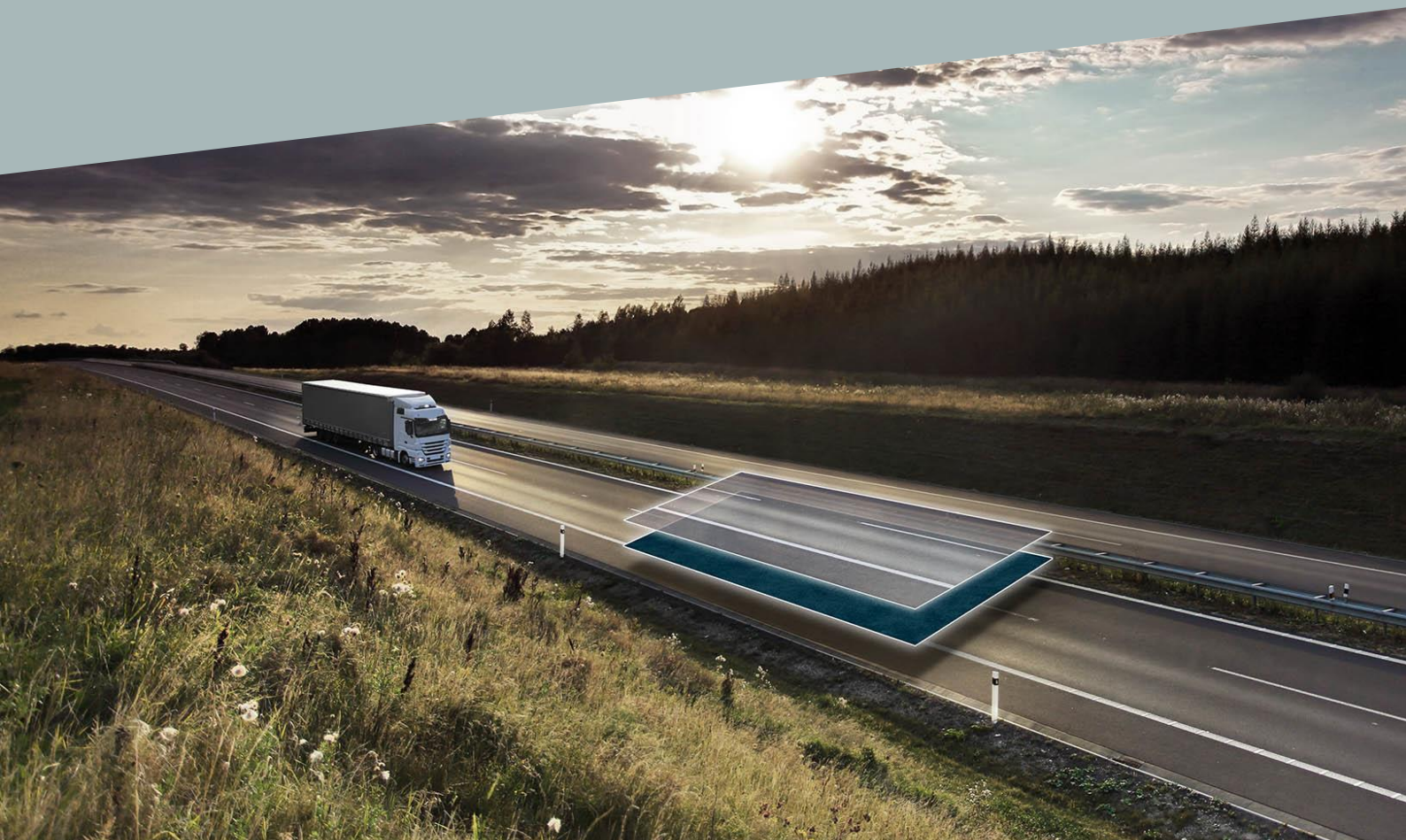


Owner: Fibertex Nonwovens A/S
No.: MD-22145-EN
Issued: 10-02-2023
Valid to: 10-02-2028

3rd PARTY VERIFIED

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | ISO 14025 & EN 15804



Owner of declaration
 Fibertex Nonwovens A/S
 Svendborgvej 16
 9220 Aalborg, Denmark
 VAT no. DK-40 09 82 16



Issued:
 10-02-2023

Valid to:
 10-02-2028

Programme
 EPD Danmark
www.epddanmark.dk



- Industry EPD
- Product EPD

Basis of calculation
 This EPD is developed in accordance with the European standard EN 15804+A2.

