

Environmental Product Declaration



Compliant with ISO 14025 and UNE-EN 15804:2012+A2:2019

**DANOFELT PY 120, PY 150, PY 200, PY 300 and PY 500
polyester geotextiles.**

Danosa, Derivados Asfálticos Normalizados, S.A.

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General information

Program information

Program:	The International EPD® System
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CEN EN 15804 serves as the basis for the Product Category Rules (PCR).
Product Category Rule (PCR): Construction Products, PCR 2019:14. Version 1.11.
The PCR review was Performed by: The Technical Committee of the International EPD® System. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel can be contacted via www.environdec.com/contact
Independent verification of the declaration and information, according to ISO 14025:2010 ☐ EPD process certification ☒ EPD verification
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Construction product EPDs may not be comparable if they do not comply with EN 15804.

Environmental claims for products within the same product category from different programs may not be comparable.

The verifier and the operator of the program have no responsibility for the legality of the product.



Company information

Owner of the EPD: DANOSA, Derivados Asfálticos Normalizados, S.A

Contact: DANOSA SPAIN - +34 949 888 210 - info@danosa.com

DANOSA is a manufacturing company, specialized 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 as one of the reference companies in the Spanish and European market, 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, maximizing the energy efficiency of buildings. In addition, it has ISO 9001 and ISO 14001 quality and environmental certifications, 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, making it possible for these wastes to become useful raw materials for the manufacture of new products.

This document will be used for B2B communication and may be considered global in scope.

Location of the production center: Polígono Industrial Sector 9, 19290 Fontanar (Guadalajara) Spain.

Product information

Product name: DANOFELT® product includes five types of polyester geotextiles for the construction sector: PY 120. PY 150. PY 200. PY 300 and PY 500.

Product description: Polyester geotextiles are specially designed with excellent mechanical (protection, separation) and hydraulic (filtration) performance.

These products are mainly used in building construction, as protection of waterproofing sheets prior to the placement of heavy protection, as well as an auxiliary separation and filtration sheet.

For application in: roads, traffic routes, railways, earthworks, foundations, containment structures, drainage systems, erosion control, reservoirs, dams, canals, tunnels, subway structures, solid waste landfills and liquid waste container projects.



DANOFELT PY

DANOFELT PY 120

Non-woven geotextile, made from 120 (+10%;-15%) g/m² polyester staple fiber, mechanically bonded by needle punching without the application of chemical binders, pressure or heat.

Field of application:

- As a draining layer, facilitating water evacuation.
- As a filtering layer, preventing the passage of fines and clogging of the system.
- As a protective layer of sheets against mechanical damage and puncturing.
- As a separating layer, avoiding contact between layers of different nature, preventing their mixing and guaranteeing the maintenance of their initial performance.

Advantages and Benefits:

- Provides great mechanical protection.
- Increases the lifespan of the elements it protects on site.
- High tensile strength.
- High resistance to punching.
- High durability.
- Maintains intact the mechanical and hydraulic properties of the materials it separates.
- Allows adaptation to any type of geometry.
- Resistant to active substances in the soil and climatic inclemency.

Technical data:



Concept	Value	Standard
In-plane water flow capacity (m ² /s) 20 kPa	4.5 Exp-7, -0.2 Exp-7	UNE EN ISO 12958
Density (kg/m ³)	70	-
Protection effectiveness (kN/m ²)	6.0 Exp3, -0.3 Exp3	UNE-EN 13719
Elongation at break longitudinal (%)	100 ±40	UNE EN ISO 10319
Elongation at transverse break (%)	100 ±40	-
Thickness a 2kPa (mm)	1.70, ±0.20	-
Medium mass (g/m ²)	120 (+10%;-15%)	UNE EN ISO 9864
Mass per unit area (nominal) (kg/m ²)	120	-
Opening size (µm)	90, ±20	UNE EN ISO 12956
Dynamic drilling (cone drop) (mm)	40, +5	UNE EN ISO 13433
Water permeability (L/m ² /s)	0.0561, -0.005	UNE EN ISO 11058
Water permeability (m/s)	0.0561, -0.005	UNE EN ISO 11058
Tranversal tensile strength (kN/m)	1.0, -0.5	-
Hazardous substances	PND	-

Figure 1 – Technical data of DANOFELT PY 120.

Additional technical data

Concept	Value	Standard
Thickness at 200kPa (mm)	0.45, ±0.20	-
Thickness at 20kPa (mm)	0.85, ± 0.20	UNE EN ISO 9863-1
Static punching (CBR) (kN)	0.3, -0.2	UNE EN ISO 12236

Figure 4 – Additional technical data of DANOFELT PY 120.

