Environmental Product Declaration

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

ECORASTER® Permeable Paving Grid

from

PURUS Plastics GmbH

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products, based on worst-case results
EPD registration number:	EPD-IES-0025796:001
Version date:	2025-12-09
Validity date:	2030-12-09

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com

GENERAL INFORMATION

Programme Information	
Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	support@environdec.com

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): Construction products (EN 15804+A2), PCR 2019:14, VERSION 2.0.1, UN CPC 3699.
PCR review was conducted by: The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com. The review panel may be contacted via support@environdec.com. Members of the Technical Committee were requested to state any potential conflict of interest with the PCR Committee, and if there were conflicts of interest they were excused from the review. Most recent review chair: Rob Rouwette (chair), Noa Meron (co-chair).

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ **Individual EPD verification without a pre-verified LCA/EPD tool** Third-party verifier: *Sascha Iqbal, IQ Consult GmbH* 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 published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.
For further information about comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD:
PURUS Plastics GmbH (https://www.purus-plastics.com)

Address:
Am Blätterrangen 4, 95659 Arzberg, GERMANY

Contact:
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Address and contact information of the LCA practitioner commissioned by the EPD owner, if applicable:
Gregory Herfray, gregory.herfray@recto-eko.fr
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FRANCE

Description of the organisation:
Purus Plastics GmbH is a recycling and injection moulding company producing plastic paving systems, green roof trays, plastic pallets and cable drums made of post-consumer PO.

PRODUCT INFORMATION

EPD of multiple products, based on worst-case results
Products names:
ECORASTER E50®, ECORASTER E40 XXL®, ECORASTER E40®, ECORASTER BLOXX®, ECORASTER E30®, ECORASTER S50®, ECORASTER X30®

Type	Surface weight [kg/m²]
E50	8.82
E 40 XXL	4.79
E 40	5.94
Bloxx	7.02
E 30	5.31
S50	6.66
X 30	6.57

The declared product is ECORASTER E50®, which is the worst-case product regarding the impact assessment and also the most sold ECORASTER product.

UN CPC code:
3699 Articles of Plastic n.e.c.

Product description:

ECORASTER is a hard-wearing and sustainable ground reinforcement system for the stabilization of permeable ground, which has been developed, manufactured and enhanced by PURUS Plastics for more than twenty years.

The used materials guarantee high load values (DIN 1072/20 to axle load). The durable and weather-resistant material can withstand loads of up to 800 to/m². ECORASTER ground reinforcement element is certified high-quality UV- and weather-resistant (-50/+90°C).

Areas covered with ECORASTER retain the natural rainwater retention properties of the ground and are classed as “permeable”.

ECORASTER systems can be enhanced with a range of different filling options: Vegetation, gravel, concrete blocks, ...

This system can be used in almost any application, particularly in gardening/landscaping and civil engineering, for equestrian sports as well as forestry and agricultural applications.

Name and location of production site(s): Arzberg, DE

https://www.purus-plastics.com/ecoraster/

CONTENT DECLARATION

The mass (weight) of one unit of a product, per declared unit: 1 m2 of ECORASTER E50® recycled plastic permeable paving grid.

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Recycled LDPE	5.292	60	0	0
Recycled HDPE	1.764	20	0	0
Recycled PP	1.764	20	0	0
TOTAL	8.82	100	0	0

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
Plastic pallet 27 % LDPE, 16 % HDPE, 57 % PP)	0.11	1.22	0
Plastic film	Cut off	-	-
Plastic strips	Cut off	-	-
TOTAL	0,11	1.22	0

The product does not contain hazardous substances from the candidate list of SVHC (date 25-Jun-2025; 250 substance entries listed) exceeding 0.1% of its weight.