Comparability
 EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

Validity
 This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

Use
 The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

Declared product(s)
 Fibertex PP

Number of declared datasets/product variations: 1

- EPD type**
- Cradle-to-gate with modules C1-C4 and D
 - Cradle-to-gate with options, modules C1-C4 and D
 - Cradle-to-grave and module D
 - Cradle-to-gate
 - Cradle-to-gate with options

Production site
 Fibertex Nonwovens' production site in Denmark.
 Address: Svendborgvej 16, 9220 Aalborg, Denmark.

Product(s) use
 Fibertex Nonwovens' geotextiles are designed to serve different functions, including protection, drainage, filtration, and separation. The product is used in civil engineering applications, including road works, construction works, ground systems, drainage and filtration systems, hydraulic works, and waste disposals (landfills).

CEN standard EN 15804 serves as the core PCR
Independent verification of the declaration and data, according to EN ISO 14025
<input type="checkbox"/> internal <input checked="" type="checkbox"/> external
Third party verifier: <hr/> Guangli Du

Declared/ functional unit
 1 kg of nonwovens

Year of production site data (A3)
 2021

Martha Katrine Sørensen
 EPD Danmark

EPD version
 1st version

Life cycle stages and modules (MND = module not declared)

Product			Construction process		Use							End of life				Beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use, recovery and recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

Product information

Product description

The main product components are shown in the table below.

Material	Weight-% of declared product
Polypropylene (PP)	>99%
Additives	<0.5%
Printing ink	<0.1%
Sum	100%

Product packaging:

The composition of the sales- and transport packaging of the product is shown in the table below.

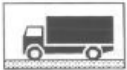


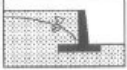






Material	Weight-% of packaging
Plastic foil	10%
Paper cores	90%
Sum	100%

Reference Service Life (RSL)

The reference service life (RSL) is predicted to be durable for more than 100 years based on standardised test methods according to the application standards.

Essential characteristics

The nonwoven geotextiles comply with the European application standards presented below.

 ✓ Construction of roads and other trafficked areas EN 13249:2016	 ✓ Construction of railways EN 13250:2016	 ✓ Earthworks, foundations and retaining structures EN 13251:2016	 ✓ Drainage systems EN 13252:2016	 ✓ Erosion control systems EN 13253:2016
 ✓ Construction of reservoirs and dams EN 13254:2016	 ✓ Construction of canals EN 13255:2016	 ✓ Tunnels and underground structures EN 13256:2016	 ✓ Solid waste disposals EN 13257:2016	 ✓ Liquid waste containment projects EN 13265:2016

Further technical information can be obtained by contacting the manufacturer or on the manufacturers website: www.fibertex.com

Representativity

This declaration, including data collection and the modelled foreground system including results, represents the production of 1 kg of nonwovens on the production site located in Aalborg, Denmark. Product specific data are based on average values collected in the year 2021. Background data are based on the GaBi database version 2022.2 and EcoInvent 3.8. The background data are less than 10 years old. Generally, the used background datasets are of high quality, and the majority of the datasets are only a couple of years old.

Hazardous substances

The nonwovens does not contain substances listed on the "Candidate List of Substances of Very High Concern for authorisation"

(<http://echa.europa.eu/candidate-list-table>)

Picture of product(s)



LCA background

Declared unit

The LCI and LCIA results in this EPD relates to environmental impacts caused by the production and end-of-life of 1 kg of nonwovens.

