epddanmark

ECO PLATFORM EPD VERIFIED

Owner: Plastmo A/S
No.: MD-23198-EN
Issued: 21-11-2023
Valid to: 21-11-2028

3rd PARTY **VERIFIED**

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | **ISO 14025 & EN 15804**

Owner of declaration
Plastmo A/S
Odinsvej 9-11
4100 Ringsted
Denmark
CVR-nr.: 33 05 16 62

Programme
EPD Danmark
www.epddanmark.dk

☐ Industry EPD
☒ Product EPD

Declared product(s)
PVC Rain Gutter System

Number of declared datasets/product variations: 1

Production site
Odinsvej 9-11
4100 Ringsted
Denmark

No green certificates have been used in A3 (production)

Product(s) use
Rain gutters for buildings

Declared/ functional unit
30-meter PVC Rain Gutter System

Year of production site data (A3)
2022

EPD version
No. 1

Issued: 21-11-2023
Valid to: 21-11-2028

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.

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

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

☐ internal ☒ external

Third party verifier:

[David Althoff Palm, Dalemarken AB]

Martha Katrine Sørensen
EPD Danmark

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	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Product information

Product description

The PVC rain gutter system is made from recyclable lead-free rigid polyvinyl chloride and contains no plasticisers. Plastic does not corrode or rust and does not combine with other materials. Therefore, plastic gutters can be used for all roof types. The material also withstands extremely low temperatures, salty air and air pollution.[1]

The material is easy to work with and is assembled using a special glue for gutters.

Since a gutter system consists of different parts, an average scenario has been chosen as functional unit for which components normally is used for a 30-meter roof on a one-story building and includes all parts e.g. rain gutter, down pipe etc. In case of another scenario, the environmental impacts can be calculated based on weight.

The main product components are shown in the table below.

Material	Weight-% of declared product
PVC parts - Plastmo (Gutter, downpipe, spout piece, bending, pipe socket)	81
PVC parts – Proplast (Assembly piece, end cap, collar, console, pipe holder)	18
Glue	<1

Product packaging:

The product packaging weighs 11.5 kg in total. The composition of the sales- and transport packaging of the product is shown in the table below.

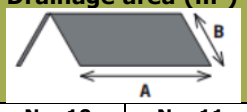
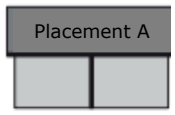
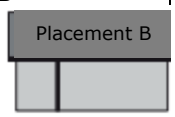
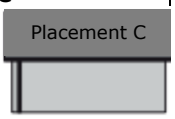
Material	Weight-% of packaging
LDPE foil	2.5
Cardboard	1.5
EUR pallet	96

Essential characteristics

This EPD is representative of a typical 30-meter PVC Rain Gutter System.

The system is available in five different colors. The color is not taken into account in this EPD. The color has minimal impact on the results presented in this EPD and no impact on performance of the product.

The system comes in three sizes which are adapted to different house types. A size 10 gutter is installed on smaller buildings, such as holiday homes and terraces. Size 11 is used for traditional house types, and size 12 is installed on larger buildings, such as rental properties as well as warehouses and industrial premises. To ensure sufficient drainage capacity, the roof area should be calculated and used to decide on the placement of the down pipe. The drainage area for the different types of PVC rain gutters (No. 10, 11 and 12) depends on the placement of the down pipe.

Rain gutter Placing	Drainage area (m^2) 		
	No. 10	No. 11	No. 12
A 	128	200	295
B 	85	128	195
C 	64	95	148

Further technical information about installation, use and disposal can be obtained by contacting the manufacturer or on the manufacturer's website: www.plastmo.dk

Representativity

[1] Polyvinyl Chloride (PVC) Plastic: Uses, Properties, Benefits & Toxicity (specialchem.com)

This declaration, including data collection and the modeled foreground system including results, represents the production of a 30-meter PVC Rain Gutter System on the production site located in Denmark. Product specific data are based on average values collected in the period January to December 2022 and delivered by Plastmo and their suppliers. Background data are based on the GaBi database and EcoInvent. 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 PVC Rain Gutter System does not contain substances listed on the "Candidate List of Substances of Very High Concern for authorisation"

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

Reference Service Life (RSL)

The Reference service life is 30 years based on the service life of plastic rain gutters available in BUILD service life table version 2021. The RSL is applicable under normal use conditions.