LCA INFORMATION

Declared unit: 1m² of ECORASTER E50®
This corresponds to 8.82 kg

Time representativeness:
data have been collected for the year 2024

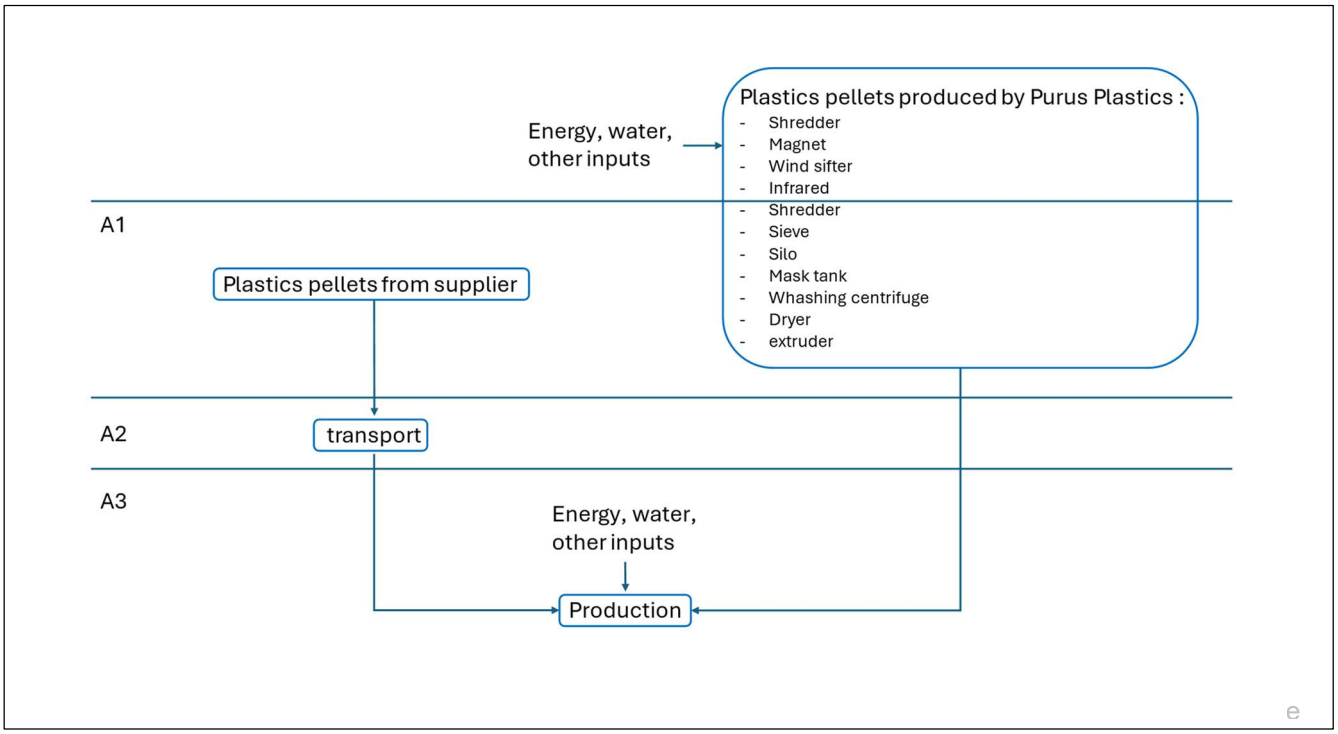
Geographical scope:
A1-A3: A1: Germany/Italy, A2: Europe, A3: Germany
C1-C4: Europe