Name	Value	Unit
Declared unit	1	kg
Density	200	kg/m ³
Conversion factor to 1 kg.	1	-

Functional unit

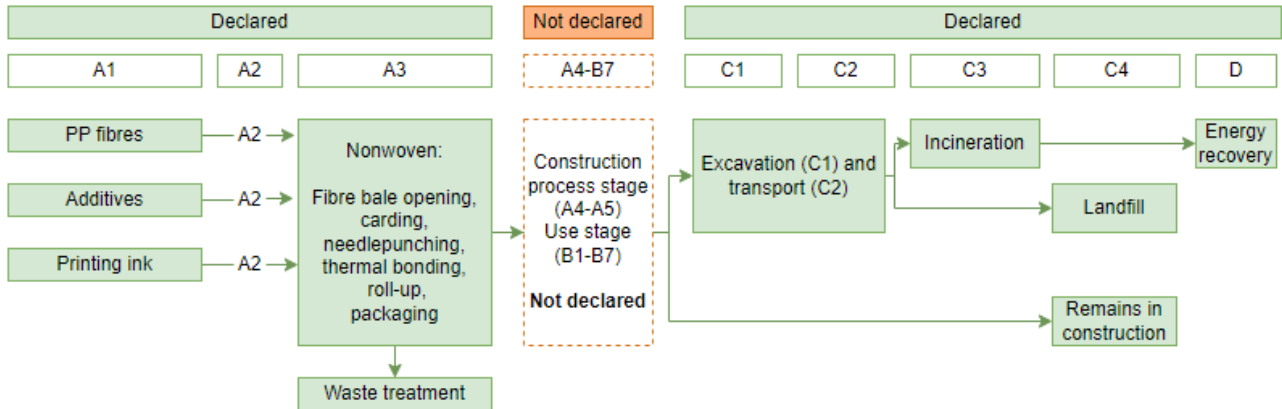
Not defined.

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804+A2:2019.

Flow diagram

The flow diagram below presents the main processes included in the life cycle of the nonwoven geotextiles.



Guarantee of Origin – certificates

Foreground:

There are no "Guarantee of Origin" certificates used in the production. Consumption of electricity is modelled with residual grid mix. No comfort heat is consumed in the production area.

Background system:

Other processes upstream and downstream from the production is modelled with processes from the GaBi background database that is based on average data.

System boundary

This EPD is based on a cradle-to-gate LCA with modules C1-C4 and D, in which 100 weight-% has been accounted for.

The general rules for the exclusion of inputs and outputs follows the requirements in EN 15804, 6.3.5, where the total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass and 1 % of energy usage and mass for unit processes.

Allocation of energy, auxiliary materials, and production waste is based on mass, i.e. per kg of product manufactured at the production site in Aalborg, Denmark.

Product stage (A1-A3) includes:

A1 – Extraction and processing of raw materials

A2 – Transport to the production site

A3 – Manufacturing processes

The product stage comprises the acquisition of all raw materials, products and energy, transport to the production site, packaging and waste processing up to the “end-of-waste” state or final disposal. The LCA results are declared in aggregated form for the product stage, which means, that the sub-modules A1, A2 and A3 are declared as one module A1-A3.

The PP fibres are manufactured by suppliers and delivered as fibre bales at Fibertex Nonwovens’ production site in Aalborg, Denmark.

The fibre bales are loaded into a staple fibre bale opening. The fibres are then mixed, and additive is added, introducing properties such as reduced static electrical charge and lubrication to the production. Subsequently, the mixed fibres enter the carding section. In this section, the fibres are separated and distributed onto the production line, forming a loose, yet coherent fibre web material. The fibres then enter the needlepunching process, where the fibres are mechanically bonded and subsequently stretched, making the fabric tight and flexible.

Additionally, the PP fabric is thermally bonded and stretched to form the required nonwoven

fabric with optimum capabilities of strength, surface structure, etc. and printing ink is added.

Finally, the nonwovens are quality controlled, rolled up, and wrapped in protective plastic foil.

End of Life (C1-C4) includes:

C1 – Deconstruction

C2 – Transport to waste processing

C3 – Waste processing

C4 – Disposal

Three different scenarios have been included in the end-of-life stage. One assumes that 100% of the nonwovens remains in construction, one assumes that 100% is collected and landfilled, and one assumes that 100% is collected and incinerated.

The landfill scenario and the incineration scenario both include transport from the construction site to the landfill or incineration plant, to which a distance of 100 km is assumed.

None of these 100% scenarios are likely, but a mix of the three scenarios is considered plausible.

Re-use, recovery and recycling potential (D) includes:

No potential benefits are associated with the landfill scenario or the remains in construction scenario.

