

# Environmental Product Declaration

for multiple products, based on a representative  
product

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

## **NEXALON TPO**

*Disclaimer: Product not yet on the market - Results of this EPD shall be used with care as the LCI data is not yet based on 1 year of production which may results in increased uncertainty*

from

**DANOSA GROUP**



Programme:	The International EPD System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products from a company. EPD of product not yet on the market
EPD registration number:	EPD-IES-0026226
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*An EPD may be updated or republished if conditions change. To find the latest version of the EPD and to confirm its validity, see [www.environdec.com](http://www.environdec.com)*



## GENERAL INFORMATION

Programme Information	
<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:support@environdec.com">support@environdec.com</a>

Product Category Rules (PCR)
<b>CEN standard EN 15804 serves as the Core Product Category Rules (PCR)</b>
<b>Product Category Rules (PCR):</b> <i>PCR 2019:14 Construction products, version 2.0.1; EPD-IES-0026226; UN CPC code: 54530 Roofing and waterproofing services</i>
<b>PCR review was conducted by:</b> The International EPD® System Technical Committee. See <a href="http://www.environdec.com">www.environdec.com</a> for a list of members. The review group can be contacted through the Secretariat at <a href="http://www.environdec.com/contact">www.environdec.com/contact</a> .

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
<input checked="" type="checkbox"/> <b>Individual EPD verification without a pre-verified LCA/EPD tool</b> Third-party verifier: <i>Elisabet Amat, <a href="mailto:eamat@greenize.es">eamat@greenize.es</a></i> Approved by: International EPD System
*EPD process certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on <a href="http://www.environdec.com">www.environdec.com</a> .
Procedure for follow-up of data during EPD validity involves third party verifier:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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 first-digit version number) 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.



## INFORMATION ABOUT EPD OWNER

Owner of the EPD: Danosa Group

Address: Poligono Industrial Sector 9, 19290 FONTANAR (Guadalajara) Spain

Contact: Gelke Hermenau - +34 91 658 68 50 (Ext. 2) – tecnico.es@danosa.com

Description of the organisation: DANOSA is a manufacturing company, specialising in integral solutions for sustainable construction. It has been in continuous activity since its foundation in 1964, having evolved through new products and systems, addressing and expanding geographies and supplied markets, with a distribution of sales between national and international markets of 50% respectively. It is considered one of the benchmark companies in the Spanish and European markets, with a global presence in more than 100 countries.

Thanks to this, DANOSA meets the needs of Building and Civil Engineering: asphalt waterproofing, synthetic waterproofing, liquid waterproofing, acoustic insulation, thermal insulation, mortars, drainage, geotextiles and skylights. In recent years, it has been fully involved in the development of innovation and sustainability projects, adapting its solutions to comply with sustainable construction standards, maximising the energy efficiency of buildings. In addition, it has ISO 9001 and ISO 14001 quality and environmental certificates respectively.

Many of its products have Environmental Product Declarations (EPD) and are also integrated in the materials platform of the Green Building Council Spain, which allows them to score in projects with GREEN, LEED and BREEAM certification. The company has also strengthened its business line dedicated to the recovery of materials and its commitment to the circular economy, which allows it to introduce recycled materials into production processes, enabling these wastes to become useful raw materials for the manufacture of new products.

Product-related or management system-related certifications: ISO 9001, ISO 14001 and ISO 50001.

## PRODUCT INFORMATION

Product name: NEXALON TPO

Product identification: Thermoplastic Polyolefin (TPO) based sheet NEXALON

UN CPC code: 54530 Roofing and waterproofing services

Product description: The NEXALON TPO sheet is a thermoweldable thermoplastic polyolefin (TPO) membrane, manufactured through an advanced polymerization process and reinforced with a polyester mesh, combining the flexibility of ethylene-propylene (EP) with the thermoweldability of polypropylene. The membrane offers excellent resistance to weathering and UV radiation.

A system of Mechanically Fastened Flexible Roof Waterproofing Sheets, designed for the waterproofing of deck-type roofs using mechanical fastening systems, suitable for both new constructions and renovation projects in residential, commercial, and industrial buildings. They are also suitable for exposed roofing systems and fully adhered installations.