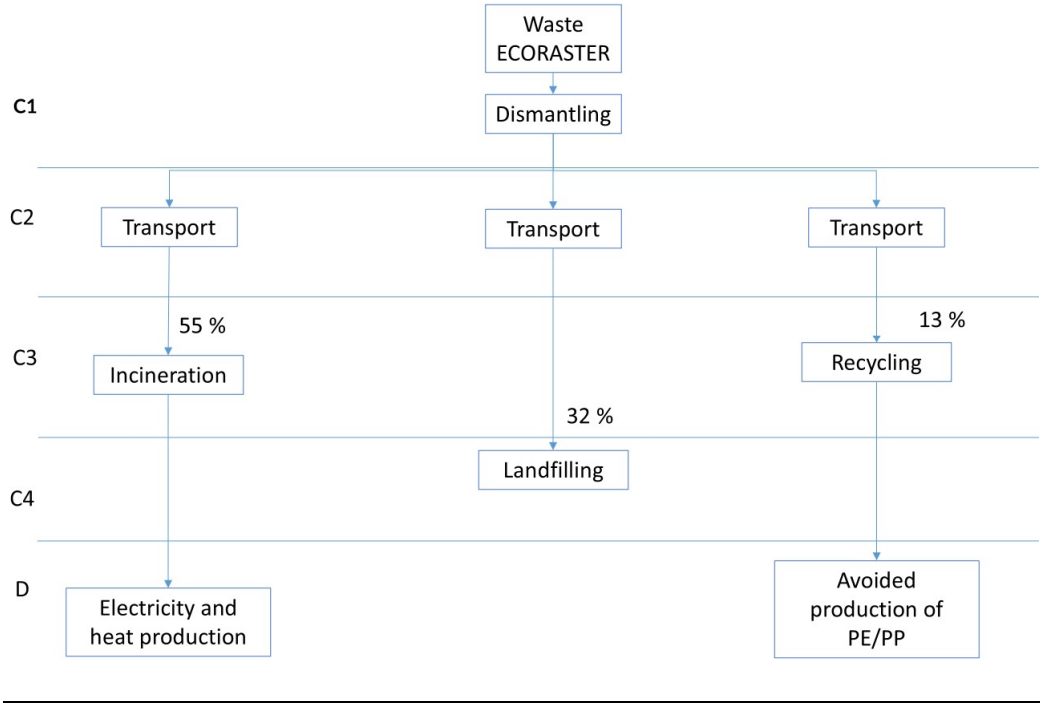
Database(s) and LCA software used: Open LCA 2.5.0 with ecoinvent 3.11_EN15804

Description of system boundaries:

a) Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D)

Process flow diagram:





More information:

As the transport to installation site, installation may vary, the A4 and A5 modules are not included in this study. The B1-B7 are not included as they have no impact during the lifespan of the product.

Module A1 – Includes the contribution to the impact of the production of recycled plastic used for the production of ECORASTER. In the case of recycling by PURUS Plastics, the boundaries have been set in consistence with the determination of the End Of Waste status of the plastics waste and the modelling is based on specific data. When the recycled plastic pellets are bought from suppliers, generic data is used as a conservative approach.

GWP-GHG recycled plastics input from Purus Plastics (specific data): 71 kgCO2 eq./t.
GWP-GHG recycled plastics input from suppliers (generic data): 1573 kgCO2 eq./t.
The difference between the impact value of the two datasets is linked to a more specific End Of Waste status determination in the case of the specific data (generic data is used here in a conservative approach) and to the use of a 100 % hydropower electricity mix covered by Guarantees of Origin in the case of Purus Plastics specific modelling.

Module A2 – Transportation from the suppliers of the bought plastics granulates in Germany and Italy to the Purus Plastics plant in Germany. Transport by truck from the supplier's production site, distances 105 and 763 km.

Module A3 – Includes production of ECORASTER by injection/moulding. The main inputs for the production process are secondary materials and energy in form of electricity. The electricity consumption of Purus Plastics is covered by guarantees of origin from hydropower plants. The A3 module also includes the production and transportation of the ECORASTER's packaging.

A specific mix, covered by GO's, is used for electricity, its contribution to GWP-GHG indicator is 0.05659 kgCO2eq/kWh.

Module C1 – Includes dismantling by hand and fuel consumption for logistics.
Module C2 – transport on a distance of 100 km, by truck.
Modules C3/C4 – Based on data from Material Economics (2022). The scenario is:

- 13% Recycling
- 32% Landfill
- 55% Incineration w/ energy recovery

Module D

Recycling of plastics:
- Loads: recycling process
- Benefits: avoided production of virgin PE/PP

Energy production for plastic treatment by incineration:
- 3.93MJ/kg electric energy
- 7.67MJ/kg thermal energy.

