

# Environmental Product Declaration



For multiple products, based on the average results of the product family

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

## Drainage system DRAINplus: D370L6SN8 and D300L6SN8

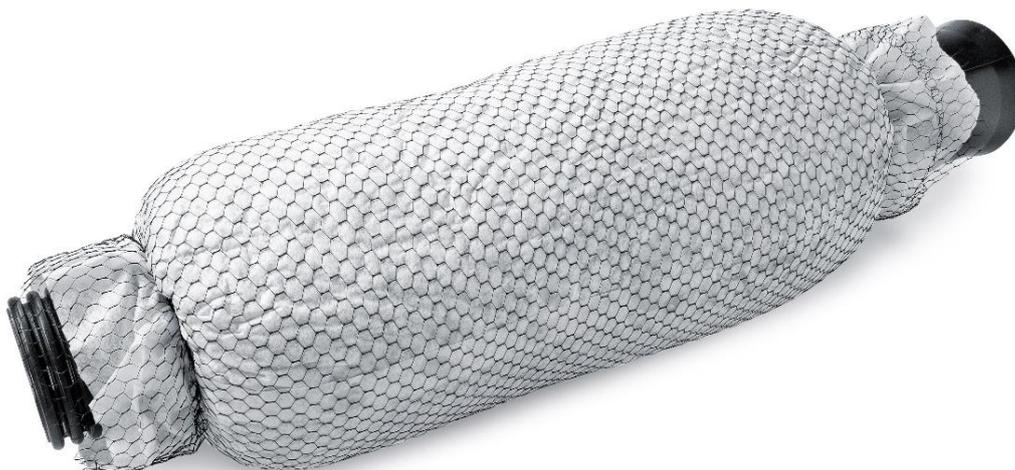
from

**Storopack Inc.**



Programme:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator:	EPD International AB
EPD registration number:	<b>EPD-IES-0016123</b>
Publication date:	2024-09-03
Valid until:	2029-09-02

*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [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:info@environdec.com">info@environdec.com</a>

### Accountabilities for PCR, LCA and independent, third-party verification

#### Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): <PCR 2019:14 Construction products, version 1.3.4, UN CPC code(s) 36320>

PCR review was conducted by: *The International EPD® System Technical Committee. See [www.environdec.com](http://www.environdec.com) for a list of members. The review group can be contacted through the Secretariat at [www.environdec.com/contact](http://www.environdec.com/contact).*

#### Life Cycle Assessment (LCA)

LCA accountability: *Juan José Pinzón, Marcel Gómez Consultoría Ambiental*

#### Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

EPD verification by individual verifier

Third-party verifier: *Stephen FORSON, Viridis Pride Ltda., [sforson@viridispride.com](mailto:sforson@viridispride.com)*

Approved by: The International EPD® System

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

Yes       No

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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 equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

## Company information

Owner of the EPD: Storopack Inc.

Contact: Alex Vershuren, [Drainplus.nl@Storopack.com](mailto:Drainplus.nl@Storopack.com)

Description of the organisation: Storopack is a specialist in the field of protective packaging and technical moulded parts. As we are an internationally operating family business, tradition and innovation play an important role in all our activities. We strive to provide our customers with the perfect protective packaging solution and to support them in the long term – this vision underpins all our activities.

The company is divided into two divisions: the Moulding division produces custom protective packaging and technical moulded parts made of expansion foam for a variety of industries.

Product-related or management system-related certifications ISO 9001

Name and location of production site(s): Amerikastraat 1, Ittervoort, Limburg 6014 CE, Netherland

## Product information

Product name: Drainage system DRAINplus: D370L6SN8 and D300L6SN8

Product identification: DRAINplus D370L6SN8 and DRAINplus D300L6SN8

Product description: DRAINplus is a drainage and infiltration system from Storopack with large absorption surface: DRAINplus is a preassembled all-in-one system suitable for multiple applications, including drainage of collected water, gradual infiltration of rainwater into the ground, and water treatment. Made from recycled material, DRAINplus itself is 100 percent recyclable.