The incineration scenario includes benefits from avoided average electricity production and thermal energy production.

LCA results

ENVIRONMENTAL IMPACTS PER DECLARED UNIT (1 KG)													
Parameter	Unit	A1-A3	Scenario										
			Landfill					Incineration					Remains*
			C1	C2	C3	C4	D	C1	C2	C3	C4	D	
GWP-total	[kg CO ₂ eq.]	2.88E+00	2.70E-04	7.63E-03	0.00E+00	7.02E-02	0.00E+00	2.70E-04	7.63E-03	3.13E+00	0.00E+00	-1.48E+00	0.00E+00
GWP-fossil	[kg CO ₂ eq.]	2.87E+00	2.67E-04	7.55E-03	0.00E+00	7.09E-02	0.00E+00	2.67E-04	7.55E-03	3.13E+00	0.00E+00	-1.48E+00	0.00E+00
GWP-biogenic	[kg CO ₂ eq.]	1.36E-02	1.05E-06	3.16E-05	0.00E+00	-7.54E-04	0.00E+00	1.05E-06	3.16E-05	1.01E-04	0.00E+00	-7.58E-03	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	1.09E-03	1.85E-06	5.17E-05	0.00E+00	3.45E-05	0.00E+00	1.85E-06	5.17E-05	3.30E-06	0.00E+00	-1.63E-04	0.00E+00
ODP	[kg CFC 11 eq.]	1.78E-10	2.70E-17	7.54E-16	0.00E+00	9.52E-14	0.00E+00	2.70E-17	7.54E-16	1.34E-13	0.00E+00	-1.00E-11	0.00E+00
AP	[mol H ⁺ eq.]	5.08E-03	3.66E-06	8.58E-06	0.00E+00	2.10E-04	0.00E+00	3.66E-06	8.58E-06	3.11E-04	0.00E+00	-1.95E-03	0.00E+00
EP-freshwater	[kg P eq.]	5.54E-06	9.82E-10	2.74E-08	0.00E+00	1.32E-05	0.00E+00	9.82E-10	2.74E-08	3.13E-08	0.00E+00	-2.04E-06	0.00E+00
EP-marine	[kg N eq.]	1.42E-03	1.66E-06	2.76E-06	0.00E+00	4.65E-05	0.00E+00	1.66E-06	2.76E-06	6.48E-05	0.00E+00	-5.28E-04	0.00E+00
EP-terrestrial	[mol N eq.]	1.51E-02	1.82E-05	3.31E-05	0.00E+00	5.10E-04	0.00E+00	1.82E-05	3.31E-05	1.46E-03	0.00E+00	-5.65E-03	0.00E+00
POCP	[kg NMVOC eq.]	5.94E-03	4.95E-06	7.38E-06	0.00E+00	1.49E-04	0.00E+00	4.95E-06	7.38E-06	1.93E-04	0.00E+00	-1.48E-03	0.00E+00
ADPm ¹	[kg Sb eq.]	4.56E-07	2.77E-11	7.74E-10	0.00E+00	4.92E-09	0.00E+00	2.77E-11	7.74E-10	3.25E-09	0.00E+00	-2.24E-07	0.00E+00
ADPF ¹	[MJ]	9.16E+01	3.61E-03	1.01E-01	0.00E+00	1.01E+00	0.00E+00	3.61E-03	1.01E-01	3.65E-01	0.00E+00	-2.51E+01	0.00E+00
WDP ¹	[m ³ world eq. deprived]	4.75E-01	3.07E-06	8.59E-05	0.00E+00	-6.99E-04	0.00E+00	3.07E-06	8.59E-05	2.89E-01	0.00E+00	-1.58E-01	0.00E+00
Caption	GWP-total = Globale Warming Potential - total; 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 = Ozone Depletion; AP = Acidification; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPF = Abiotic Depletion Potential – fossil fuels; WDP = water use												
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: 1,95*10 ² or 195, while 1,12E-11 is the same as 1,12*10 ⁻¹¹ or 0,0000000000112.												
Disclaimer	¹ The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.												

*End-of-life scenario: Remains in construction.