Declaration of sources and share of primary data for GWP-GHG results for A1-A3

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
electricity, medium voltage, E.ON mix	Collected data Database, adapted	EPD owner Ecoinvent v3.11	2024	50 % Primary data 50 % generic data	32 %
market for transport, freight, lorry >32 metric ton, EURO5 | transport, freight, lorry >32 metric ton, EURO5 | Cutoff, U - RER	Database, adapted	Ecoinvent v3.11	2024	50 % Primary data 50 % generic data	17 %
Other process	Database	Ecoinvent v3.11	2024	Generic data	0 %
Total share of primary data, of GWP-GHG results for A1-A3					**49 %**

DATA SOURCES AND QUALITY	Specific data have been collected from PURUS Plastics for the year 2024. Generic data are from ecoinvent 3.11_EN15804 **Data quality assessment** The End of life is based only on assumptions and scenarios and appears less relevant.
CUT-OFF RULES	No relevant processes have been excluded from the study. The construction of plants, production of machines and transportation systems, (i.e., any infrastructure) are excluded since the related flows are supposed to be negligible compared to the production of the product when compared to the system's lifetime level. Generic datasets used in the LCA model include capital goods and infrastructure within their system boundaries. Flows related to human activities such as employee transport are also excluded.
ALLOCATIONS	PURUS Plastics products are manufactured from plastic waste treated on-site as well as from recycled plastic pellets purchased from third party suppliers located in Germany and Italy. For the on-site treatment, the primary input material is post-consumer plastic packaging waste sourced through several German Dual Systems ('Duales System'). This material is considered to have reached its end-of-waste (EoW) state at the stage of shredding, after the infrared step of the Purus plastic waste treatment / recycling process. This stage marks the point at which the material acquires economic value and can be sold. The environmental burdens associated with the material's previous life cycle, before reaching the EoW state, are allocated to the previous product system that generated the waste. The allocation criteria are based on the mass flow of products leaving the factory where ECORASTER® is produced.

Specific data	Tech	Geo	Temp	Precision	Global
A1 Raw materials characteristics	1	1	1	1	1
A2 Distances	1	1	1	1	1
A3 production process	1	1	1	2	1,25

	When energy and water usage cannot be directly attributed to ECORASTER®, the total quantity used in the factory was divided by the total mass of products produced during the considered data collection time period. The impact due to the treatment of waste generated within the system boundaries (Drop Paper and packaging) is allocated to the product until waste reaches the end-of- waste state.
LCA METHODOLOGY	In addition to EN 15804:2019+A2 and PCR 2019:14 v2.0.1, the study was carried out in accordance with ISO 14040:2006, ISO 14044:2006, and the GPI v5.0.1 of the International EPD® system.

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

	Product stage			Distribution/ installation stage		Use stage							End-of-life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	DE//IT	EUR	DE	-	-	-	-	-	-	-	-	-	EUR	EUR	EUR	EUR	
Share of primary data	49 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	--20% / -46%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0 % (single site)			-	-	-	-	-	-	-	-	-	-	-	-	-	-

ENVIRONMENTAL PERFORMANCE

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

The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3)

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	1.34 E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.59 E-01	1.68 E-01	1.62 E+01	3.26 E-01	-3.21 E+00
GWP-fossil	kg CO_2 eq.	9.37 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.59 E-01	1.68 E-01	1.62 E+01	3.26 E-01	-3.85 E+00
GWP-biogenic	kg CO_2 eq.	3.66 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.22 E-05	1.15 E-04	1.48 E-02	1.35 E-04	6.43 E-01
GWP-luluc	kg CO_2 eq.	3.42 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.63 E-05	5.56 E-05	1.37 E-03	1.85 E-05	-4.34 E-03
ODP	kg CFC 11 eq.	4.00 E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.36 E-09	3.66 E-09	1.11 E-08	7.76 E-10	-1.46 E-07
AP	mol H^+ eq.	2.39 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.42 E-03	5.39 E-04	4.77 E-03	2.15 E-04	-1.17 E-02
EP-freshwater	kg P eq.	2.82 E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.13 E-06	1.15 E-05	4.53 E-04	3.17 E-06	-1.34 E-03
EP-marine	kg N eq.	9.73 E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.62 E-04	1.81 E-04	1.77 E-03	7.09 E-04	-1.57 E-03
EP-terrestrial	mol N eq.	5.80 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.24 E-03	1.97 E-03	1.48 E-02	8.95 E-04	-2.21 E-02
POCP	kg NMVOC eq.	1.85 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.17 E-03	8.17 E-04	4.08 E-03	3.92 E-04	-1.89 E-02
ADP-minerals&metals*	kg Sb eq.	5.20 E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.85 E-08	5.79 E-07	6.69 E-06	5.87 E-08	-8.71 E-06
ADP-fossil*	MJ	8.05 E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.07 E+00	2.38 E+00	1.23 E+01	6.85 E-01	-1.31 E+02
WDP*	m^3	1.30 E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.34 E-03	1.25 E-02	6.84 E-01	3.01 E-02	-1.42 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.*