DRAINplus benefits installers and tradespeople, as it saves time and reduces the number of workers and machines necessary. The fully closed pipes can be bent in any direction for especially quick, simple, and ergonomic installation – either lengthwise or on an interconnected level. DRAINplus can be used horizontally or vertically, ensuring maximum flexibility in property drainage, and simplifying implementation of different drainage solutions.



## BENEFITS AT A GLANCE

- All-in-one: Suitable for soil drainage, water treatment, and rainwater infiltration
- Flexible: Can be installed horizontally or vertically and connected lengthwise or on an interconnected level. Can be bent in any direction.
- Simple: For especially quick and simple installation
- Efficient: Thanks to the large absorption surface of up to 1.25 square meters per linear meter, takes in a high volume of water
- Eco-friendly: Made from recycled material and 100 percent recyclable. Low carbon footprint thanks to short transport routes.

- Lightweight: One meter of pipe weighs just 1.4 kilograms with a diameter of 300 millimeters and 2.1 kilograms with a diameter of 370 millimeters

AVAILABLE SIZES:

The pipes are available with a length of one, three or six meters and a diameter of 110/300 millimeters or 160/370 millimeters (pipe diameter/diameter DRAINplus). All pipe variants are available with SN 4 or SN 8 classification.

To obtain the results of the LCA and EPD report, the weighted average of the weights per linear meter of both products was taken as a reference, as show in table 1.

	Standard	Unit	Drainplus D370L6SN8	Drainplus D300L6SN8	Average
<b>SPECIFICATION DRAINplus</b>					
Drainage area per running meter		M <sup>2</sup>	1,2	0,95	1.08
Outside diameter		MM	370	300	335
Weight per unit		kg/m	2.1	1,4	1.75
Available length		M	1m /3m /6m	1m /3m /6m	1m /3m /6m
Water storage		Liter	55	35	45
<b>Perforated Drainage Tube Specification</b>					
Outside diameter		MM	160	110	135
Inside diameter		MM	139	95	117
Stiffness Nominal 4	EN ISO 9969	KN/m <sup>2</sup>	SN8	SN8	
Perforation type			360°		
<b>Specifications of Geotextiles - Nonwoven Polypropylene JT</b>					
Identification Properties		mm	1.35	1.35	1.35
Thickness at 2 kPa					
Mechanical MD/CMD	EN ISO 100319	KN/m <sup>2</sup>	6,0/8,0	6,0/8,0	6.0/8.1
CBR puncture resistance	ISO12236	N	1200	1200	1200
Hydraulic Properties		l/m <sup>2</sup> s			
Permeability vertical		(mm/s)	100	100	100
Opening size	EN ISO 12956	Micron	130	130	130
Massa per unit area	ISO 9864	g/m <sup>2</sup>	100	100	100
<b>HDEps Specification</b>					
bulk weight	UNE ore ISO	kg/M <sup>3</sup>	9	9	9
diameter/sizing		MM	20/20/30	20/20/30	20/20/30
water absorption 7 days		%	<2	<2	<2
water absorption 21 days		%	<2,5	<2,5	<2.5
<b>Non-toxic to wildlife and plant</b>					
<b>Netting Specification</b>					
Outside diameter		MM	370	300	335
weight per unit		g/m	35	45	40
Mesh type		Square	16	16	16

UN CPC code: 36320 Tubes, pipes and hoses, and fittings therefor, of plastics

Geographical scope: Netherland and Belgium

## LCA information

Functional unit / declared unit: 1 linear meter of drainage system DRAINplus installed with an average weight of 1.7 kg, and its packaging, with a reference service life of 50 years.

Reference service life: 50 years

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

Database(s) and LCA software used: Ecoinvent v3.9 (allocation, cut-off by classification) and SimaPro 9.5.0.2. The calculation methodologies are in accordance with UNE-EN 15804:2012+A2:2019.