DANOFELT PY 150

Nonwoven geotextile, made from 150 (+10%;-15%) g/m² polyester staple fiber, mechanically bonded by needle punching without the application of chemical binders, pressure or heat.

Field of application:

- As a draining layer, facilitating water evacuation.
- As a filtering layer, preventing the passage of fines and clogging of the system.
- As a protective layer of sheets against mechanical damage and puncturing.
- As a separating layer, avoiding contact between layers of different nature, preventing their mixing and guaranteeing the maintenance of their initial performance.

Advantages and Benefits:

- Provides great mechanical protection.



- Increases the lifespan of the elements it protects on site.
- High tensile strength.
- High resistance to punching.
- High durability.
- Maintains intact the mechanical and hydraulic properties of the materials it separates.
- Allows adaptation to any type of geometry.
- Resistant to active substances in the soil and climatic inclemency.

Technical data:

Concept	Value	Standard
In-plane water flow capacity (m ² /s) 20 kPa	2.7 Exp-7, -0.2 Exp-7	UNE EN ISO 12958
Density (kg/m ³)	79	-
Protection effectiveness (kN/m ²)	9.0 Exp3, -0.3 Exp3	UNE-EN 13719
Elongation at break longitudinal (%)	105 ±40	UNE EN ISO 10319
Elongation at transverse break (%)	105 ±40	-
Thickness a 2kPa (mm)	1.90, ±0.20	-
Medium mass (g/m ²)	150 (+10%:-15%)	UNE EN ISO 9864
Mass per unit area (nominal) (kg/m ²)	150	-
Opening size (µm)	90, ±20	UNE EN ISO 12956
Dynamic drilling (cone drop) (mm)	35, +5	UNE EN ISO 13433
Water permeability (L/m ² /s)	0.04468, -0.005	UNE EN ISO 11058
Water permeability (m/s)	0.04468, -0.005	UNE EN ISO 11058
Tranversal tensile strength (kN/m)	1.3, -0.4	-
Hazardous substances	PND	-

Figure 5 - DANOFELT PY 150 technical data.

Additional technical data:

Concept	Value	Standard
Thickness at 200kPa (mm)	0.5, ±0.20	-
Thickness at 20kPa (mm)	1.0, ±0.20	UNE EN ISO 9863-1
Static punching (CBR) (kN)	0.4, -0.2	UNE EN ISO 12236

Figure 6 - Additional technical data of DANOFELT PY 150.



DANOFELT PY 200

Nonwoven geotextile, made from 200 (+10%;-15%) g/m² polyester staple fiber, mechanically bonded by needle punching without the application of chemical binders, pressure or heat.

Field of application:

- As a draining layer, facilitating water evacuation.
- As a filtering layer, preventing the passage of fines and clogging of the system.
- As a protective layer of sheets against mechanical damage and puncturing.
- As a separating layer, avoiding contact between layers of different nature, preventing their mixing and guaranteeing the maintenance of their initial performance.

Advantages and Benefits:

- Provides great mechanical protection.
- Increases the lifespan of the elements it protects on site.
- High tensile strength.
- High resistance to punching.
- High durability.
- Maintains intact the mechanical and hydraulic properties of the materials it separates.
- Allows adaptation to any type of geometry.
- Resistant to active substances in the soil and weather conditions.

Technical data:

Concept	Value	Standard
In-plane water flow capacity (m ² /s) 20 kPa	1.57 Exp-6, -0.2 Exp-7	UNE EN ISO 12958
Density (kg/m ³)	95	-
Protection effectiveness (kN/m ²)	12.0 Exp3, -0.3 Exp3	UNE-EN 13719
Elongation at break longitudinal (%)	110, ±40	UNE EN ISO 10319
Elongation at transverse break (%)	110, ±40	-
Thickness a 2kPa (mm)	2.10, ±0.20	-
Medium mass (g/m ²)	200 (+10%;-20%)	UNE EN ISO 9864
Mass per unit area (nominal) (kg/m ²)	200	-
Opening size (µm)	90, ±20	UNE EN ISO 12956
Dynamic drilling (cone drop) (mm)	25, +3	UNE EN ISO 13433
Water permeability (l/m ² /s)	0.03731, -0.005	UNE EN ISO 11058
Water permeability (m/s)	0.03731, -0.005	UNE EN ISO 11058
Tranversal tensile strength (kN/m)	2.3, -0.3	-
Hazardous substances	PND	-

Figure 7 - Technical data of DANOFELT PY 200.