Picture of product(s)

LCA background

Declared unit

The LCI and LCIA results in this EPD relates to a "30-meter PVC Rain Gutter System" with a reference service life of 30 years.

Name	Value	Unit
Declared unit	1	item
Density	28	kg/item
Conversion factor to 1 kg.	0.0357	-

Functional unit

A 30-meter PVC Rain Gutter System with a service reference life of 30 years.

PCR

This EPD is developed according to the core rules for the product category of construction products in PCR EN 15804:2012+A2:2019.

Guarantee of Origin – certificates

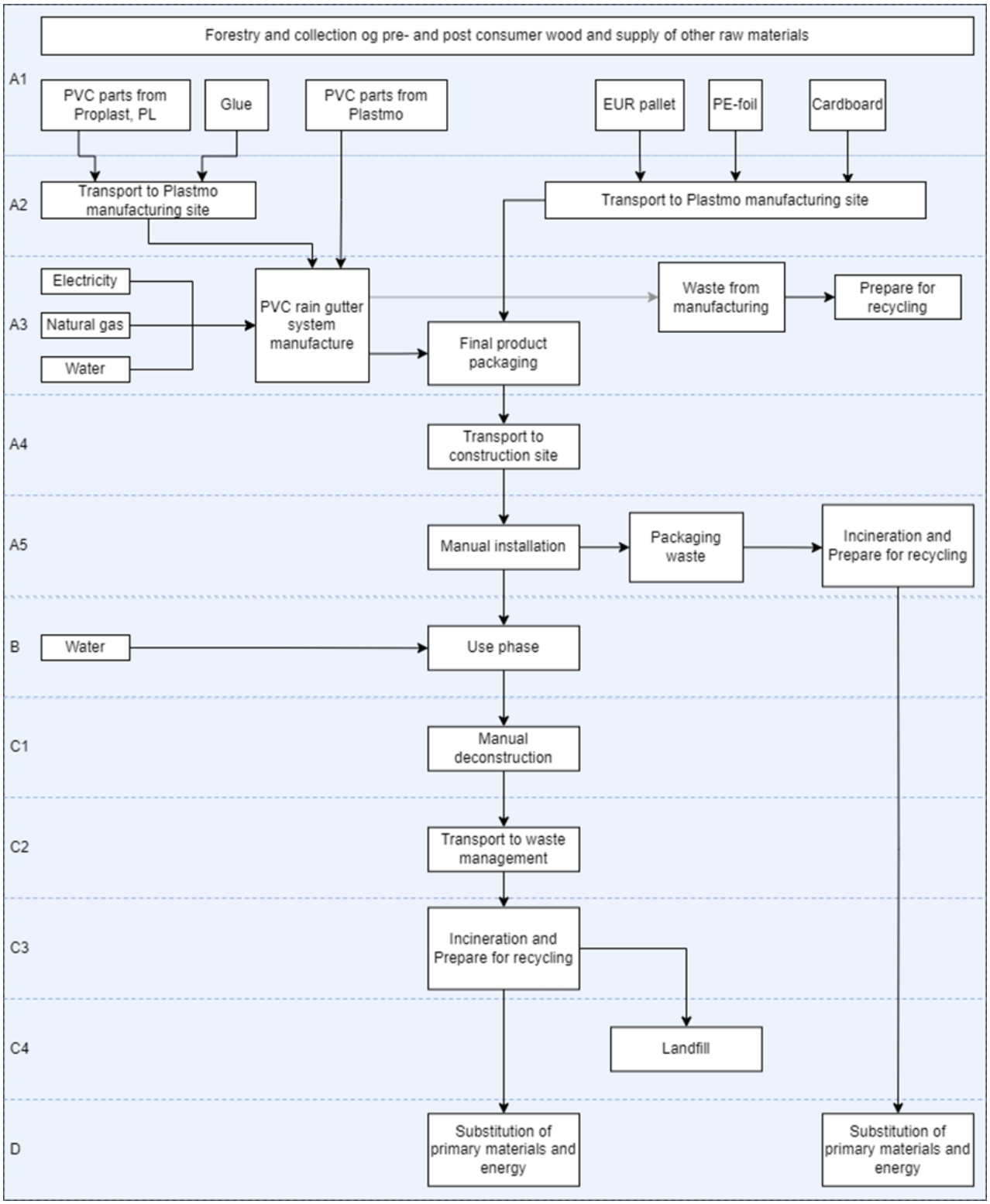
Foreground system:

The electricity production is modelled using electricity residual mix.

Background system:

Upstream and downstream processes are modelled using electricity grid mix.

Flowdiagram



System boundary

This EPD is based on a cradle-to-grave LCA, 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.

Product stage (A1-A3) includes:

A1 – Extraction and processing of raw materials

A2 – Transport to the production site

A3 – Manufacturing processes

The modules A1-A3 are aggregated and comprise the acquisition of all raw materials, products and energy, transport to the production site, packaging, and waste processing of both waste from manufacturing and treatment of raw material packaging waste up to the "end-of-waste" state or final disposal. The production waste from manufacturing is sent to recycling.

No benefits from recycling of waste or energy recovery from A3 is credited in module D.

The production process consists of the following steps: Raw material is delivered from the supplier in a tanker. Upon arrival at Plastmo, the material is blown directly from the tanker into a silo tank, where it is stored. When production starts, the material is sucked into an extrusion machine, where gutters and downpipes are produced and cut to the correct length. It is then packed directly from the machine ready for sale. Along the way, the material is heated so that it can be shaped and then it is cooled in recycled water.

Construction process stage (A4-A5) includes:

The main market is Denmark, Norway, other Scandinavian countries, and minimally to the Baltics.

The products are transported to the building site by truck. An average distance of 342.5 km by truck is used.

There is no waste associated with installation. The rain gutters are installed manually.

Use stage (B1-B7) includes:

The PVC Rain Gutter System needs very little maintenance. If dirt and leaves accumulate in the gutter, it can be manually removed with a brush. Dirt on the outside of the rain gutters can for sight's sake be removed with water on a cloth. It is assumed that the rain gutters are washed every 5 years and 10L of water is used each time, giving 60 L of water over a 30 year period.

As the cleaning is performed on the exterior of the system and out of doors using just water it is assumed the used water drains into the terrain rather than being transported to a waste water treatment facility.

End of Life (C1-C4) includes:

It is assumed the rain gutter system is deconstructed manually.

The product is transported 60 km by truck to a waste management facility in Europe.

Based on Miliute-Plepiene et al. (2021) and MST (2018) the waste handling of PVC is modeled as 32% recycling, 67% incineration with energy recovery, and 1% landfill.

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

Module D includes material credits and thermal and electrical energy credits from waste handling of product packaging and product waste from the modules A5 and C3.