Description of system boundaries: Cradle-to-grave: The EPD covers the modules A, B, C and D.

As it is a passive product within a construction, the use stage (including modules B1 to B7) is 0.

Modularity and polluter payer principles have been followed. The following procedure is followed for the exclusion of inputs and outputs (cut-off criteria):

- All inputs and outputs of a (unit) process for which data are available are included in the calculation. Lack of data can be replaced by conservative assumptions of average or generic data. Any assumptions regarding these choices are reported herein.
- Where input data are insufficient or missing data for a unit process, the cutoff criteria will be 1% of renewable and non-renewable primary energy use and 1% of the total mass input to that unit process. The 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.
- As per PCR 2019:14 Construction products, Version 1.3.4, 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 materials and auxiliary materials.
  - Packaging waste from raw materials and auxiliary materials.
- For those wastes whose outflow 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 1.3.4.

- 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, which together represent less than 5% of the mass, such as packaging waste of auxiliary materials, have not been considered.

Wherever possible, allocation has been avoided. Total energy consumption has no allocation as it is the total energy consumption calculated based on the actual consumption of the machines involved in the transformations; and waste generation data for the factory have been allocated using economic criteria, based on the sales volume to suppliers that carry out waste treatment.

### A1 Raw Materials Supply

This module considers the acquisition of raw materials that make up the products. In this case, the drainage system DRAINplus are composed of between 62% - 45% of polyethylene, 43% - 29% of expanded polystyrene, 10% - 7% of nonwoven geotextile, 2% of extruded plastic tubular and less than 1% of glue.

### A2 Transport

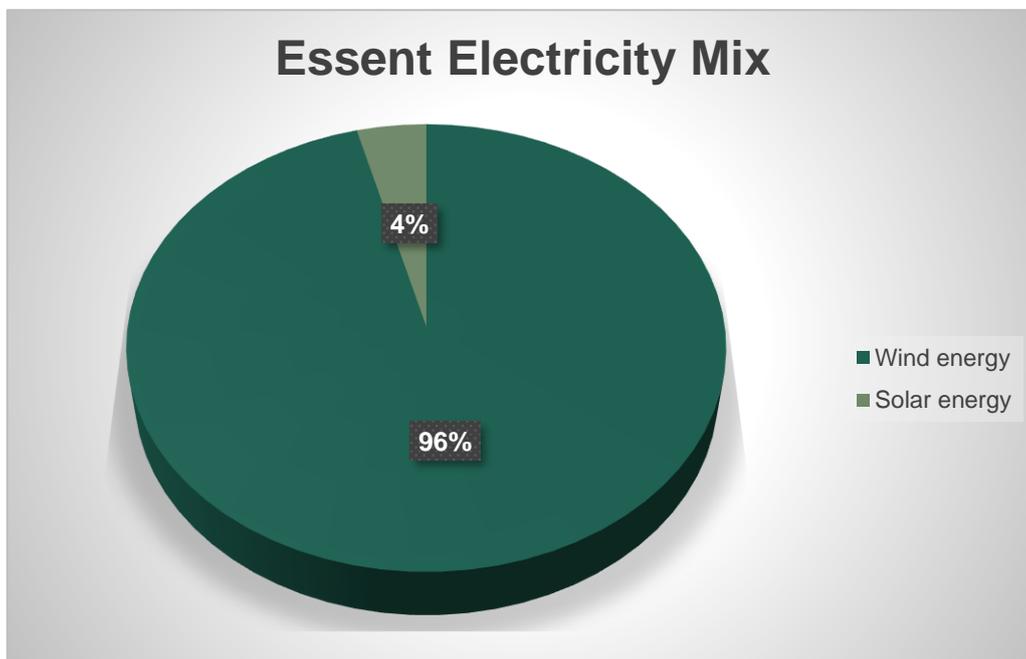
The raw materials are transported from Germany, France, Italy, Türkiye, and Netherland to the factory. The modelling includes road and/or boat transportation of each raw material until the delivery at Storopack Netherland manufacturing plant for its further processing.