Additional technical data:

Concept	Value	Standard
Thickness at 200kPa (mm)	0.8, ±0.20	-
Thickness at 20kPa (mm)	1,3, ±0,20	UNE EN ISO 9863-1
Static punching (CBR) (kN)	0.6, -0.2	UNE EN ISO 12236

Figure 8 - Additional technical data of DANOFELT PY 200

DANOFELT PY 300

Nonwoven geotextile, made of 300 (+10%;-15%) g/m² polyester staple fiber, mechanically bonded by needle punching without the application of chemical binders, pressure or heat.

Field of application:

- As a draining layer, facilitating water evacuation.
- As a filtering layer, preventing the passage of fines and clogging of the system.
- As a protective layer of sheets against mechanical damage and puncturing.
- As a separating layer, avoiding contact between layers of different nature, preventing their mixing and guaranteeing the maintenance of their initial performance.

Advantages and Benefits:

- Provides great mechanical protection.
- Increases the lifespan of the elements it protects on site.
- High tensile strength.
- High resistance to punching.
- High durability.
- Maintains intact the mechanical and hydraulic properties of the materials it separates.
- Allows adaptation to any type of geometry.
- Resistant to active substances in the soil and weather conditions.

Technical data:



Concept	Value	Standard
In-plane water flow capacity (m ² /s) 20 kPa	1.9 Exp-6, -0.2 Exp-7	UNE EN ISO 12958
Density (kg/m ³)	115	-
Protection effectiveness (kN/m ²)	15.5 Exp3, -0.3 Exp3	PrEN 13719
Elongation at break longitudinal (%)	120 ±30	UNE EN ISO 10319
Elongation at transverse break (%)	120 ±30	-
Thickness a 2kPa (mm)	2.60, ±0.20	-
Medium mass (g/m ²)	300 (+10%;-15%)	UNE EN 965
Mass per unit area (nominal) (kg/m ²)	300	-
Opening size (µm)	90, ±20	UNE EN ISO 12956
Dynamic drilling (cone drop) (mm)	8, +3	UNE EN ISO 13433
Water permeability (L/m ² /s)	0.03154, -0.005	UNE EN ISO 11058
Water permeability (m/s)	0.03154, -0.005	UNE EN ISO 11058
Tranversal tensile strength (kN/m)	4.4, -0.4	-
Hazardous substances	PND	-

Figure 9 - Technical data of DANOFELT PY 300.

Additional technical data:

Concept	Value	Standard
Thickness at 200kPa (mm)	1.0, ±0.20	-
Thickness at 20kPa (mm)	2.1, ±0.20	UNE EN ISO 9863-1
Static punching (CBR) (kN)	1.1, -0.3	UNE EN ISO 12236

Figure 10 - Additional technical data of DANOFELT PY 300.

DANOFELT PY 500

Nonwoven geotextile, made from 500 (+10%;-15%) g/m² polyester staple fiber, mechanically bonded by needle punching without the application of chemical binders, pressure or heat.

Field of application:

- As a draining layer, facilitating water evacuation.
- As a filtering layer, preventing the passage of fines and clogging of the system.
- As a protective layer of sheets against mechanical damage and puncturing.
- As a separating layer, avoiding contact between layers of different nature, preventing their mixing and guaranteeing the maintenance of their initial performance.

Advantages and Benefits:



- Provides great mechanical protection.
- Increases the lifespan of the elements it protects on site.
- High tensile strength.
- High resistance to punching.
- High durability.
- Maintains intact the mechanical and hydraulic properties of the materials it separates.
- Allows adaptation to any type of geometry.
- Resistant to active substances in the soil and weather conditions.

Technical data:

Concept	Value	Standard
In-plane water flow capacity (m ² /s) 20 kPa	4.00 Exp-6, -0.1 Exp-7	UNE EN ISO 12958
Density (kg/m ³)	131	-
Protection effectiveness (kN/m ²)	19.0 Exp3 -0.3 Exp3	UNE-EN 13719
Elongation at break longitudinal (%)	120 ±30	UNE EN ISO 10319
Elongation at transverse break (%)	120 ±30	-
Thickness a 2kPa (mm)	3.80, ±0.20	-
Medium mass (g/m ²)	500 (+10%;-15%)	UNE EN ISO 9864
Mass per unit area (nominal) (kg/m ²)	500	-
Opening size (µm)	60, ±20	UNE EN ISO 12956
Dynamic drilling (cone drop) (mm)	0, +2	UNE EN ISO 13433
Water permeability (L/m ² /s)	0.02371, -0.005	UNE EN ISO 11058
Water permeability (m/s)	0.02371, -0.005	UNE EN ISO 11058
Tranversal tensile strength (kN/m)	11.0, -1.0	-
Hazardous substances	PND	-

Figure 11 - Technical data of DANOFELT PY 500.