The product is available in four thicknesses, ranging from 1.3 mm to 2.0 mm:

- NEXALON TPO 1.2 with a weight of 1.3 kg/m<sup>2</sup>
- NEXALON TPO 1.5 with a weight of 1.5 kg/m<sup>2</sup>
- NEXALON TPO 1.8 with a weight of 1.9 kg/m<sup>2</sup>
- NEXALON TPO 2.0 with a weight of 2.1 kg/m<sup>2</sup>

*Disclaimer: NEXALON TPO 1.2, NEXALON TPO 1.5, NEXALON TPO 1.8 and NEXALON TPO 2.0 are not yet on the market - Results of this EPD shall be used with care as the LCI data for these products are not yet based on 1 year of production which may result in increased uncertainty.*

Name and location of production site(s): Poligono Industrial Sector 9, 19290 FONTANAR (Guadalajara) Spain

## CONTENT DECLARATION

- The mass (weight) of one unit of a product, as purchased or per declared unit: 1.5 kg/m<sup>2</sup>
- Content of the product in the form of a list of materials and substances, and their mass:

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Polyolefin matrix	1.04E+00	-	-	-
Mineral charge	3.00E-01	-	-	-
Additives	9.00E-02	-	-	-
Reinforcement	7.50E-02	-	-	-
TOTAL	1.50E+00	-	-	-

- The mass and the content of distribution and/or consumer packaging:

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
Pallet	5.27E-02	4%	2,64E-02
Plastic film (polyethylene)	4.31E-03	0%	-
Strap (polypropylene)	5.18E-04	0%	-
TOTAL	5.75E-02	4%	2,64E-02

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO<sub>2</sub>.

## LCA INFORMATION

Declared unit: 1 m<sup>2</sup> of NEXALON TPO sheet and its packaging, with a weight of 1.50 kg/m<sup>2</sup> and a reference life of 35 years.

Conversion factor to mass if mass is not used as declared unit: 1.50 kg/m<sup>2</sup>

Reference service life: 35 years

Time representativeness: The primary data were obtained from the production center and refer to the year 2023.

Geographical scope: Europe

Database(s) and LCA software used: Ecoinvent v3.9.1 (allocation, cut-off by classification) and SimaPro 10.2.0.2. Calculation methodologies are in accordance with UNE-EN 15804:2012+A2:2019.

EPD/LCA Tool used: None

Description of system boundaries: Cradle to grave and module D.

The principles of modularity and pollutant payer have been followed. For the exclusion of inputs and outputs (cut-off criteria) the following procedure is followed:

- All inputs and outputs of a (unit) process for which data are available are included in the calculation. Missing data can be replaced by conservative assumptions of average or generic data. Any assumptions regarding these options are reported in this document.
- Where input data are insufficient or missing data for a unit process, the cutoff criteria shall be 1% of the renewable and non-renewable primary energy use and 1% of the total mass input to that unit process. Total input flows not considered per module, e.g., for modules A1-A3, A4-A5, shall be at most 5% of energy use and mass.
- In accordance with PCR 2019:14 Construction Products, version 2.0.1, a minimum of 95% of all mass and energy inputs and outputs of the central system, identified in the life cycle inventory included in this report, have been included. Those inputs and outputs, for which data are not available, that together represent less than 5% of the mass:
  - Packaging from raw and auxiliary materials.
  - Packaging waste from raw materials and auxiliary materials.
- In the case of those wastes whose output is a recycling operation, only the transport to the waste manager has been considered.

In addition, the following processes have not been included in the scope of the study, in accordance with the provisions of PCR 2019:14, Version 2.0.1.

- Manufacture of equipment used in production, buildings or any other capital goods;
- Transportation of personnel to the plant;
- Transportation of personnel within the plant;
- Research and development activities;
- Long-term emissions.

At least 95% of all mass and energy inputs and outputs of the central system, identified in the life cycle inventory included in this report, have been included. Inputs and outputs for which data are not available, which together represent less than 5% of the mass, such as packaging waste or auxiliary materials, have not been considered.

As far as possible, allocation has been avoided. Total energy consumption and waste generation data for the factory have been allocated on a mass allocation, based on the volume of production.

Finally, it is important to note that the NEXALON TPO sheet does not yet have complete primary data for its life cycle, as the product has not been launched on the market. Consequently, data related to electricity, water and lubricant consumption; annual production volumes; waste generation; electricity mix; and product distribution (stage A4) were taken from the PVC DANOPOL waterproofing sheet (EPD-SP-00691), given the similarity in their production processes, from 2023.

The objective is to proceed with the publication of the EPD using the best available proxy data, and once the product has been in distribution for a full year, to update the EPD with primary data from actual operations.

