

# Environmental Product Declaration

**EPD**  
INTERNATIONAL EPD SYSTEM



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

## **egeplast Macroduct High-T / Power Protect PE-RT**

From



**egeplast**

Programme:

Programme operator:

EPD registration number:

Publication date:

Valid until:

The International EPD® System, [www.environdec.com](http://www.environdec.com)

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## 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>
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<b>Accountabilities for PCR, LCA and independent, third-party verification</b>
<b>Product Category Rules (PCR)</b>
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): <i>PCR 2019:14 Construction products (EN 15804:A2)(2.0.1)</i>
PCR review was conducted by: The Technical Committee of the International EPD System. See <a href="http://www.environdec.com">www.environdec.com</a> for a list of members. Review Chair: Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat <a href="http://www.environdec.com/contact">www.environdec.com/contact</a> .
<b>Life Cycle Assessment (LCA)</b>
LCA accountability: <i>Tyréns Sverige AB</i>
<b>verification</b>
External and independent ('third-party') verification of the declaration and data, according to ISO 14025:2006, via EPD verification through:
<input checked="" type="checkbox"/> Fully pre-verified EPD tool
Third-party verifier: Accountable for the tool and EPD verification: Marcus Wendin, Miljögiraff AB, Fully pre-verified tool: Tyréns EPD-generator 3.1.0 – Egeplast.
Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier:
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 programs, 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 characterization 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:

Egeplast international GmbH, Robert-Bosch-Str. 7, D-48268 Greven, Germany

Contact:

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Head of the industrial department, Egeplast  
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E-mail Thorsten.Spaeth@egeplast.de

Description of the organisation:

Egeplast is a highly innovative manufacturer of plastic pipe systems that has been setting standards for decades. Customers in over 30 countries rely on quality products and consulting solutions from Egeplast. Our customers include some of the largest and most demanding utility companies and network operators in the world. The product range offers a solution for almost every challenge our customers face. The focus is on intelligent pipe systems for modern trenchless installation and renovation methods and special solutions. The products give our customers maximum investment security - Egeplast pipe systems are future-proof. Research and development have a long tradition at Egeplast. The company is known as an innovator for multilayer pipes. Over 60 patents for products and manufacturing processes are proof of its technological leadership. Founded in 1908 by Engelbert Gröter, Egeplast is still family-owned and owner-managed today in the fourth generation. The initials of the founder can be found in the company name. Highly qualified and motivated employees are committed to our customers every day. The head office and production site is in Greven/Westphalia. Here, Egeplast operates the most modern plant for polymer pipe systems in Europe. We develop tailor-made solutions with our customers in a separate technology center. The Egeplast Group also has two pipe production sites in Sweden (Extena) and England (Westwood).

Name and location of production site(s):

Egeplast international GmbH, Robert-Bosch-Straße 7, D-48268 Greven, Germany

## Product information

Product name: egeplast Macroduct High-T / Power Protect PE-RT

Product identification: egeplast Macroduct High-T / Power Protect PE-RT

Product description: The Power Protect Cable Protection pipes are Cable Protection pipes made of high-density polyethylene, PE100 RT or PE100 RC/RT . The long service life of over 50 years at a long-term temperature of 70°C, high flexibility and workability even at low temperatures are quality features of this pipe. They are used for high and extra-high voltage cables up to 525 kV.

UN CPC code: 36320

Geographical scope:

Module A1 and A2 Material suppliers are European

Module A3 production is located in Germany

Module C and D scenarios are for Europe

## LCA information

Functional unit / declared unit: 1 kg pipe

Conversion factor for the product is 1 kg per kg

Reference service life: Not declared

Time representativeness: The LCA is based on production data from but is deemed to be representative of an average year of production.2023

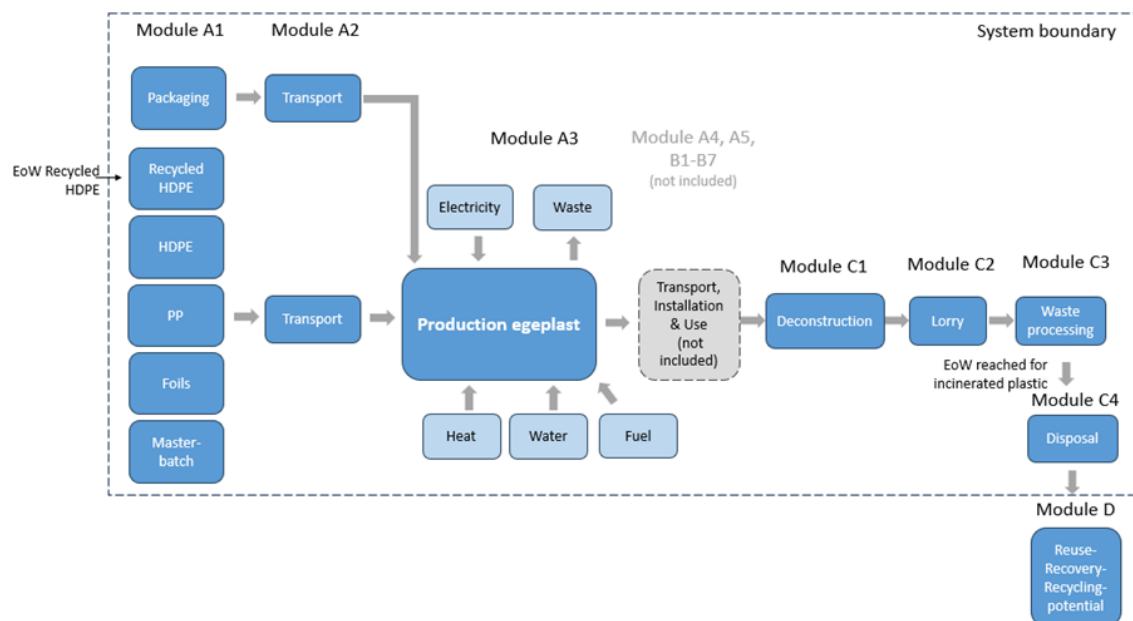
Database(s) and LCA software used: The LCA software is SimaPro Flow version 2.47 and the database is Ecoinvent 3.10. When modelling in Simapro, Ecoinvent data (updated November 2023) has been used for secondary data.