Additional technical data:

Concept	Value	Standard
Thickness at 200kPa (mm)	1.8, ±0.20	-
Thickness at 20kPa (mm)	3,0, ±0,20	UNE EN ISO 9863-1
Static punching (CBR) (kN)	1.8, -0.2	UNE EN ISO 12236

Figure 12 - Additional technical data of DANOFELT PY 500.

CPC Code: 36950 Unspecified articles of plastics for construction.



LCA information

Declared unit:

- **1 kg of polyester geotextile** installed and with an expected service life of 50 years.

For information purposes, the mass per square meter conversion factor is reported as:

- 0.12 kg/m² DANOFEEL PY 120.
- 0.15 kg/m² DANOFEEL PY 150.
- 0.20 kg/m² DANOFEEL PY 200.
- 0.30 kg/m² DANOFEEL PY 300.
- 0.50 kg/m² DANOFEEL PY 500.

Reference service life: The service life of the product is considered to be the same as that of the building as it is a product that is incorporated into the building's installations, i.e., 50 years.

Temporal representativeness: The primary data were obtained from the production center and refer to the year 2021.

Databases and software used: Ecoinvent v3.8 (assignment, cut by classification) and SimaPro v9.3.

Description of system boundaries: from cradle to door with options, modules C1-C4, module D (A1-A3 + A4-A5 + C + D).

Modularity and polluter payer principles have been followed. The following processes have been excluded:

- Manufacture of equipment used in production, buildings or any other capital goods;
- The 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. Those inputs and outputs, for which data are not available, that together represent less than 5% of the mass, such as packaging waste of auxiliary materials, have not been considered.

Whenever possible, allocation has been avoided. Where necessary (energy, waste generation) a mass allocation has been used, according to the weight in kg of the product. The consumption of the specific process was measured with specific meters.

All primary data were obtained from Danosa. Secondary data were obtained from the Ecoinvent v3.8 database.

The scenarios included are currently in use and are representative of one of the most likely alternatives.

A1. Extraction of raw materials

Use of natural resources and manufacture of the recycled raw material: polyester.

This stage includes the production of the energy consumed in the manufacturing stage (A3).

A2. Transport

Transport of all raw materials considered in module A1, from the extraction, production and treatment site to the factory gate.

A3. Manufacturing



This module considers all the manufacturing processes of nonwoven geotextiles, made of polyester fiber mechanically bonded by needle punching without the application of chemical binders, pressure or heat, including the consumption of materials for packaging, as well as the treatment of the waste generated.

The manufacture of Geotextiles consists of the following phases:

- Opening or unpacking: in which the separation or opening of the fibers takes place.
- Carding: the purpose of carding is the disintegration of the fiber, allowing it to be oriented in its own direction in order to generate a continuous sheet.
- Folding: the sheet obtained in the carding is folded to reach the desired grammage.
- Punching or needling: in which the mechanical binding of the sheet is achieved through its own fibers.
- The geotextiles are distributed packed in plastic film, without the use of pallets.

The primary data used were obtained from the production plant itself and are representative of Danosa's geotextile production.

A4. Distribution

The scenarios included are currently in use and are representative of one of the most likely alternatives.

Transportation of the product from the production plant to the installation site.

PARAMETER	VALUE (expressed in declared unit)				
Type of fuel and consumption of the vehicle or type of means of transportation used	National distribution: 16-32 ton Euro 4 truck with a diesel consumption of 0.38 liters per km.			International distribution: 16-32 ton Euro 4 truck with a diesel consumption of 0.38 liters per km and Transoceanic ship.	
Distance	National and international distribution: 501.51 km (on road)			National and international distribution: 148.50 km (by ship)	
Capacity of use (including unladen transport return)	% assumed in Ecoinvent				
Bulk density of the transported product: geotextiles	70 kg/m3 PY 120	79 kg/m3 PY 150	95 kg/m3 PY 200	115 kg/m3 PY 300	131 kg/m3 PY 500
Volume use capacity factor	1 (default)				

A5. Installation:

This module includes the consumption of auxiliary materials (in addition to the product), as well as the management of possible waste generated during this information module.

Preparation of the substrate:

- The surface of the base substrate must be resistant, uniform, compact and dry.
- The singular points must also be prepared before starting the laying of the geotextile: chamfers or chamfers in meetings with vertical faces, reinforcements, joints and other singular points.

Laying the geotextile

- Once the ground or substrate has been leveled, the roll of DANOFELT PY is spread. The second roll is then mounted, leaving a minimum overlap of 20 cm. Depending on the final application, it is recommended to fix the joint by stitching or stapling.
- The materials should be poured without damaging the geotextile. In the same way, the spreading of the different layers should be done in such a way that the spreading and compacting equipment does not circulate at any time on the surface of the geotextile, and



always in such a way that the direction of advance of the spreading machinery of the upper layer is done in such a way that it does not affect the overlap of the geotextile layers.