- **A1-A3 Production Stage**

A1-A3: product stage, including the supply of all materials, products, and energy, as well as waste treatment during this stage. It includes the following modules:

- A1: extraction and processing of raw materials, processing of inputs constituting secondary materials.
- A2: transportation to the manufacturer.
- A3: manufacturing.

As permitted by EN 15804:2012 + A2:2019/AC:2021, the results of stages A1-A3 have been grouped into a sole product stage (A).

#### A1. Raw Materials

NEXALON TPO-based sheets are composed of 90-95% mixture combining thermoplastic olefin with proprietary additives and 4-8% reinforcement.

#### A2. Raw Materials transport

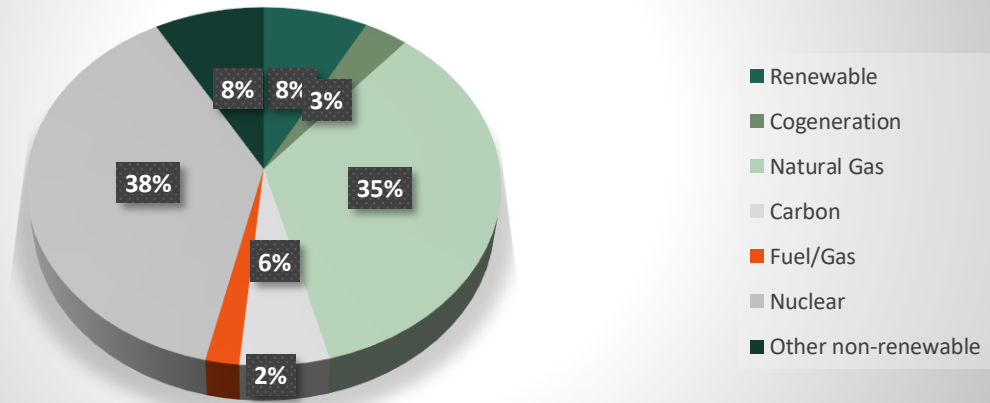
Raw materials are transported from different countries in Europe (Italy, United Kingdom, Spain and Czech Republic). The modeling includes the transport by road and ship of each raw material until delivery to the DANOSA manufacturing plant for further processing. An average of 1467 km of travel in a 16-32 ton truck and 251 km by ship.

#### A3. Manufacturing

The entire product is manufactured in Spain (ES). The quantity of sheet produced considers the production losses, estimated at 5.8%, which have been considered for the calculations of this stage.

As mentioned in the cutting rules, DANOPOL's waterproofing sheet supplier, CESPAS GAS Y ELECTRICIDAD S.A.U., was used, providing an residual electricity mix with an average emission factor of 0.250 kg CO<sub>2</sub>/kwh.

## CEPSA GAS Y ELECTRICIDAD S.A.U's Residual electricity Mix



Once the product is finished, it is packed by strapping and plastic film, stacked on a wooden pallet.

- **A4-A5 Construction process stage**

The construction phase comprises two modules: A4) Transportation and A5) Construction/Installation.

#### A4. Distribution

As with the electricity mix, the values from the PVS DANOPOL sheet were used for product transportation from the production plant to the installation site, with an average distance of 77 km by road for national distribution and 554 km by road for international distribution. For all the references in the profile, 66% is national distribution and 34% international.

The main parameters affecting the result of this stage are:

Parameter	Value (expressed in Declared Unit)
Type of fuel and consumption of the vehicle or type of means of transport used	National/International distribution: >32 tn Euro 6 truck with a diesel consumption of 0.38 liters per km
Distance	National distribution: 77 km (by road) International distribution: 554 km (by road)
Usage capacity (including return transport without load)	% assumed in Ecoinvent
Bulk density of transported product: solid elastomeric membrane (kg/m <sup>3</sup> )	1000
Volume use capacity factor	1 (default)

A5. Installation

This module includes all materials and energy used for the installation of the products. At the same time, transport and waste management are considered.

The installation does not include any auxiliary material, just electricity and has a loss of 5%.

Packaging waste, including plastic film, strapping and wooden pallets are sent to landfills.