" The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks."

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[1]	kg CO_2 eq.	9.77E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.59E-01	1.68E-01	1.62E+01	3.26E-01	-3.86E+00

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	4.87E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.30E-02	3.87E-02	2.82E+00	9.16E-03	-6.79E+00
PERM	MJ	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	4.87E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.30E-02	3.87E-02	2.82E+00	9.16E-03	-6.79E+00
PENRE	MJ	8.05E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.07E+00	2.38E+00	1.23E+01	6.85E-01	-1.31E+02
PENRM	MJ	3.12E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	-2.12E+02	-9.99E+01	0.00E+00
PENRT	MJ	3.93E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.07E+00	2.38E+00	-2.00E+02	-9.92E+01	-1.31E+02
SM	kg	2.05E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.19E-03	2.29E-03	2.01E+00	4.74E-04	1.72E+00
RSF	MJ	1.26E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.23E-04	5.39E-04	8.10E-02	7.27E-05	-2.57E-01
NRSF	MJ	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.13E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.33E-04	2.87E-04	9.63E-03	-1.04E-02	-3.38E-02
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															

[1] 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_2 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	3.16 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.85 E-03	2.42 E-03	1.25 E-01	8.42 E-04	-3.65 E-02
Non-hazardous waste disposed	kg	1.15 E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.36 E-02	2.58 E-02	6.07 E+00	7.45 E+00	-3.23 E+01
Radioactive waste disposed	kg	4.26 E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.17 E-07	7.00 E-07	7.43 E-05	1.36 E-07	-2.29 E-04

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	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	1.10 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.78 E-04	2.07 E-03	1.33 E+00	3.30 E-04	-3.81 E-01
Materials for energy recovery	kg	0.00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	2.90 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.65 E-05	4.58 E-04	1.05 E+00	6.02 E-05	-1.50 E-01
Exported energy, thermal	MJ	2.10 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.58 E-05	5.54 E-04	1.00 E+00	7.25 E-05	-5.55 E-03

BIOGENIC CARBON CONTENT PER DECLARED UNIT (1 m^2)		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in accompanying packaging	kg C	0

Additional LCA results of the products – Alternative EoL scenarios

In line with PCR:2019 the LCA results for three 100% EoL scenario are presented in the following tables. The scenarios are based on 100% recycling, 100% incineration with energy recovery, and 100% landfilling.

100 % Incineration
Results per functional or declared unit

Indicator	Unit	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	1.59 E-01	1.68 E-01	2.31 E+01	0.00 E+00	-7.05 E+00
GWP-fossil	kg CO_2 eq.	1.59 E-01	1.68 E-01	2.31 E+01	0.00 E+00	-6.93 E+00
GWP-biogenic	kg CO_2 eq.	3.22 E-05	1.15 E-04	4.59 E-04	0.00 E+00	-1.12 E-01
GWP-luluc	kg CO_2 eq.	1.63 E-05	5.56 E-05	6.68 E-05	0.00 E+00	-9.83 E-03
ODP	kg CFC 11 eq.	2.36 E-09	3.66 E-09	3.14 E-09	0.00 E+00	-2.19 E-07
AP	mol H^+ eq.	1.42 E-03	5.39 E-04	2.95 E-03	0.00 E+00	-1.94 E-02
EP-freshwater	kg P eq.	5.13 E-06	1.15 E-05	3.36 E-05	0.00 E+00	-3.04 E-03
EP-marine	kg N eq.	6.62 E-04	1.81 E-04	1.43 E-03	0.00 E+00	-4.05 E-03
EP-terrestrial	mol N eq.	7.24 E-03	1.97 E-03	1.52 E-02	0.00 E+00	-3.72 E-02
POCP	kg NMVOC eq.	2.17 E-03	8.17 E-04	3.75 E-03	0.00 E+00	-1.45 E-02
ADP-minerals &metals*	kg Sb eq.	5.85 E-08	5.79 E-07	6.11 E-07	0.00 E+00	-9.12 E-06