PARAMETER	VALUE (expressed in declared unit)				
Secondary materials for installation: Not applicable	NA	NA	NA	NA	NA
Consumption of other resources	None				
Quantitative description of the type of energy (regional mix) and its consumption during the installation process.	NA				
Waste of materials on site, prior to processing of waste generated during installation of the product: packaging to landfill.	7.78E-03 kg PY 120	8.78E-03 kg PY 150	1.06E-02 kg PY 200	1.28E-02 kg PY 300	1.46E-02 kg PY 500
Direct emissions to air, land or water	The following are considered negligible				

B. Use stage

Being a passive product within a construction, the use stage (including modules B1 to B7) is considered negligible.

Demolition (C1)

It is considered a joint demolition of the building, so the contribution of the demolition in concrete of the evaluated geotextiles is considered not relevant.

Transportation (C2)

Once the product has been uninstalled, it is transported 50 km in 7.5-16 ton trucks from the construction site to the landfill.

Waste treatment for reuse, recovery or recycling (C3)

Waste from the system is considered unprocessed prior to disposal.

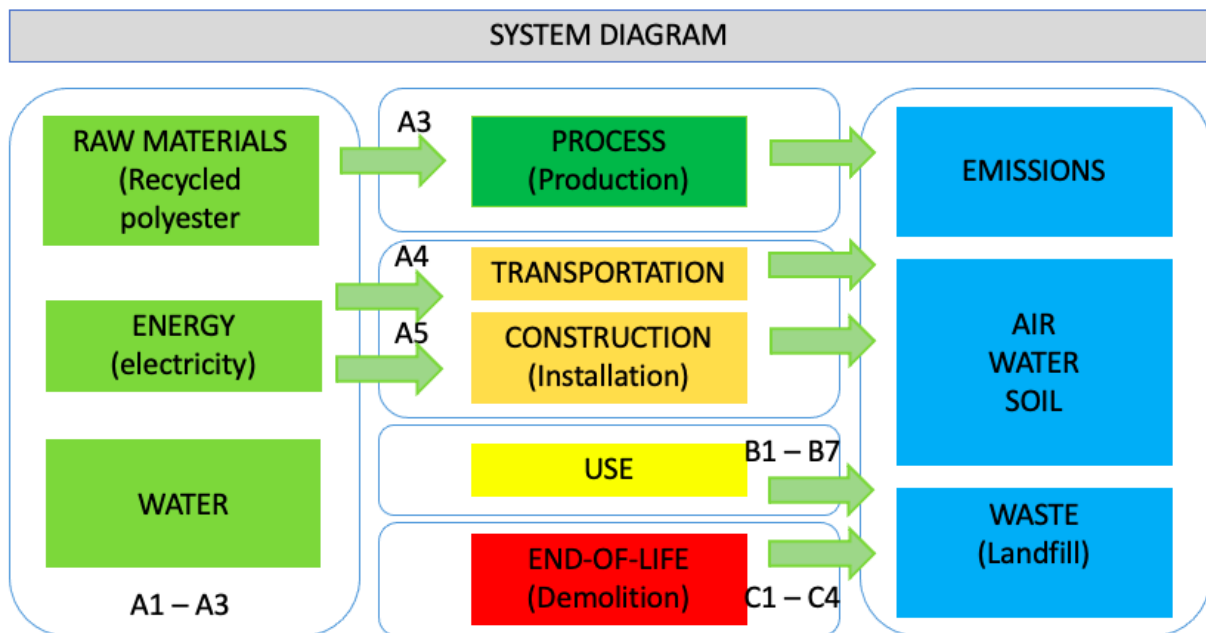
Final disposal (C4)

The entire system waste (product and auxiliary material) is deposited in a landfill.

PARAMETER	VALUE (expressed in declared unit)
Waste collection process specified by type	100% to landfill, collected and mixed with the rest of the construction waste.
Recovery system specified by type	Recovery system specified by type
Specified discharge by type	100% landfill
Assumptions for scenario development	The waste from demolition of the products is transported 50 km by 7.5-16 ton Euro 4 trucks to the final treatment or deposit site.

Benefits of recycling (module D)

Although module D has been calculated, there are no benefits from recycling as all the product is disposed of in landfill as a mixture of construction products. 100% of the weight is sent to landfill.



Additional information

- The life cycle analysis study has been carried out by DANOSA with the technical support of Marcel Gómez Consultoría Ambiental.
- The study covers a minimum of 95% of the materials and energy for each module evaluated, and at least 99% of the total use of materials and energy for each unit process.
- More product information: www.danosa.es
- The quality of the input data has been assessed according to its technological, temporal and geographical coverage. The representativeness of the selected processes is considered to be good, resulting in a value of 3.55 out of 5.