### A3 Manufacture

At this stage, all the elementary input and output flows associated with the annual production by the year 2023 of the drainage system, were inventoried from the primary data on the quantity and type of raw materials, packaging, energy sources and water used, as well as the waste generated. It has not been necessary to apply any allocation.

The quantity of drainage system produced considers the production losses, estimated at 0.20%, which have been considered for the calculations of this stage.

The electricity supplier for Storopack in the Netherlands is Essent, which provides an energy mix of 96% wind energy and 4% solar energy, with an emission factor of 8.66E-04 kg CO<sub>2</sub>/kwh.



#### A4 Distribution

For the DRAINpuls, has an average distance of 121 km by road, its only destinations are the Netherlands and Belgium.

The main parameters affecting the result of this stage are:

PARAMETER	VALUE (expressed in Functional unit)
Type of fuel and consumption of the vehicle or type of means of transportation used	National distribution: 3.5 >32 tn Euro 6 truck with a diesel consumption of 0.38 liters per km and Transoceanic ship
Distance	National/International distribution 121 km (by road)
Usage capacity (including return transport without load)	% assumed in Ecoinvent
Bulk density of the transported product	1.58 kg/m <sup>3</sup>
Volume use capacity factor	1 (default)

#### A5 Installation

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

The installation is manual and do not consider any auxiliar material.

Packaging waste, including the wooden pallet and plastic film are sent to landfill.

PARAMETER	VALUE (expressed in Functional unit)
Secondary materials for installation:	None
Consumption of other resources	None
Quantitative description of the type of energy (regional mix) and its consumption during the installation process.	None
Waste of materials on site, prior to the processing of waste generated during the installation of the product:	Losses 0.2% Packaging waste: - Pallet 7.74E-01 kg - Plastic film 3.21E-030
Direct emissions to air, soil, or water	Considered negligible

#### B. Usage stage

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, roofing drainage system DRAINplus have no impact at this stage.

### C1 Deconstruction / Demolition

The demolition of the product is part of the demolition of the building. Therefore, it is assumed that the environmental impact consider electricity consumption of 0.047 MJ/kg of the product.

### C2 Transport

It is considered that once the product (drainage system DRAINplus) is demolished, 100% goes to the landfill located 50 km away in 7.5-16 ton trucks.

### C3 Treatment of waste for reuse, recovery, or recycling

It is considered that 100% of the drainage system is disposed in a landfill.