Parameter	Value (expressed in Declared Unit)
Secondary materials for installation	None
Consumption of other resources	None
Quantitative description of the type of energy (international low voltage electrical mix) and its consumption during the installation process.	3,00E-05 kwh/m <sup>2</sup>
Waste of materials on site, prior to processing of waste generated during product installation: waste of product	5% of losses Packaging waste: - Pallet 5.27E-02 kg (Landfill) - Plastic film 4.31E-03 kg (Landfill) - Strap 5.18E-04 kg (Landfill)
Direct emissions to air, soil, or water	The following are considered negligible

- B. Use Stage

This stage consists of B1 Utilization, B2 Maintenance, B3 Repair, B4 Replacement, B5 Rehabilitation, B6 In-service energy utilization and B7 In-service water utilization.

Once the installation is completed, no technical actions or operations are required during the use stages until the end of the reference service life. Therefore, waterproofing sheets have no impact at this stage.

- C End-of-Life Stage

This stage includes the following modules: C1 Deconstruction / Demolition; C2 Transportation; C3 Waste treatment and C4 Final disposal.

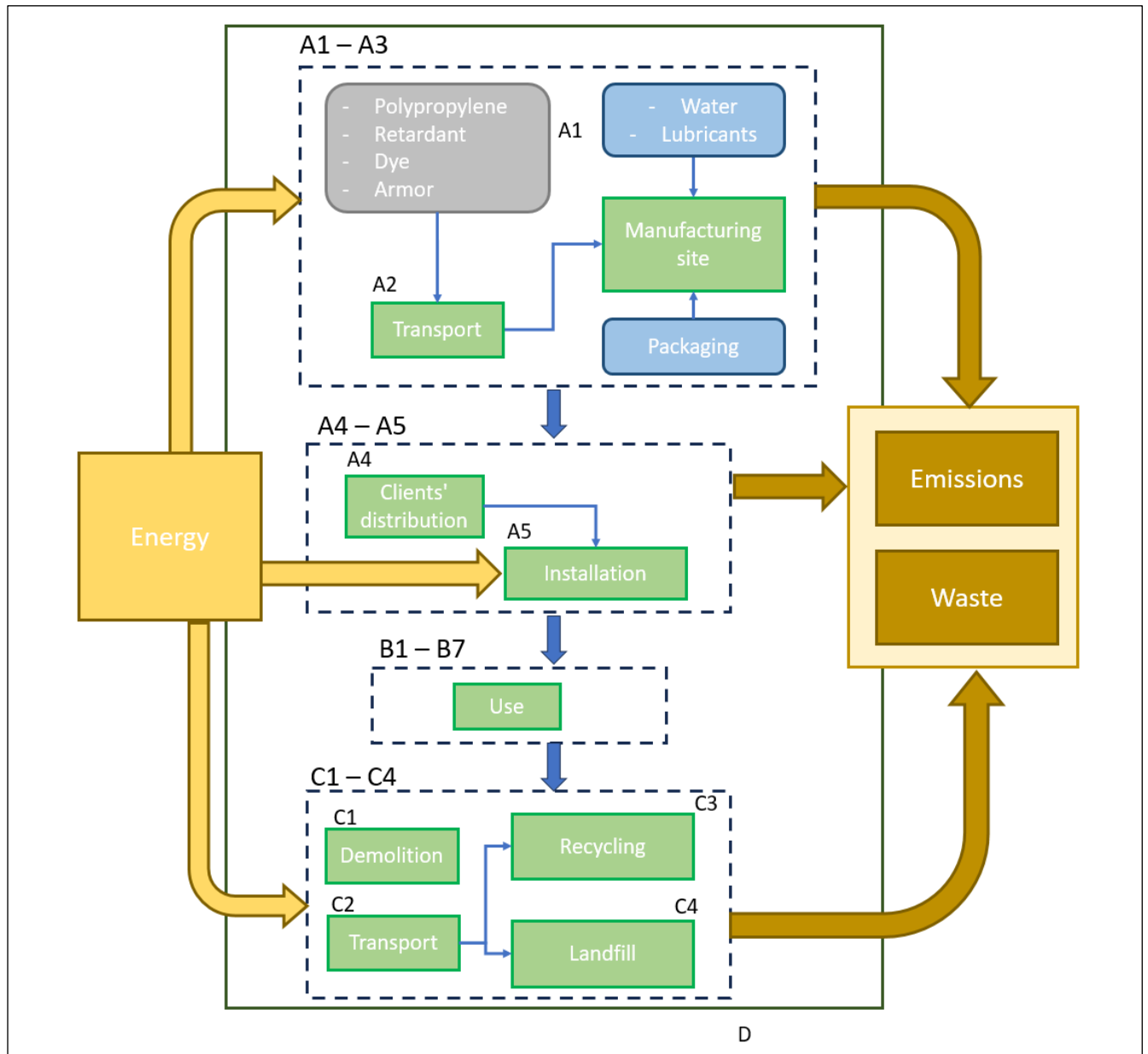
At end of life, NEXALON TPO sheets are assumed to be **100% landfilled**, as separation from the building is not feasible. Accordingly, the scenarios defined in **PCR 2019:14 – Construction products (v2.0.1)** are applied to modules **C1–C4**.