100 % Landfilling
Results per functional or declared unit

Indicator	Unit	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	1.59 E-01	1.68 E-01	0.00 E+00	1.02 E+00	0.00 E+00
GWP-fossil	kg CO_2 eq.	1.59 E-01	1.68 E-01	0.00 E+00	1.02 E+00	0.00 E+00
GWP-biogenic	kg CO_2 eq.	3.22 E-05	1.15 E-04	0.00 E+00	4.20 E-04	0.00 E+00
GWP-luluc	kg CO_2 eq.	1.63 E-05	5.56 E-05	0.00 E+00	5.77 E-05	0.00 E+00
ODP	kg CFC 11 eq.	2.36 E-09	3.66 E-09	0.00 E+00	2.43 E-09	0.00 E+00
AP	mol H^+ eq.	1.42 E-03	5.39 E-04	0.00 E+00	6.72 E-04	0.00 E+00
EP-freshwater	kg P eq.	5.13 E-06	1.15 E-05	0.00 E+00	9.91 E-06	0.00 E+00
EP-marine	kg N eq.	6.62 E-04	1.81 E-04	0.00 E+00	2.22 E-03	0.00 E+00
EP-terrestrial	mol N eq.	7.24 E-03	1.97 E-03	0.00 E+00	2.80 E-03	0.00 E+00
POCP	kg NMVOC eq.	2.17 E-03	8.17 E-04	0.00 E+00	1.22 E-03	0.00 E+00
ADP-minerals &metals*	kg Sb eq.	5.85 E-08	5.79 E-07	0.00 E+00	1.83 E-07	0.00 E+00

100 % Recycling
Results per functional or declared unit

Indicator	Unit	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	1.59 E-01	1.68 E-01	1.28 E+01	0.00 E+00	-8.33 E-01
GWP-fossil	kg CO_2 eq.	1.59 E-01	1.68 E-01	1.27 E+01	0.00 E+00	-6.16 E+00
GWP-biogenic	kg CO_2 eq.	3.22 E-05	1.15 E-04	1.12 E-01	0.00 E+00	5.33 E+00
GWP-luluc	kg CO_2 eq.	1.63 E-05	5.56 E-05	1.03 E-02	0.00 E+00	-8.71 E-05
ODP	kg CFC 11 eq.	2.36 E-09	3.66 E-09	7.07 E-08	0.00 E+00	-3.78 E-07
AP	mol H^+ eq.	1.42 E-03	5.39 E-04	2.25 E-02	0.00 E+00	-2.45 E-02
EP-freshwater	kg P eq.	5.13 E-06	1.15 E-05	3.33 E-03	0.00 E+00	-4.60 E-05
EP-marine	kg N eq.	6.62 E-04	1.81 E-04	6.63 E-03	0.00 E+00	1.62 E-03
EP-terrestrial	mol N eq.	7.24 E-03	1.97 E-03	4.03 E-02	0.00 E+00	-4.41 E-02
POCP	kg NMVOC eq.	2.17 E-03	8.17 E-04	1.33 E-02	0.00 E+00	-9.65 E-02
ADP-minerals &metals*	kg Sb eq.	5.85 E-08	5.79 E-07	4.86 E-05	0.00 E+00	-3.61 E-05

