are again modelled using generic data sets.

Technical specifications for SOLITEX FRONTA QUATTRO connect	Property	Regulation	Value
	Colour	N/A	Black
	Surface weight	EN 1849-2	180 ±5 g/m ² ; 0.59 ±0.02 oz/ft ² (*)
	Thickness	EN 1849-2	0.60 mm ; 24 mils
	Water vapour resistance factor μ	EN ISO 12572	80
	sd value	EN ISO 12572	0.05 m
	g value	N/A	0.25 MN·s/g
	Vapour permeance	ASTM E 96	65.6 perms
	Fire class	EN 13501-1	E
	Outdoor exposure	N/A	6 months
	Watertight joints with 'connect' adhesive strips or TESCON VANA tape	EN 13859-1	W1
	Water column	EN ISO 811	10 000 mm ; 32' 10"
	Watertightness, non-aged/aged*	EN 13859-2	W1 / W1
	Tensile strength MD/CD	EN 13859-2 (A)	290 N/5 cm / 220 N/5 cm ; 33 lb/in / 25 lb/in
	Tensile strength MD/CD, aged*	EN 13859-2 (A)	200 N/5 cm / 135 N/5 cm ; 23 lb/in / 15 lb/in
	Elongation MD/CD	EN 13859-2 (A)	50% / 70%

Construction and Installation, A4-A5

Module A4 accounts for the environmental impacts of transportation from the production gate to the construction site. The system boundary for truck transports is on the input side for the upstream processes of the fuels and on the output side for the emissions caused (exhaust gases). In module A5, the packaging resulting from the product's installation on the construction site is sent for waste treatment. The transport expenses for disposal are also considered in module A5, and the credits from waste recycling are in module D.

The production of a 10% extra membrane with packaging is assigned to Module A5, 2% from which is treated as waste loss due to trimmings (Module A5) and 8% is installed as overlap, to ensure the building airtightness. The required overlap is treated as waste during the End-of-Life (Modules C1-C4).

	Elongation MD/CD, aged*	EN 13859-2 (A)	30% / 40%
	Nail tear resistance MD/CD	EN 13859-2 (B)	220 N / 300 N ; 49 lbf / 67 lbf
	*) Durability after artificial ageing	EN 1297 / EN 1296	Passed (for walls with open joints)
	Flexibility at low temperature	EN 1109	-40 °C ; -40 °F
	Temperature resistance	EN 1109, EN 1296, EN 1297	Permanent -40 °C to 100 °C ; -40 °F to 212 °F
	Thermal conductivity	N/A	0.04 W/(m·K) ; 0.3 BTU·in/(h·ft ² ·°F)
	CE labelling	EN 13859-2	Yes

End-of-life, C1-C4

In module C2, the transports to the disposal processes are considered. The system boundary for truck transports lies on the input side with the upstream processes of the fuels and on the output side with the emissions caused (exhaust gases).

Module C3 contains the necessary processes for waste treatment at the end of the product life cycle. The loads for waste treatment are mapped here until the end of the waste property is reached. Emissions are assigned to module C3. Resulting credits are assigned to module D. Module C4 describes the expenses for the disposal of the product or its components if material or energy recovery or reuse is not possible.

The End-of-Life (EoL) modelling for all material types – including plastics, metals (e.g. steel), and aluminium – was carried out in accordance with the Product Category Rules (PCR) applicable for the Netherlands (Nationale Milieudatabase, 2025) These PCR specifications include a table outlining the percentage distribution of waste treatment routes for various material categories. The documented shares of incineration, landfill, and recycling were implemented into the life cycle model for each respective material.

DECLARATION OF SVHC

None of the substances in the product are on the 'Candidate List of Substances of Very High Concern for Authorization' (SVHC) or exceed the threshold value of the European Chemicals Agency.

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