### C4 Final disposal

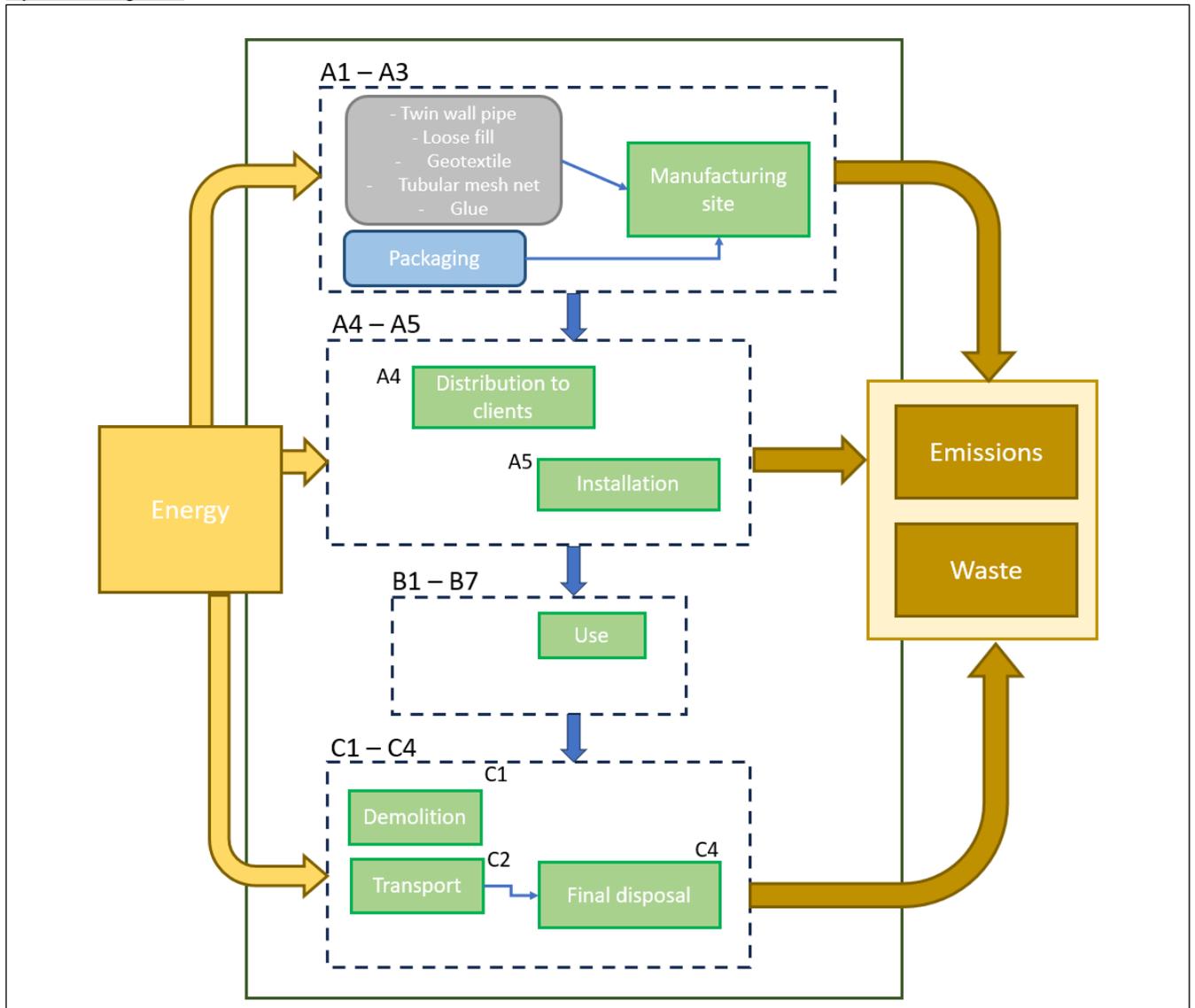
The most unfavorable scenario is considered. Therefore, 100% of the demolition waste is disposed of in a landfill.

PARAMETER	VALUE (expressed in Functional unit)
Waste collection process specified by type	100% to landfill, collected and mixed with the rest of construction waste
Recovery system specified by type	0% recycling
Specified discharge by type	100% landfill
Assumptions for scenario development	Waste from the demolition of construction profiles is transported 50 km by 7.5-16-ton Euro 6 trucks to the final treatment or disposal site.

### Recycling charges and benefits (module D)

Since 100% of the waste is destined for landfill, the value of module D is equal to 0.

System diagram:



More information:

- The life cycle analysis study has been conducted by Storopack Inc. with the technical support of Marcel Gómez Consultoría Ambiental.
- More information about the product: [www.storopack.nl](http://www.storopack.nl).

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 4.70 out of 5.