Life cycle stages	Scenarios from PCR 2019:14 v2.0.1)	Quantity	Quantity (expressed by Declared Unit)
C1. Deconstruction / Demolition	Demolition/deconstruction of steel, wood and other materials	1.1 kWh/ton of diesel	1,65E-03
C2. Transport	Transport (for products/materials not to be incinerated)	80 km; 16–32 tonne lorry (EURO 5), 50% load factor	
C3. Waste treatment for reuse, recovery or recycling	Treatment of other materials	0.8 kWh/ton of diesel	1,20E+00
C4. Final disposal (landfill)	Compaction of inert construction waste for landfill (including backfilling)	1.6 kWh/ton of diesel	2,40E-03

#### D. Benefits and burdens beyond system boundaries

It is considered that 100% of the sheet waste is disposed of in a landfill. Therefore, no additional benefits are expected outside the system boundaries, as the product is not intended for reuse, recycling, or energy recovery at end-of-life. Its impact is confined solely to the processes within the defined boundaries of this assessment.

Process flow diagram:



More information:

- The life cycle analysis study has been carried out by DANOSA GROUP with the technical support of Marcel Gómez Consultoría Ambiental.
- More information about the product: [www.danosa.es](http://www.danosa.es)

The quality of the input data has been evaluated according to its technological, temporal and geographical coverage. The representativeness of the selected processes is good, resulting in a value of 3.56 out of 5.

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

	Product stage			Distribution/ installation stage		Use stage							End-of-life stage				Beyond product life cycle	
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential	
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	EU	EU	ES	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	
Share of primary data	22%					-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-13% / 33%					-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-	-

EU: European Union; ES: Spain

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Manufacturing of product	PVC Danopol	Danosa Group	2023	Secondary data	0,2%
Generation of electricity used in manufacturing of product	Database	Ecoinvent v3.9.1	2025	Primary data	5%
Transport of raw materials to manufacturing site	Database	Ecoinvent v3.9.1	2025	Primary data	8%
Production of mineral charge	Database	Ecoinvent v3.9.1	2025	Primary data, secondary data	8%
Production of packaging and transportation to manufacturing	Database	Ecoinvent v3.9.1	2025	Primary data	0,4%
Total share of primary data, of GWP-GHG results for A1-A3					22%

## ENVIRONMENTAL PERFORMANCE

### LCA results of the product(s) - main environmental performance results

LCIA results are relative expressions and do not predict impacts on category endpoints, threshold exceedances, safety margins or risks. The following life cycle impact assessment methods have been used in SimaPro to calculate these results:

- Basic environmental impact indicators: EF Method (adapted) V3.1 / Global (2010) / with toxicity categories and CML-IA (baseline) v3.09.
- Indicators describing resource use:
  - Energy: cumulative energy demand v1.11.
  - Materials: inventory data used.
  - Freshwater: Midpoint ReCiPe (H) v1.08, category of water depletion.
  - Indicators describing waste production: EDIP 2003.

All the results presented below refer to the life cycle of 1 m<sup>2</sup> of thermoplastic polyolefin (TPO) NEXALON waterproofing sheet and its packaging, with a weight of 1.50 kg/m<sup>2</sup> and a reference life of 35 years.

Also, the biogenic carbon leaving the product system in module A5 (see Annex 2 of PCR) have been balanced out already in modules A1-A3.

Disclaimer: The use of the results of modules A1-A3 without considering the results of module C is discouraged.