Declared modules, geographical scope, specific data and data variation.



	Product Stage			Construct ion Stage	Stage of Use								End-of-life stage				Resource recovery stage	
	Supply of Raw Materials	Transportation	Manufacturing	Transportation	Construction - Installation	Use	Maintenance	Repair	Replacement	Rehabilitation	Operational Energy Use	Operational Water Use	Deconstruction - demolition	Transportation	Waste Treatment	Waste Disposal	Reuse Potential - Recovery - Recycling.	
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		
Declared modules	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Geograph ical location	GL O	GL O	ES	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU		EU
Specific data	>90% GWP-GHG					-	-	-	-	-	-	-	-	-	-	-		-
Variation - products	Variation of declared impact products <10% - for each product group.					-	-	-	-	-	-	-	-	-	-	-		-

Content information

DANOFELT PY 120; PY 150; PY 200; PY 300 y PY 500

Product components	Weight, kg	Post-consumer recycled material (%)	Renewable material (%)
Recycled polyester	1.00	100 %	0 %
Total weight	1.00	100 %	0 %
Packaging materials	Weight, kg	Weight (%regarding the product)	
PVC caps	4.40E-04	0.04 %	
Plastic film	1.66E-03	0.17 %	
Mandrel, cardboard	5.68E-03	0.57 %	

The origin of the recycled material is post-consumer PET bottles and post-industrial yarn and fabric waste.

No substance in the product above 0.10% by weight is present on the "List of potentially hazardous substances (SVHC) candidates for authorization under REACH legislation.



Environmental information

The results are relative expressions and do not predict impacts on endpoint categories, exceedance of certain levels, safety margins or risks. The calculation and impact methodologies are in accordance with UNE-EN 15804:2014+A2:2019 and the PCR, described at <https://www.environdec.com/resources/indicators>.

DANOFELT PY 120. PY 150. PY 200. PY 300 and PY 500

Environmental Impacts

Indicator	Unit	Results per declared unit														
		Manufacturing	Construction			Use							End-of-life			
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change - fossil (GWP-fossil)	kg CO2 eq	7.44E-01	3.54E-02	1.09E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.80E-03	0.00	5.27E-03	0.00
Climate Change - biogenic (GWP-biogenic)	kg CO2 eq	5.16E-04	1.20E-05	6.43E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86E-06	0.00	7.97E-05	0.00
Climate change - land use and land use changes (GWP-luluc)	kg CO2 eq	8.21E-04	3.08E-07	1.54E-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.05E-08	0.00	1.91E-06	0.00
Climate change - total (GWP-total)	kg CO2 eq	7.45E-01	3.54E-02	1.10E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.81E-03	0.00	5.35E-03	0.00
Ozone layer depletion (ODP)	kg CFC11 eq	6.93E-08	8.70E-09	2.34E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07E-09	0.00	9.36E-10	0.00
Acidification (AP)	mol H+ eq	7.68E-03	1.15E-04	6.12E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.96E-05	0.00	4.91E-05	0.00
Eutrophication of freshwater (EP-freshwater)	kg P eq	2.53E-05	1.89E-08	5.28E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.46E-09	0.00	6.33E-08	0.00
Eutrophication of marine water (EP-marine)	kg N eq	1.85E-03	2.25E-05	2.31E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.31E-06	0.00	2.03E-05	0.00
Terrestrial Eutrophication (EP-terrestrial)	mol N eq	2.05E-02	2.50E-04	2.53E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03E-04	0.00	2.23E-04	0.00
Photochemical ozone formation (POCP)	kg NMVOC eq	5.32E-03	7.64E-05	6.97E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.80E-05	0.00	6.16E-05	0.00
Depletion of abiotic resources - minerals and metals (ADP-minerals & metals)	kg Sb eq	2.06E-08	1.56E-09	4.81E-12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.79E-10	0.00	2.40E-10	0.00
Depletion of abiotic resources - fossil fuels (ADP-fossil)	MJ	8.58E+00	5.20E-01	1.51E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24E-01	0.00	7.01E-02	0.00
Water Consumption (WDP)*	m3 depriv.	9.58E-02	-8.71E-05	1.20E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-2.07E-05	0.00	1.75E-04	0.00

* Disclaimer: The results of this Environmental Impact Indicator should be used with caution as the uncertainties of these results are high or experience with the indicator is limited.

* Additional environmental indicators from EN 15804:2012+A2:2019 are not stated in this EPD.