ADP-fossil*	MJ	2.07 E+00	2.38 E+00	2.27 E+00	0.00 E+00	-1.35 E+02
WDP*	m^3	5.34 E-03	1.25 E-02	6.00 E-01	0.00 E+00	-2.06 E+00

Indicator	Unit	C1	C2	C3	C4	D
GWP-GHG[2]	kg CO_2 eq.	1.59 E-01	1.68 E-01	2.31E +01	0.00E +00	-6.95E +00

Indicator	Unit	C1	C2	C3	C4	D
PERE	MJ	1.30E -02	3.87E -02	5.64E -02	0.00E +00	-1.68E +01
PERM	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
PERT	MJ	1.30E -02	3.87E -02	5.64E -02	0.00E +00	-1.68E +01
PENRE	MJ	2.07E +00	2.38E +00	2.27E +00	0.00E +00	-1.35E +02
PENRM	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
PENRT	MJ	2.07E +00	2.38E +00	2.27E +00	-9.92E +01	-1.35E +02

ADP-fossil*	MJ	2.07 E+00	2.38 E+00	0.00 E+00	2.14 E+00	0.00 E+00
WDP*	m^3	5.34 E-03	1.25 E-02	0.00 E+00	9.41 E-02	0.00 E+00

Indicator	Unit	C1	C2	C3	C4	D
GWP-GHG[3]	kg CO_2 eq.	1.59 E-01	1.68 E-01	0.00E +00	1.02E +00	0.00E +00

Indicator	Unit	C1	C2	C3	C4	D
PERE	MJ	1.30E -02	3.87E -02	0.00E +00	2.86E -02	0.00E +00
PERM	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
PERT	MJ	1.30E -02	3.87E -02	0.00E +00	2.86E -02	0.00E +00
PENRE	MJ	2.07E +00	2.38E +00	0.00E +00	2.14E +00	0.00E +00
PENRM	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
PENRT	MJ	2.07E +00	2.38E +00	0.00E +00	2.14E +00	0.00E +00

ADP-fossil*	MJ	2.07 E+00	2.38 E+00	8.35 E+01	0.00 E+00	-5.50 E+02
WDP*	m^3	5.34 E-03	1.25 E-02	2.60 E+00	0.00 E+00	-3.93 E+00

Indicator	Unit	C1	C2	C3	C4	D
GWP-GHG[4]	kg CO_2 eq.	1.59 E-01	1.68 E-01	1.27E +01	0.00E +00	-6.16E +00

Indicator	Unit	C1	C2	C3	C4	D
PERE	MJ	1.30E -02	3.87E -02	2.14E +01	0.00E +00	4.63E +00
PERM	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
PERT	MJ	1.30E -02	3.87E -02	2.14E +01	0.00E +00	4.63E +00
PENRE	MJ	2.07E +00	2.38E +00	8.35E +01	0.00E +00	-5.50E +02
PENRM	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
PENRT	MJ	2.07E +00	2.38E +00	8.35E +01	0.00E +00	-5.50E +02

[2] 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_2 is set to zero.

[3] 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_2 is set to zero.

[4] 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_2 is set to zero.

SM	kg	1.19E-03	2.29E-03	8.03E-03	4.74E-04	-1.05E+00
RSF	MJ	1.23E-04	5.39E-04	4.09E-04	7.27E-05	-6.22E-01
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.33E-04	2.87E-04	4.15E-03	-1.04E-02	-4.80E-02

Indicator	Unit	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.85E-03	2.42E-03	1.65E-01	8.42E-04	-9.28E-02
Non-hazardous waste disposed	kg	1.36E-02	2.58E-02	9.13E+00	7.45E+00	-7.01E-01
Radioactive waste disposed	kg	2.17E-07	7.00E-07	6.39E-07	1.36E-07	-5.45E-04

Indicator	Unit	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	9.78E-04	2.07E-03	3.58E-03	3.30E-04	-1.03E+00

SM	kg	1.19E-03	2.29E-03	0.00E+00	1.48E-03	0.00E+00
RSF	MJ	1.23E-04	5.39E-04	0.00E+00	2.27E-04	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.33E-04	2.87E-04	0.00E+00	-3.26E-02	0.00E+00