## Mandatory impact category indicators according to EN 15804

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO <sub>2</sub> eq.	4,78 E+00	2,49 E-02	1,07 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	5,55 E-04	1,83 E-02	4,03 E-01	1,55 E-01	0,00 E+00
GWP-fossil	kg CO <sub>2</sub> eq.	4,87 E+00	2,49 E-02	9,91 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	5,55 E-04	1,83 E-02	4,03 E-01	1,55 E-01	0,00 E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	- 9,66 E-02	0,00 E+00	9,66 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,40 E-05	0,00 E+00	0,00 E+00
GWP-luluc	kg CO <sub>2</sub> eq.	3,74 E-03	4,87 E-07	4,39 E-07	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,27 E-08	3,59 E-07	1,65 E-05	4,04 E-06	0,00 E+00
ODP	kg CFC 11 eq.	1,33 E-06	5,37 E-10	3,78 E-11	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	8,75 E-12	3,96 E-10	6,36 E-09	1,27 E-10	0,00 E+00
AP	mol H <sup>+</sup> eq.	1,78 E-02	3,13 E-05	8,19 E-06	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	5,31 E-06	4,77 E-05	3,86 E-03	8,20 E-05	0,00 E+00
EP-freshwater	kg P eq.	1,15 E-04	1,95 E-08	1,24 E-08	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	4,75 E-10	1,44 E-08	3,45 E-07	1,08 E-07	0,00 E+00
EP-marine	kg N eq.	3,18 E-03	7,75 E-06	6,40 E-06	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,49 E-06	1,87 E-05	1,81 E-03	6,68 E-05	0,00 E+00
EP-terrestrial	mol N eq.	3,50 E-02	7,55 E-05	3,40 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,71 E-05	1,98 E-04	1,97 E-02	3,80 E-04	0,00 E+00
POCP	kg NMVOC eq.	1,49 E-02	5,87 E-05	1,54 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	7,98 E-06	7,70 E-05	5,81 E-03	1,53 E-04	0,00 E+00
ADP-minerals&metals*	kg Sb eq.	2,91 E-06	8,55 E-10	7,33 E-11	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,33 E-11	6,30 E-10	1,70 E-08	3,60 E-10	0,00 E+00
ADP-fossil*	MJ	1,19 E+02	3,31 E-01	2,71 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	7,30 E-03	2,44 E-01	5,31 E+00	1,22 E-01	0,00 E+00
WDP*	m <sup>3</sup>	2,13 E+00	3,03 E-04	5,71 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	9,35 E-06	2,23 E-04	6,80 E-03	4,24 E-04	0,00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; 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 Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

\* Disclaimer: 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.

The EPD shall include a statement, in connection to the results of the impact indicators: "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 following statement, if the EPD covers the end-of-life stage: "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)." For services, "A1-A3" shall be replaced by "A1-A5".

If results based on an old EF version is used to develop an EPD, the EPD shall include a statement that clarifies that an EPD based on an old EF version has been used as a data source, and that this was assessed to yield identical or conservative results compared to fully using the current EF version.

If biogenic carbon leaving the product system in module A5 (see Annex 2 of PCR) or recovered energy leaving the product system in modules A5 or C (see Annex 3 of PCR) have been balanced out already in modules A1-A3, a statement in this regard shall be included.

## Additional mandatory and voluntary impact category indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	4,88 E+00	2,49 E-02	1,36 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	5,55 E-04	1,83 E-02	4,03 E-01	1,56 E-01	0,00 E+00

Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017

## Resource use indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1,27 E+02	3,52 E-01	2,88 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	7,76 E-03	2,59 E-01	5,64 E+00	1,30 E-01	0,00 E+00
PERM	MJ	8,03 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PERT	MJ	1,27 E+02	3,52 E-01	2,88 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	7,76 E-03	2,59 E-01	5,64 E+00	1,30 E-01	0,00 E+00
PENRE	MJ	9,19 E+01	3,52 E-01	2,88 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	7,76 E-03	2,59 E-01	5,64 E+00	1,30 E-01	0,00 E+00
PENRM	MJ	3,55 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PENRT	MJ	1,27 E+02	3,52 E-01	2,88 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	7,76 E-03	2,59 E-01	5,64 E+00	1,30 E-01	0,00 E+00
SM	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
RSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
NRSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
FW	m <sup>3</sup>	3,68 E-02	1,38 E-05	2,27 E-06	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	3,62 E-07	1,02 E-05	2,64 E-04	1,73 E-05	0,00 E+00

Acronyms  
 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

<sup>1</sup> This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO<sub>2</sub> is set to zero.