ADDITIONAL ENVIRONMENTAL IMPACTS PER DECLARED UNIT (1 KG)													
Parameter	Unit	A1-A3	Scenario										
			Landfill					Incineration					Remains*
			C1	C2	C3	C4	D	C1	C2	C3	C4	D	
PM	[Disease incidence]	6.28E-08	1.94E-10	5.89E-11	0.00E+00	2.02E-09	0.00E+00	1.94E-10	5.89E-11	1.82E-09	0.00E+00	-1.61E-08	0.00E+00
IRP ²	[kBq U235 eq.]	2.82E-01	1.02E-06	2.84E-05	0.00E+00	1.82E-03	0.00E+00	1.02E-06	2.84E-05	3.63E-03	0.00E+00	-3.37E-01	0.00E+00
ETP-fw ¹	[CTUe]	4.62E+01	2.56E-03	7.14E-02	0.00E+00	9.84E-01	0.00E+00	2.56E-03	7.14E-02	1.69E-01	0.00E+00	-5.55E+00	0.00E+00
HTP-c ¹	[CTUh]	1.06E-09	5.27E-14	1.47E-12	0.00E+00	4.42E-11	0.00E+00	5.27E-14	1.47E-12	1.99E-11	0.00E+00	-2.54E-10	0.00E+00
HTP-nc ¹	[CTUh]	4.60E-08	4.23E-12	7.99E-11	0.00E+00	3.70E-09	0.00E+00	4.23E-12	7.99E-11	6.21E-10	0.00E+00	-9.74E-09	0.00E+00
SQP ¹	-	2.44E+01	1.53E-03	4.27E-02	0.00E+00	7.24E-02	0.00E+00	1.53E-03	4.27E-02	1.10E-01	0.00E+00	-4.51E+00	0.00E+00
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality (dimensionless)												
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: 1,95*10 ² or 195, while 1,12E-11 is the same as 1,12*10 ⁻¹¹ or 0,0000000000112.												
Disclaimers	¹ The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.												
	² This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.												

*End-of-life scenario: Remains in construction.

RESOURCE USE PER DECLARED UNIT (1 KG)													
Parameter	Unit	A1-A3	Scenario										
			Landfill					Incineration					Remains*
			C1	C2	C3	C4	D	C1	C2	C3	C4	D	
PERE	[MJ]	7.45E+00	2.50E-04	6.99E-03	0.00E+00	8.27E-02	0.00E+00	2.50E-04	6.99E-03	8.61E-02	0.00E+00	-6.94E+00	0.00E+00
PERM	[MJ]	1.74E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	9.19E+00	2.50E-04	6.99E-03	0.00E+00	8.27E-02	0.00E+00	2.50E-04	6.99E-03	8.61E-02	0.00E+00	-6.94E+00	0.00E+00
PENRE	[MJ]	4.71E+01	3.62E-03	1.01E-01	0.00E+00	1.01E+00	0.00E+00	3.62E-03	1.01E-01	3.65E-01	0.00E+00	-2.51E+01	0.00E+00
PENRM	[MJ]	4.46E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	9.17E+01	3.62E-03	1.01E-01	0.00E+00	1.01E+00	0.00E+00	3.62E-03	1.01E-01	3.65E-01	0.00E+00	-2.51E+01	0.00E+00
SM	[kg]	1.12E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m³]	1.42E-02	2.89E-07	8.07E-06	0.00E+00	1.30E-05	0.00E+00	2.89E-07	8.07E-06	6.77E-03	0.00E+00	-6.67E-03	0.00E+00
Caption	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 resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water												
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: 1,95*10 ² or 195, while 1,12E-11 is the same as 1,12*10 ⁻¹¹ or 0,0000000000112.												

*End-of-life scenario: Remains in construction.