Indicator	Unit	Results per declared unit														Module
		Manufacturing A1-A3	Construction		Use							End-of-life				
			A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Global Warming Potential GWP-GHG	kg CO2 eq	7.38E-01	3.52E-02	1.08E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.74E-03	0.00	5.20E-03	0.00

Use of resources

Indicator	Unit	Results per declared unit														Module
		Manufacturing	Construction		Use							End-of-life				
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Renewable primary energy use excluding renewable primary energy resources used as feedstock	MJ, net calorific value	4.55E-01	7.93E-04	1.43E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89E-04	0.00	1.65E-03	0.00
Use of renewable primary energy used as raw material	MJ, net calorific value	5.41E-03	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Total renewable primary energy use (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	4.60E-01	7.93E-04	1.43E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89E-04	0.00	1.65E-03	0.00
Non-renewable primary energy use, excluding non-renewable primary energy resources used as raw materials	MJ, net calorific value	9.06E+00	5.52E-01	1.60E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31E-01	0.00	7.45E-02	0.00
Use of non-renewable primary energy used as raw material	MJ, net calorific value	9.12E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Total non-renewable primary energy use (primary energy and renewable primary energy resources used as raw material)	MJ, net calorific value	1.82E+01	5.52E-01	1.60E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31E-01	0.00	7.45E-02	0.00
Use of secondary materials	kg	9.20E-01	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Use of renewable secondary fuels	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Use of non-renewable secondary fuels	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Net use of freshwater resources	m³	2.22E-03	1.45E-06	6.81E-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.39E-07	0.00	8.42E-06	0.00



Waste generation and outflows

Indicator	Unit	Results per declared unit														
		Manufacturing	Construction		Use							End-of-life				Module
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	6.80E-06	1.33E-06	3.69E-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25E-07	0.00	1.50E-07	0.00
Non-hazardous waste disposed	kg	3.97E-02	2.15E-05	7.78E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09E-06	0.00	1.00E+00	0.00
Radioactive waste disposed	kg	3.50E-05	3.72E-06	1.03E-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.84E-07	0.00	4.42E-07	0.00

Outflows

Indicator	Unit	Results per declared unit														
		Manufacturing	Construction		Use							End-of-life				Module
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Recycling materials	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Materials for energy recovery (energy recovery)	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00
Exported energy	MJ per vector	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00	0.00E+00	0.00

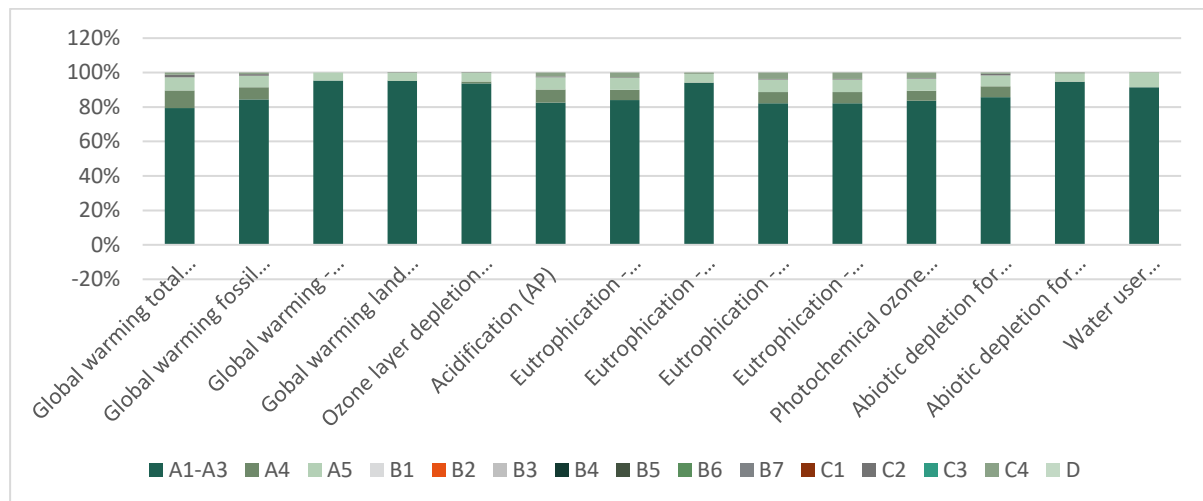
Biogenic carbon content information

Results per declared unit		
Biogenic carbon content	Unit	Quantity
Biogenic carbon content in the product	kg C	0.00E+00
Biogenic carbon content in the enclosed packaging	kg C	1.74E-01