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

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage	
	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	NL	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	
Specific data used	95%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Variation – products	24%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	

X: Module declared, EU: Europe, NL: Netherland

## Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Polyethylene twin wall pipe	8.96E-01	4.92E-01	0
Expanded polystyrene (Loose fill)	6.05E-01	5.99E-01	0
Nonwoven Geotextile	1.41E-01	0	0
Extruded plastic tubular Mesh net	3.62E-02	0	0
Glue	7.62E-04	0	0
TOTAL	1.68E+00	0	0
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Wood pallet	7.74E-01	46.1%	3.87E-01
Plastic film (PE)	3.21E-03	0.2%	-
TOTAL	7.77E-01	46.3%	3.87E-01

During the life cycle of the product, no hazardous substance included in the "Candidate List of Substances of Very High Concern (SVHC) for authorization" has been used in a percentage greater than 0.1% of the weight of the product.

## Results of the environmental performance indicators

LCIA results are relative expressions and do not predict impacts on category endpoints, exceeding thresholds, 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, water depletion category.
  - Indicators describing waste production: EDIP 2003.

All the results presented below refer to the life cycle of 1 linear meter of drainage system DRAINplus installed with an average weight of 1.7 kg, and its packaging, with a reference service life of 50 years. For construction services, the total value of A1-A3 shall be replaced with the total value of A1-A5.

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-fossil	kg CO <sub>2</sub> eq.	4,06 E+00	2,06 E-02	9,67 E-03	0,00 E+00	6,00 E-03	1,25 E-02	0,00 E+00	2,04 E-01	0,00 E+00						
GWP-biogenic	kg CO <sub>2</sub> eq.	- 1,42 E+00	0,00 E+00	1,42 E+00	0,00 E+00											
GWP-luluc	kg CO <sub>2</sub> eq.	1,97 E-03	4,18 E-07	3,46 E-07	0,00 E+00	7,73 E-06	2,46 E-07	0,00 E+00	4,62 E-06	0,00 E+00						
GWP-total	kg CO <sub>2</sub> eq.	2,65 E+00	2,06 E-02	1,43 E+00	0,00 E+00	6,00 E-03	1,25 E-02	0,00 E+00	2,04 E-01	0,00 E+00						
ODP	kg CFC 11 eq.	2,29 E-06	4,61 E-10	1,81 E-10	0,00 E+00	2,05 E-10	2,71 E-10	0,00 E+00	1,28 E-10	0,00 E+00						
AP	mol H <sup>+</sup> eq.	1,08 E-02	2,66 E-05	4,06 E-05	0,00 E+00	8,72 E-06	1,58 E-05	0,00 E+00	8,38 E-05	0,00 E+00						
EP-freshwater	kg P eq.	7,95 E-05	1,68 E-08	3,47 E-08	0,00 E+00	1,43 E-07	9,85 E-09	0,00 E+00	1,24 E-07	0,00 E+00						
EP-marine	kg N eq.	2,24 E-03	6,54 E-06	3,99 E-05	0,00 E+00	2,60 E-06	3,91 E-06	0,00 E+00	7,75 E-05	0,00 E+00						
EP-terrestrial	mol N eq.	2,36 E-02	6,33 E-05	1,86 E-04	0,00 E+00	3,03 E-05	3,81 E-05	0,00 E+00	3,83 E-04	0,00 E+00						
POCP	kg NMVOC eq.	1,57 E-02	4,99 E-05	8,14 E-05	0,00 E+00	9,24 E-06	2,96 E-05	0,00 E+00	1,68 E-04	0,00 E+00						
ADP-minerals & metals*	kg Sb eq.	6,97 E-07	7,34 E-10	3,57 E-10	0,00 E+00	4,28 E-10	4,31 E-10	0,00 E+00	3,67 E-10	0,00 E+00						
ADP-fossil*	MJ	7,77 E+01	2,84 E-01	1,27 E-01	0,00 E+00	1,90 E-01	1,67 E-01	0,00 E+00	1,26 E-01	0,00 E+00						
WDP*	m <sup>3</sup>	6,51 E-01	2,60 E-04	1,58 E-04	0,00 E+00	1,61 E-03	1,53 E-04	0,00 E+00	4,69 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 1 - This impact category deals primarily with the eventual impacts of low doses of ionizing radiation on human health from the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents or occupational exposure due to disposal of radioactive waste in subway facilities. The ionizing radiation potential of soil, due to radon or some building materials are not measured nor are they measured with this parameter.*