LCA results

Environmental Impacts

ENVIRONMENTAL IMPACTS PER 30 meter PVC Rain Gutter System with RSL of 30 years											
Parameter	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B1, B3-B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	[kg CO_2 eq.]	4.04E+01	1.31E+00	1.94E+01	4.72E-03	0.00E+00	0.00E+00	1.63E-01	3.69E+01	2.35E-02	-2.87E+01
GWP-fossil	[kg CO_2 eq.]	5.91E+01	1.30E+00	7.78E-01	4.72E-03	0.00E+00	0.00E+00	1.61E-01	3.69E+01	2.35E-02	-2.84E+01
GWP-biogenic	[kg CO_2 eq.]	-1.87E+01	0.00E+00	1.87E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.55E-01
GWP-luluc	[kg CO_2 eq.]	4.59E-02	1.21E-02	6.17E-04	1.77E-06	0.00E+00	0.00E+00	1.50E-03	2.82E-03	6.51E-07	-1.38E-02
ODP	[kg CFC 11 eq.]	3.98E-08	1.69E-13	1.00E-13	2.36E-14	0.00E+00	0.00E+00	2.10E-14	2.69E-11	8.24E-11	-2.13E-09
AP	[mol H^+ eq.]	8.93E-02	1.85E-03	2.24E-04	8.35E-06	0.00E+00	0.00E+00	2.29E-04	8.27E-03	1.87E-05	-4.68E-02
EP-freshwater	[kg P eq.]	4.91E-04	4.76E-06	2.65E-07	6.91E-07	0.00E+00	0.00E+00	5.91E-07	7.83E-06	1.93E-07	-1.00E-04
EP-marine	[kg N eq.]	2.83E-02	6.58E-04	6.69E-05	5.00E-06	0.00E+00	0.00E+00	8.17E-05	2.68E-03	1.10E-04	-1.42E-02
EP-terrestrial	[mol N eq.]	3.10E-01	7.83E-03	9.80E-04	2.64E-05	0.00E+00	0.00E+00	9.72E-04	3.54E-02	8.31E-05	-1.52E-01
POCP	[kg NMVOC eq.]	1.57E-01	1.61E-03	1.76E-04	6.95E-06	0.00E+00	0.00E+00	2.00E-04	7.63E-03	3.61E-05	-6.28E-02
ADPm[1]	[kg Sb eq.]	1.07E-05	8.57E-08	5.20E-09	2.21E-10	0.00E+00	0.00E+00	1.06E-08	2.36E-07	5.54E-09	-2.10E-06
ADPf[1]	[MJ]	1.53E+03	1.77E+01	1.10E+00	7.18E-02	0.00E+00	0.00E+00	2.20E+00	5.93E+01	6.52E-02	-6.29E+02
WDP[1]	[m^3 world eq. deprived]	4.17E+00	1.57E-02	9.95E-02	2.58E+00	0.00E+00	0.00E+00	1.95E-03	3.64E+00	3.41E-03	-2.50E+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 Depletion Potential										
	The numbers are declared in scientific notation, e.g., 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.										

Additional Environmental Impacts

ADDITIONAL ENVIRONMENTAL IMPACTS PER 30 meter PVC Rain Gutter System with RSL of 30 years											
Parameter	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B1, B3-B7**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	9.01E-07	1.33E-08	1.47E-09	1.70E-10	0.00E+00	0.00E+00	1.65E-09	1.84E-07	4.41E-10	-3.99E-07
IRP[2]	[kBq U235 eq.]	3.81E+01	4.97E-03	2.59E-03	3.50E-04	0.00E+00	0.00E+00	6.17E-04	2.16E-01	1.61E-04	-1.13E+01
ETP-fw[1]	[CTUe]	7.88E+02	1.26E+01	7.32E-01	1.12E-01	0.00E+00	0.00E+00	1.56E+00	3.87E+01	1.07E+00	-2.92E+02
HTP-c[1]	[CTUh]	3.24E-08	2.58E-10	2.11E-11	4.37E-12	0.00E+00	0.00E+00	3.20E-11	1.61E-09	2.09E-12	-1.06E-08
HTP-nc[1]	[CTUh]	7.40E-07	1.38E-08	1.03E-09	3.93E-10	0.00E+00	0.00E+00	1.71E-09	1.53E-07	2.13E-10	-3.10E-07
SQP[1]	-	3.61E+02	7.41E+00	4.40E-01	1.04E-02	0.00E+00	0.00E+00	9.20E-01	1.28E+01	1.60E-01	-2.36E+02
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, e.g., 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.										