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

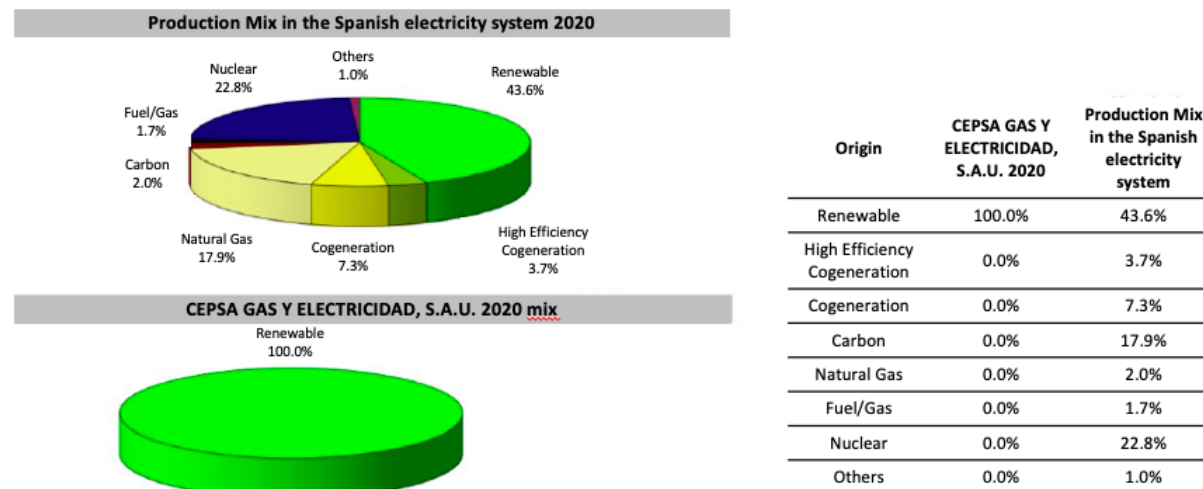


Most of the impacts occur during the **product stage**. In fact, 93% of the impacts associated with global warming, 92% of the impacts associated with the consumption of non-renewable resources, 99% of the impacts associated with energy consumption and 99% of the impacts associated with water consumption occur during this stage.



Additional environmental information

The electricity mix used for the characterization of electricity has been a combination of 61% of renewable energies and 39% of the Spanish mix for the year 2020.





Information related to the sectoral EPD.

This EPD® is not sector specific.

Differences with previous versions

First version of EPD®.

References

- General Instructions of the International EPD® System Program. Version 3.01.
- PCR 2019: 14 Construction products (EN 15804:A2) version 1.11.
- UNE-EN 15804:2012+A2:2020. Sustainability in construction. Environmental product declarations.
- Basic product category rules for building products.
- ISO 14020: 2000 Environmental labels and declarations - General principles.
- ISO 14025: 2010 Environmental labels and declarations - Environmental declarations Type III - Principles and procedures.
- ISO 14040: 2006 Environmental management - Life cycle assessment - Principles and framework.
- ISO 14044: 2006 Environmental management - Life cycle assessment - Requirements and guidelines.
- LCA DANOSA DANOFELT 2022.

tecna
certification



VERIFICATION STATEMENT CERTIFICATE CERTIFICADO DE DECLARACIÓN DE VERIFICACIÓN

Certificate No. / Certificado nº: EPD00419

TECNALIA R&I CERTIFICACION S.L., confirms that independent third-party verification has been conducted of the Environmental Product Declaration (EPD) on behalf of:

TECNALIA R&I CERTIFICACION S.L., confirma que se ha realizado verificación de tercera parte independiente de la Declaración Ambiental de Producto (DAP) en nombre de:

DERIVADOS ASFALTICOS NORMALIZADOS, S.A. (DANOSA)
Pol. Ind. Sector, 9
19290 - FONTANAR (Guadalajara) SPAIN

for the following product(s):
para el siguiente(s) producto(s):

DANOFELT PY 120, PY 150, PY 200, PY 300 and PY 500 polyester geotextiles.
Geotextiles de poliéster DANOFELT PY 120, PY 150, PY 200, PY 300 y PY 500.

with registration number **S-P-01897** in the International EPD® System (www.environdec.com).
*con número de registro **S-P-01897** en el Sistema Internacional EPD® (www.environdec.com).*

it's in conformity with:
es conforme con:

- **ISO 14025:2010 Environmental labels and declarations. Type III environmental declarations.**
- **General Programme Instructions for the International EPD® System v.3.01.**
- **PCR 2019:14 Construction products (EN 15804:A2) v.1.11.**
- **CPC 36950 Unspecified articles of plastics for construction.**



Carlos Nazabal Alsua
Manager

Issued date / Fecha de emisión:	17/03/2023
Update date / Fecha de actualización:	17/03/2023
Valid until / Válido hasta:	15/03/2028
Serial Nº / Nº Serie:	EPD0041900-E

This certificate is not valid without its related EPD.
Este certificado no es válido sin su correspondiente EPD.

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