Indicator	Unit	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.85E-03	2.42E-03	0.00E+00	2.63E-03	0.00E+00
Non-hazardous waste disposed	kg	1.36E-02	2.58E-02	0.00E+00	2.33E+01	0.00E+00
Radioactive waste disposed	kg	2.17E-07	7.00E-07	0.00E+00	4.25E-07	0.00E+00

Indicator	Unit	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	9.78E-04	2.07E-03	0.00E+00	1.03E-03	0.00E+00

SM	kg	1.19E-03	2.29E-03	1.54E+01	0.00E+00	1.68E+01
RSF	MJ	1.23E-04	5.39E-04	6.21E-01	0.00E+00	1.28E-01
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.33E-04	2.87E-04	5.41E-02	0.00E+00	-9.75E-02

Indicator	Unit	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.85E-03	2.42E-03	1.66E-01	0.00E+00	3.34E-02
Non-hazardous waste disposed	kg	1.36E-02	2.58E-02	7.89E+00	0.00E+00	-2.46E+02
Radioactive waste disposed	kg	2.17E-07	7.00E-07	5.68E-04	0.00E+00	8.33E-05

Indicator	Unit	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	9.78E-04	2.07E-03	1.36E+00	0.00E+00	5.46E-01

Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy. electricity	MJ	9.65E-05	4.58E-04	3.13E-04	6.02E-05	-3.61E-01	Exported energy. electricity	MJ	9.65E-05	4.58E-04	0.00E+00	1.88E-04	0.00E+00	Exported energy. electricity	MJ	9.65E-05	4.58E-04	3.77E-01	0.00E+00	6.67E-02
Exported energy. thermal	MJ	4.58E-05	5.54E-04	8.70E-04	7.25E-05	-5.92E-03	Exported energy. thermal	MJ	4.58E-05	5.54E-04	0.00E+00	2.26E-04	0.00E+00	Exported energy. thermal	MJ	4.58E-05	5.54E-04	7.21E-03	0.00E+00	-2.27E-02

ADDITIONAL ENVIRONMENTAL INFORMATION

The declared product is the ECORASTER E50®, which is the worst-case scenario for the environmental impacts. As the impacts are directly proportional to the surface weight of the products, the conversion factors for the impact results for the other products are given in the following table. The conversion factors are expressed as multiplying factors, i.e., the declared LCA results can be multiplied with the conversion factor to calculate the results per specific product.

ECORASTER E40 XXL®	0.54
ECORASTER E40 ®	0.67
ECORASTER BLOXX®	0.80
ECORASTER E30®	0.60
ECORASTER S50®	0.76
ECORASTER X30®	0.74

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
DE	Germany (Deutschland)
EoL	End-of-Life
EoW	End-of-Waste
EUR	Europe
HDPE	HIGH Density PolyEthylene
IT	Italy
LDPE	LOW Density PolyEthylene
ND	Not Declared
PO	PolyOlefins
PP	PolyPropylene
SVHC	Substance of Very High Concern

REFERENCES

a) EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.

b) GENERAL PROGRAMME INSTRUCTIONS FOR THE INTERNATIONAL EPD SYSTEM version 5.0.1 2025-02-27

c) ISO 14025:2006 - Environmental labels and declarations — Type III environmental declarations — Principles and procedures

d) ISO 14040:2006 - Environmental management — Life cycle assessment — Principles and framework

e) ISO 14044:2006 - Environmental management — Life cycle assessment — Requirements and guidelines

f) PCR 2019:14 - Construction products (EN 15804+A2) (version 2.0.1), The International EPD® System

g) Material Economics, 2022. Europe's Missing Plastics - Taking Stock of EU Plastics Circularity. Commissioned by Agora Industry.https://materialeconomics.com/sites/default/files/2024-06/material-economics-europe-s-missing-plastics%20%282%29.pdf

VERSION HISTORY

Original Version of the EPD, 2025-12-09

EPD
INTERNATIONAL EPD SYSTEM
www.environdec.com