WASTE CATEGORIES AND OUTPUT FLOWS PER DECLARED UNIT (1 KG)													
Parameter	Unit	A1-A3	Scenario										
			Landfill					Incineration					Remains*
			C1	C2	C3	C4	D	C1	C2	C3	C4	D	
HWD	[kg]	2.76E-08	1.92E-14	5.35E-13	0.00E+00	1.55E-10	0.00E+00	1.92E-14	5.35E-13	3.44E-11	0.00E+00	-3.40E-09	0.00E+00
NHWD	[kg]	3.68E-02	5.90E-07	1.65E-05	0.00E+00	9.96E-01	0.00E+00	5.90E-07	1.65E-05	1.24E-02	0.00E+00	-1.27E-02	0.00E+00
RWD	[kg]	1.88E-03	6.72E-09	1.88E-07	0.00E+00	1.24E-05	0.00E+00	6.72E-09	1.88E-07	2.21E-05	0.00E+00	-1.99E-03	0.00E+00
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	7.31E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.68E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E+01	0.00E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Eksporteret elektrisk energi; EET = Eksporteret termisk energi												
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: 1,95*10 ² or 195, while 1,12E-11 is the same as 1,12*10 ⁻¹¹ or 0,0000000000112.												

*End-of-life scenario: Remains in construction.

BIOGENIC CARBON CONTENT PER DECLARED UNIT (1 KG)		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	[kg C]	0.00E+00
Biogenic carbon content in accompanying packaging	[kg C]	4.30E-02
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂	

Additional information

LCA interpretation

The tables below show the processes contributing the most to the specific impact categories, and how much they contribute to the given environmental impact category.

The contributions (in percentages) are expressed relative to the total impacts, which is a result of both impacts (positive values) and savings from processes such as recycling and energy recovery (negative values). In cases where the impact from a certain process appears to be larger than the net impact from the entire product system, the percentage contribution will thus be larger than 100%.

Maximum contribution to environmental impact categories – scenario: landfill

ENVIRONMENTAL IMPACTS				
Impact Category	Unit	Maximum contribution on category	Process	Percentage of category
Climate Change - total	[kg CO ₂ eq.]	2.43E+00	Polypropylene fibres (PP)	82%
Climate Change, fossil	[kg CO ₂ eq.]	2.42E+00	Polypropylene fibres (PP)	82%
Climate Change, biogenic	[kg CO ₂ eq.]	-1.58E-01	Paper cores	-92%
Climate Change, land use and land use change	[kg CO ₂ eq.]	6.08E-04	Transport of PP fibres	52%
Ozone depletion	[kg CFC 11 eq.]	1.66E-10	Printing ink	93%
Acidification	[mol H ⁺ eq.]	4.48E-03	Polypropylene fibres (PP)	84%
Eutrophication, freshwater	[kg PO ₄ eq.]	1.32E-05	Disposal to landfill	70%
Eutrophication, marine	[kg N eq.]	1.19E-03	Polypropylene fibres (PP)	81%
Eutrophication, terrestrial	[mol N eq.]	1.28E-02	Polypropylene fibres (PP)	81%
Photochemical ozone formation, human health	[kg NMVOC eq.]	5.31E-03	Polypropylene fibres (PP)	87%
Resource use, mineral and metals	[kg Sb eq.]	3.50E-07	Polypropylene fibres (PP)	76%
Resource use, fossils	[MJ]	8.39E+01	Polypropylene fibres (PP)	91%
Water use	[m ³]	4.57E-01	Polypropylene fibres (PP)	96%

Maximum contribution to environmental impact categories – scenario: remains in construction

ENVIRONMENTAL IMPACTS				
Impact Category	Unit	Maximum contribution on category	Process	Percentage of category
Climate Change - total	[kg CO ₂ eq.]	2.43E+00	Polypropylene fibres (PP)	84%
Climate Change, fossil	[kg CO ₂ eq.]	2.42E+00	Polypropylene fibres (PP)	84%
Climate Change, biogenic	[kg CO ₂ eq.]	-1.58E-01	Paper cores	-92%
Climate Change, land use and land use change	[kg CO ₂ eq.]	6.08E-04	Transport of PP fibres	56%
Ozone depletion	[kg CFC 11 eq.]	1.66E-10	Printing ink	93%
Acidification	[mol H ⁺ eq.]	4.48E-03	Polypropylene fibres (PP)	88%
Eutrophication, freshwater	[kg PO ₄ eq.]	3.21E-06	Polypropylene fibres (PP)	58%
Eutrophication, marine	[kg N eq.]	1.19E-03	Polypropylene fibres (PP)	84%
Eutrophication, terrestrial	[mol N eq.]	1.28E-02	Polypropylene fibres (PP)	84%
Photochemical ozone formation, human health	[kg NMVOC eq.]	5.31E-03	Polypropylene fibres (PP)	89%
Resource use, mineral and metals	[kg Sb eq.]	3.50E-07	Polypropylene fibres (PP)	77%
Resource use, fossils	[MJ]	8.39E+01	Polypropylene fibres (PP)	92%
Water use	[m ³]	4.57E-01	Polypropylene fibres (PP)	96%