## Waste indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	5,26 E-04	2,18 E-06	1,67 E-07	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	4,88 E-08	1,61 E-06	3,55 E-05	6,82 E-07	0,00 E+00
Non-hazardous waste disposed	kg	2,13 E-01	1,61 E-05	1,33 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	5,38 E-07	1,19 E-05	3,92 E-04	1,50 E+00	0,00 E+00
Radioactive waste disposed	kg	1,21 E-04	2,84 E-08	9,09 E-09	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	3,56 E-10	2,09 E-08	2,59 E-07	6,77 E-08	0,00 E+00

## Output flow indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Material for recycling	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Materials for energy recovery	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Exported energy, electricity	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Exported energy, thermal	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

## Biogenic carbon content information

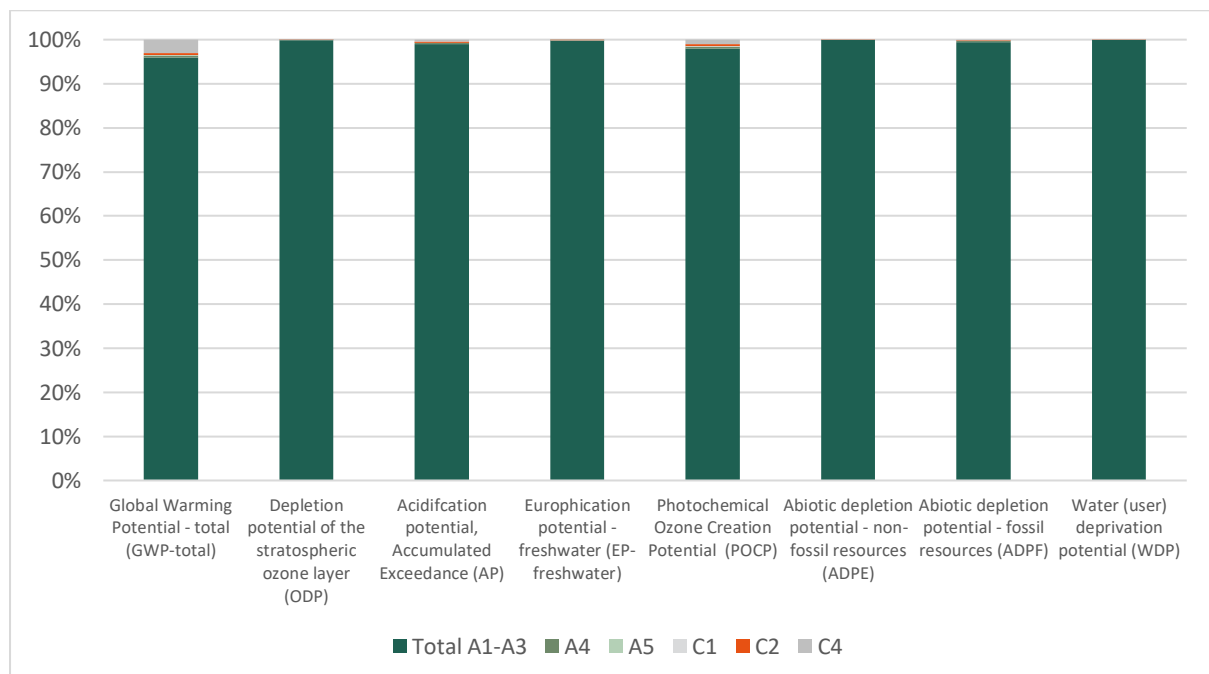
Results by declaration unit		
Biogenic carbon content	Unit	Quantity
Biogenic carbon content in the product	kg C	0
Biogenic carbon content in the enclosed packaging.	kg C	2.64E-02

## LCA interpretation

This section analyzes the potential impacts of the life cycle stages of the 1 m<sup>2</sup> of NEXALON TPO compared to the total impacts and identifies critical points during the life cycle of the products.

The life cycle impacts of the 1 m<sup>2</sup> of NEXALON TPO are influenced by the A1-A3 stage of the product across all impact categories. A1-A3 exhibits the highest representation across all impact categories, ranging from 96% (Global warming) to 99% (Ozone depletion, Eutrophication, Abiotic depletion – non fossils, Abiotic depletion – fossil and Water deprivation).

In contrast, later stages, such as transportation (A4), installation (A5), demolition (C1), recycling (C3) and final disposal (C4), contribute marginally to the impact categories, with values generally below 1% in most cases. except for the Global Warming category in C4 with a representation of 3.2%.



## Additional LCA results (other environmental performance results) of the product(s)

The following presents the result variability of the other three products for stages A1–A3, using NEXALON TPO 1.5 as the reference.