Resource Use

RESOURCE USE PER 30 meter PVC Rain Gutter System with RSL of 30 years											
Parameter	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B1, B3-B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	2.19E+02	1.29E+00	1.25E-01	1.36E-02	0.00E+00	0.00E+00	1.60E-01	1.41E+01	2.77E-03	-1.73E+02
PERM	[MJ]	1.98E+02	0.00E+00	-1.98E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	4.17E+02	1.29E+00	-1.98E+02	1.36E-02	0.00E+00	0.00E+00	1.60E-01	1.41E+01	2.77E-03	-1.73E+02
PENRE	[MJ]	1.53E+03	1.78E+01	1.10E+00	7.18E-02	0.00E+00	0.00E+00	2.21E+00	5.93E+01	5.11E+00	-6.29E+02
PENRM	[MJ]	5.05E+02	0.00E+00	-8.70E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.99E+02	-5.04E+00	0.00E+00
PENRT	[MJ]	2.04E+03	1.78E+01	2.32E-01	7.18E-02	0.00E+00	0.00E+00	2.21E+00	-4.40E+02	6.52E-02	-6.29E+02
SM	[kg]	1.06E+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
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
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
FW	[m^3]	2.89E-01	1.41E-03	2.39E-03	6.01E-02	0.00E+00	0.00E+00	1.76E-04	9.17E-02	7.94E-05	-1.43E-01
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, e.g., 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.										

Waste Categories and Output Flows

WASTE CATEGORIES AND OUTPUT FLOWS PER 30 meter PVC Rain Gutter System with RSL of 30 years											
Parameter	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B1,B3-B7**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	3.09E-05	5.51E-11	4.27E-12	2.71E-12	0.00E+00	0.00E+00	6.84E-12	1.43E-10	0.00E+00	-9.80E-06
NHWD	[kg]	6.76E-01	2.71E-03	9.67E-03	1.71E-02	0.00E+00	0.00E+00	3.37E-04	1.57E+01	0.00E+00	-5.17E-01
RWD	[kg]	2.91E-02	3.33E-05	1.61E-05	2.38E-06	0.00E+00	0.00E+00	4.14E-06	1.74E-03	7.62E-21	-2.38E-02
CRU	[kg]	0.00E+00	0.00E+00	1.06E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	3.93E-01	0.00E+00	5.27E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.96E+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
EEE	[MJ]	0.00E+00	0.00E+00	1.92E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.88E+01	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	3.43E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.86E+01	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 = Exported electrical energy; EET = Exported thermal energy										
	The numbers are declared in scientific notation, e.g., 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.										

Biogenic Carbon Content

BIOGENIC CARBON CONTENT PER 30 meter PVC Rain Gutter System with RSL of 30 years		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	0
Biogenic carbon content in accompanying packaging	[kg C]	5.1
Note: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

Additional information

LCA interpretation

The results in this EPD relate to a 30-meter PVC Rain Gutter System. The calculated environmental impacts clearly reflect the environmental impacts from the production of PVC in module A1 as the dominant source of impact.

Carbon footprint per kg of product and per m of product

The calculation of the GWP-total per kg is based on the calculated GWP-total for the FU divided by the weight of the product (28 kg). The same approach is used to calculate the GWP-total per meter, but instead the FU is divided by 30 m.

	A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
GWP-total of 30-meter system [kg CO_2 eq.]	4.04E+01	1.31E+00	1.94E+01	4.72E-03	0.00E+00	0.00E+00	1.63E-01	3.69E+01	2.35E-02	-2.87E+01
GWP-total per kg product [kg CO_2 eq.]	1.44E+00	4.68E-02	6.94E-01	1.69E-04	0.00E+00	0.00E+00	5.81E-03	1.32E+00	8.41E-04	-1.03E+00
GWP-total per m product [kg CO2 eq.]	1.35E+00	4.36E-02	6.48E-01	1.57E-04	0.00E+00	0.00E+00	5.42E-03	1.23E+00	7.85E-04	-9.58E-01

Conversion to other PVC Rain Gutter Systems

The results are related to the rain gutter system size No.11/ø75. If other system sizes is used, the EPD results can be used by multiplying the environmental impact results with the conversion factor below.