Maximum contribution to environmental impact categories – scenario: incineration

ENVIRONMENTAL IMPACTS				
Impact Category	Unit	Maximum contribution on category	Process	Percentage of category
Climate Change - total	[kg CO ₂ eq.]	3.13E+00	Incineration	69%
Climate Change, fossil	[kg CO ₂ eq.]	3.13E+00	Incineration	69%
Climate Change, biogenic	[kg CO ₂ eq.]	-1.58E-01	Paper cores	-92%
Climate Change, land use and land use change	[kg CO ₂ eq.]	6.08E-04	Transport of PP fibres	62%
Ozone depletion	[kg CFC 11 eq.]	1.66E-10	Printing ink	99%
Acidification	[mol H ⁺ eq.]	4.48E-03	Polypropylene fibres (PP)	129%
Eutrophication, freshwater	[kg PO ₄ eq.]	3.21E-06	Polypropylene fibres (PP)	90%
Eutrophication, marine	[kg N eq.]	1.19E-03	Polypropylene fibres (PP)	124%
Eutrophication, terrestrial	[mol N eq.]	1.28E-02	Polypropylene fibres (PP)	116%
Photochemical ozone formation, human health	[kg NMVOC eq.]	5.31E-03	Polypropylene fibres (PP)	114%
Resource use, mineral and metals	[kg Sb eq.]	3.50E-07	Polypropylene fibres (PP)	148%
Resource use, fossils	[MJ]	8.39E+01	Polypropylene fibres (PP)	125%
Water use	[m ³]	4.57E-01	Polypropylene fibres (PP)	75%

Technical information on scenarios

Reference service life

RSL information	Unit
Reference service Life	100 years
Declared product properties	Technical specifications and guidance can be obtained from the company's website www.fibertex.com/products/geosynthetics or from direct contact to Fibertex Nonwovens at +45 96 35 35 35 or fibertex@fibertex.com
Design application parameters	
Assumed quality of work	
Outdoor environment	
Indoor environment	
Usage conditions	
Maintenance	

End of life (C1-C4)

Scenario information	Landfill	Incineration	Remains in construction	Unit
Collected separately	1	1	0	kg
Collected with mixed waste	0	0	0	kg
For reuse	0	0	0	kg
For recycling	0	0	0	kg
For energy recovery	0	1	0	kg
For final disposal	1	0	0	kg

Re-use, recovery and recycling potential (D)

Credits for avoided production of energy beyond the system boundary (D). Only relevant for the incineration scenario.

Scenario information/Materiel	Value	Unit
Credit for electricity recovery	6.68	MJ
Credit for thermal energy recovery	11.90	MJ

Indoor air

The geotextiles are buried in the ground, and release of dangerous substances to indoor air is not relevant.

Soil and water

The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A2 chapter 7.4.2.

References

Publisher	 www.epddanmark.dk
Programme operator	Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA-practitioner	Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA software / background data	GaBi version 10.6, Database 2022.2 www.gabi-software.com EcoInvent version 3.8 www.ecoinvent.org
3rd party verifier	Guangli Du Aalborg University (Copenhagen), Denmark A.C. Meyers Vænge 15 DK-2450 København SV www.aau.dk

General programme instructions

General Programme Instructions, version 2.0, spring 2020
www.epddanmark.dk

EN 15804

DS/EN 15804 + A2:2019 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

EN 15942

DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

ISO 14025

DS/EN ISO 14025:2010 – " Environmental labels and declarations – Type III environmental declarations – Principles and procedures"

ISO 14040

DS/EN ISO 14040:2008 – " Environmental management – Life cycle assessment – Principles and framework"

ISO 14044

DS/EN ISO 14044:2008 – " Environmental management – Life cycle assessment – Requirements and guidelines"