Environmental impacts results variability					
Mandatory impact category indicators	Unit	NEXALON TPO 1.5	NEXALON TPO 1.2	NEXALON TPO 1.8	NEXALON TPO 2.0
GWP-GHG	kg CO <sub>2</sub> eq.	4,65E+00	-13%	31%	33%
GWP - Total	kg CO <sub>2</sub> eq.	1,26E-06	-13%	31%	33%
ODP	kg CFC 11 eq.	1,70E-02	-13%	31%	33%
AP	mol H <sup>+</sup> eq.	1,09E-04	-13%	31%	34%
EP – Freshwater	kg P eq.	1,42E-02	-13%	31%	34%
POCP	kg NMVOC eq.	2,77E-06	-13%	31%	33%
ADPE	kg Sb eq.	1,13E+02	-13%	31%	33%
ADPF	MJ	2,03E+00	-13%	31%	33%
WUD	m <sup>3</sup>	4,65E+00	-13%	31%	33%

## ADDITIONAL ENVIRONMENTAL INFORMATION

None

## ADDITIONAL SOCIAL AND ECONOMIC INFORMATION

None

## INFORMATION RELATED TO SECTOR EPD

(If this is a sector EPD, the section shall be added)

This EPD is not sectoral.

## ABBREVIATIONS

Abbreviation	Definition
<b>General Abbreviations</b>	
ADP-fossil	Abiotic depletion potential — fossil resources
ADP-minerals&metals	Abiotic depletion potential — mineral and metal resources
AP	Acidification potential (Accumulated Exceedance)
CFC	Chlorofluorocarbons
CO <sub>2</sub>	Carbon dioxide equivalents
EF	Environmental Footprint
EN	European Standard (European Norm)
EP	Ethylene-Propylene
EP-freshwater	Eutrophication potential — freshwater
EP-marine	Eutrophication potential — marine
EP-terrestrial	Eutrophication potential — terrestrial
ES	Spain
EU	European Union
FW	Use of net fresh water
GPI	General Programme Instructions
GWP-biogenic	Global Warming Potential — biogenic
GWP-fossil	Global Warming Potential — fossil
GWP-GHG	Global Warming Potential — greenhouse gases (GHG)
GWP-luluc	Global Warming Potential — land use and land-use change
GWP-total	Global Warming Potential — total
HS	Commercial designation of the series for mechanical fastening
ISO	International Organization for Standardization
kWh	Kilowatt-hour
m <sup>2</sup>	Square metre
m <sup>3</sup>	Cubic metre
MJ	Megajoule
ND	Not Declared
NMVOG	Non-methane volatile organic compounds
NRSF	Use of non-renewable secondary fuels
ODP	Stratospheric ozone depletion potential
PENRE	Use of non-renewable primary energy excluding as raw materials
PENRM	Use of non-renewable primary energy used as raw materials
PENRT	Total use of non-renewable primary energy
PERE	Use of renewable primary energy excluding as raw materials
PERM	Use of renewable primary energy used as raw materials
PERT	Total use of renewable primary energy
POCP	Formation potential of tropospheric ozone
PVC	Polyvinyl chloride
RSF	Use of renewable secondary fuels
Sb	Antimony
SM	Use of secondary material
SVHC	Substances of Very High Concern
TPO	Thermoplastic Polyolefin
UN CPC	United Nations Central Product Classification
UV	Ultraviolet radiation

## REFERENCES

- a) General Programme Instructions of International EPD System. Version 5.0.
- b) PCR 2019:14. Construction products. Version 2.0.1
- c) *Other references to be added, e.g. c-PCR used*
- d) General Programme Instructions of the International EPD® System. Version 4.0.
- e) ISO 14040:2006. Environmental management -- Life cycle assessment -- Principles and framework
- f) ISO 14044:2006. Environmental management -- Life cycle assessment -- Requirements
- g) and guidelines
- h) ISO 14025:2006. Environmental labels and declarations -- Type III environmental
- i) declarations -- Principles and procedures
- j) EN 15804:2012 + A2:2019/AC:2021– Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.
- k) EPD-SP-00691. DANOPOL PVC WATERPROOFING SHEET
- l) LCA DANOSA. report for NEXALON TPO sheet

## VERSION HISTORY

### Original Version of the EPD, 2025-11-05

### Revision 1. 2025-11-17

Differences versus the previously published version:

- Editorial changes: the commercial name of the product has been changed from TPO DANOPLY HS to NEXALON TPO.