*Disclaimer 2 - The results of this environmental impact indicator should be used with caution, as the uncertainties of the results are high and experience with this parameter is limited.*

## 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.	4,07 E+00	2,06 E-02	6,30 E-02	0,00 E+00	6,01 E-03	1,25 E-02	0,00 E+00	2,04 E-01	0,00 E+00						
<i>Additional voluntary indicators e.g., the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017</i>																

## 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	2,29 E+00	7,46 E-04	3,61 E-01	0,00 E+00	1,87 E-02	4,39 E-04	0,00 E+00	5,93 E+00	0,00 E+00						
PERM	MJ	6,29 E+00	0,00 E+00	- 3,56 E-01	0,00 E+00	- 5,93 E+00	0,00 E+00									
PERT	MJ	8,58 E+00	7,46 E-04	5,08 E-03	0,00 E+00	1,87 E-02	4,39 E-04	0,00 E+00	3,57 E-03	0,00 E+00						
PENRE	MJ	2,18 E+01	3,02 E-01	3,62 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	1,97 E-01	1,77 E-01	0,00 E+00	5,81 E+01	0,00 E+00
PENRM	MJ	6,15 E+01	0,00 E+00	- 3,49 E+00	0,00 E+00	- 5,80 E+01	0,00 E+00									
PENRT	MJ	8,33 E+01	3,02 E-01	1,35 E-01	0,00 E+00	1,97 E-01	1,77 E-01	0,00 E+00	1,34 E-01	0,00 E+00						
SM	kg	1,09 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>	1,70 E-02	1,19 E-05	1,97 E-05	0,00 E+00	5,68 E-05	6,98 E-06	0,00 E+00	1,92 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	9,49 E-04	1,87 E-06	8,18 E-07	0,00 E+00	2,41 E-07	1,10 E-06	0,00 E+00	6,85 E-07	0,00 E+00						
Non-hazardous waste disposed	kg	6,60 E-02	1,38 E-05	7,77 E-01	0,00 E+00	7,02 E-05	8,13 E-06	0,00 E+00	1,68 E+00	0,00 E+00						
Radioactive waste disposed	kg	4,26 E-05	2,43 E-08	6,75 E-08	0,00 E+00	1,58 E-06	1,43 E-08	0,00 E+00	7,73 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														
Material for recycling	kg	0,00 E+00														
Materials for energy recovery	kg	0,00 E+00														
Exported energy, electricity	MJ	0,00 E+00														
Exported energy, thermal	MJ	0,00 E+00														