Rain gutter system size	Quantity (kg)	Conversion factor
No. 10 / ø75	23.8	0.85
No. 11 / ø75	28.0	1
No. 11 / ø90	29.9	1.07
No. 12 / ø75	34.6	1.23
No. 12 / ø90	36.2	1.29
No. 12 / ø110	38.3	1.37

Technical information on scenarios

Transport to the building site (A4)

Scenario information	Value	Unit
Fuel type	Diesel	-
Vehicle type	Truck, EURO 6	-
Transport distance	342.5	km
Capacity utilisation (including empty runs)	20-26t gross weight / 17.3t payload capacity / utilisation factor 55%	%
Gross density of products transported	222	kg/m^3
Capacity utilisation volume factor	1	-

Installation of the product in the building (A5)

Scenario information	Value	Unit
Ancillary materials	<0.2 (glue)	kg
Water use	0	m^3
Other resource use	0	kg
Energy type and consumption	0	kWh
Waste materials	11.5	kg
Output materials	0	kg
Direct emissions to air, soil or water	0	kg

Reference service life

RSL information		Unit
Reference service Life	30	Years
Declared product properties	30-meter PVC Rain Gutter System	-
Assumed quality of work	Instructions are available at www.plastmo.dk	-
Maintenance	Cleaning exterior with water every 5 years	-

Use (B1-B7)

Scenario information	Value	Unit
B2 - Maintenance		
Maintenance process	Cleaning with water	-
Maintenance cycle	1	times/5 years
Ancillary materials for maintenance - none	-	-
Waste materials resulting from maintenance - none	-	-
Net freshwater consumption during maintenance	10	L/cycle
Energy input during maintenance	0	kWh

End of life U(C1-C4)

Scenario information	Value	Unit
Collected separately - PVC	9.24	kg
Collected with mixed waste	18.8	kg
For reuse	0	kg
For recycling	8.96	kg
For energy recovery	18.8	kg
For final disposal	0.28	kg
Assumptions for scenario development	60 km with a EURO 6 truck to waste handling.	-

Re-use, recovery and recycling potential (D)

Scenario information/Materiel	Value
Scenario information/Material	Quantity per FU
Plastic waste from packaging	
MFR (kg)	0.075
EET (MJ)	1.5
EEE (MJ)	2.67
Cardboard waste from packaging	
MFR (kg)	0.144
EET (MJ)	0.12
EEE (MJ)	0.218
Wood waste from packaging	
MFR (kg)	0.308
EET (MJ)	0.299
EEE (MJ)	0.538
Product credits, end of life (C3)	
PVC	
MFR (kg)	8.96
EET (MJ)	48.8
EEE (MJ)	88.6

Indoor air

The EPD does not give information on release of dangerous substances to indoor air because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A1 chapter 7.4.1.

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+A1 chapter 7.4.2.

References

Publisher	epddanmark www.epddanmark.dk Template version 2023.1
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3rd party verifier	David Althoff Palm Dalemarken AB Beryllvägen 25 442 60 Kode Sweden

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”

BUILD service life table version 2021
https://vbn.aau.dk/ws/portalfiles/portal/465276076/BUILD_Levetidstabel_version_2021.pdf

Jurate Miliute-Plepiene, Anna Fråne, Alexandra Maria Almasi (2021), Overview of polyvinyl chloride (PVC) waste management practices in the Nordic countries https://doi.org/10.1016/j.clet.2021.100246

MST (2018) Kortlægning af PVC i Danmark 2018, Miljøprojekt nr. 2049
https://www2.mst.dk/Udgiv/publikationer/2018/11/978-87-7038-000-3.pdf