## Biogenic Carbon Content Information

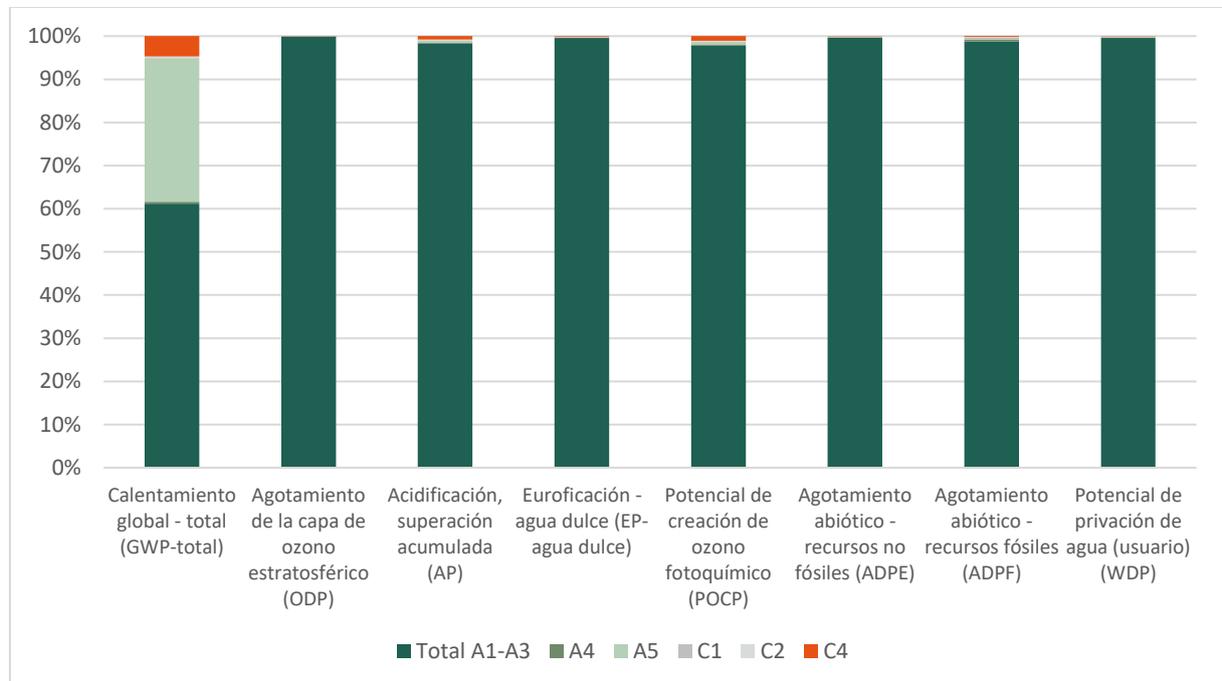
Results per Functional unit		
Biogenic Carbon Content	Unit	Quantity
Biogenic carbon content in the product	kg C	0
Biogenic carbon content in the enclosed packaging.	kg C	3.87E-01

## LCA Interpretation

the life cycle impacts of the drainage system DRAINplus are influenced by the A1-A3 stage of the product across all impact categories. A1-A3 exhibits the highest representation 99% across all impact categories, except for the Global Warming, which represents 62%.

Following A1-A5, stage C4 hold the second-highest representation in the life cycle of the drainage system DRAINplus, representing 32% in Global Warming category. However, on the other categories they represent less than 1%.

Conversely, the remaining stages (A4, A5, C1, and C1) exhibit negligible impact potentials, collectively contributing less than 2% to the total impact of the products.





## **Additional environmental information**

None

## **Additional social and economic information**

None.

## **Information related to Sector EPD**

This EPD is not sectorial.

## References

General Programme Instructions of the International EPD® System. Version 4.0.

PCR 2019:14. Construction products. Version 1.3.4.

CEN (2019): UNE-EN 15804:2012+A2:2020 Sustainability of construction works - Environmental product.

Declarations - Basic rules for the category of construction products.

ISO 14020:2000 Environmental labels and declarations - General principles.

ISO 14025:2010 Environmental Labels and Claims - Type III Environmental Claims - 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.

Storopack Drainage System DRAINplus LCA Report, Marcel Gómez Consultoría Ambiental, 2024.

## Product Variability

Impact category	Unit	A-C Average	A-C Drainplus D370L6SN8	A-C Drainplus D300L6SN8
GWP-total	kg CO2 eq	4,32E+00	17%	25%
ODP	kg CFC11 eq	2,29E-06	17%	25%
AP	mol H+ eq	1,09E-02	14%	21%
EP-freshwater	kg P eq	7,98E-05	17%	25%
EP-freshwater	kg N eq	2,37E-03	0%	1%
EP-marine	mol N eq	2,43E-02	17%	26%
EP-terrestrial	kg NMVOC eq	1,60E-02	14%	21%
POCP	kg Sb eq	6,99E-07	16%	25%
ADPE	MJ	7,86E+01	17%	25%
ADPF	m3 depriv.	6,53E-01	13%	19%