Description of system boundaries:

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

Fully pre-verified EPD tool: This EPD is generated by Tyréns EPD-generator 3.1.0 – Ege plast. The tool is verified Marcus Wendin, Miljögiraff AB.

System diagram:



## Production

The raw materials are processed in the production facility in Germany. The pipes are manufactured by extrusion of plastic granules. The extrusion process begins with the raw material in bag silos, which is fed into the extruder where it is melted into a homogeneous plastic. The melt passes through a filter to remove impurities. The pipe is molded and cooled in a vacuum calibration, followed by further cooling in a spray bath. After cooling, it is marked with the appropriate information and pulled through the process by a caterpillar haul-off to ensure consistent speed and quality. Finally, the tube is cut to length and prepared for shipment, ensuring high quality production.

The factory processes are allocated to the products with mass allocation.

The pipes are delivered with packaging materials to protect the goods from environmental elements during transport and storage at construction sites.

Pre-consumer recycled material (industrial waste) is allocated environmental impact from the virgin material through economic allocation. In other words, the recycled material is treated as a co-product of the virgin material-based product. Therefore, the allocation of environmental impact between the co-product and the virgin product is based on the market price of produced product where the waste occurs and the market price of the recycled material. Climate impact for Recycled PE is 0.77 kgCO<sub>2</sub>eq. per kg (GWP-GHG).

### More information:

This EPD is generated with a fully pre-verified EPD tool. All processes are fixed and variable input data for each door i.e constituent material/components (Items) is governed by a menu. The results of the EPD is checked for plausibility. The review of the EPD-generator its constituent processes and the fixed content of the EPD is accepted based on the verification of the tool and the first EPD verification by the tool. Identification name and version number of the EPD-generator: Tyréns EPD-generator 3.1.0

Results for the additional impact categories particulate matter, ionising radiation, ecotoxicity (freshwater), human toxicity (cancer), human toxicity (non-cancer) and land use is not declared.

EN 15804 reference package based on EF 3.1 has been used.

### **Electricity data**

Egeplast international GmbH (Robert-Bosch-Straße 7, D-48268 Greven, Germany) sources it's electricity from the German power. Infrastructure and net losses for high and medium net are included together with transformation losses when going from high voltage to medium voltage. Climate impact for the energy mix are 0.695 kg CO<sub>2</sub>eq. per kWh (GWP-GHG).

### **Estimates and assumptions**

-A1-A3 results includes the “balancing-out reporting” of the biogenic CO<sub>2</sub>, PERM and PENRM of packaging released in module A5

-The excavation of the worn-out pipe is assumed to be 1,1 kWh/tonne, C1.

-The pipes is assumed to be transported 130 km for incineration and 80 km for landfill, C2

-95% of the pipes is assumed to go to energy recovery, C3

-5% of the pipes is assumed to go to landfill, C4

-Truck transports within Europe is assumed to have class EURO 5.

### **Background data**

The data quality of the background data is considered good. The assessment considers all available data from the production process, including all raw materials and auxiliary materials used as well as the energy consumption in relation to available Ecoinvent 3.10 datasets and EPD's.

The infrastructure or capital goods used in the product system for underlying processes are included for upstream and downstream processes, as infrastructure or capital goods can NOT be excluded in SimaPro FLOW. Therefore results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity, noncancer and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in secondary datasets, in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available secondary datasets sometimes lack temporal, technological and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes. For core module infrastructure or capital goods are excluded.

### **Data quality**

When modeling in Simapro, Ecoinvent data (updated November 2023) has been used for generic data. The database is considered to be of high quality.

Input data are gathered from the actual manufacturing plant with product-specific processes, specific amounts, specific waste, and spillage %, specific energy mix, specific transportation distances and transportation are primary data. Primary data are collected directly from supplier and production site.

The percentage primary data is estimated in this EPD for module A1-A3. Primary data are related to amount of energy, transportation and direct emission used throughout module A1-A3 and underlying EPD:s. The reported share of primary data is associated with uncertainty, as one or several EPDs that are used as data source lack information on the share of primary data used.

Modules declared, geographical scope, share of primary 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	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU	EU	DE	ND	ND	ND	ND	ND	ND	ND	ND	ND	EU	EU	SE	SE	SE
Primary data used	22% *			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

\*The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories. See also data quality for more information

Process	Source type and Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1- A3
Manufacturing of product, inclusive generation of electricity used in manufacturing of product	Collected production data (EPD owner) & Electricity data from Ecoinvent v 3.10	2023	Primary data	20%
Transport of materials & packaging to manufacturing site	Databases Ecoinvent v3.10	2023	Primary data	2%
Production of ingoing materials and packaging	EPDs (Confidential) & Databases Ecoinvent v3.10	< 5 years old	Primary data, secondary data	0%
Total share of primary data, of GWP-GHG results for A1-A3				22%

## Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight % and kg C/declared unit
Additive	<0.01	0.00 %	0.00 %
Plastic	1.00	0.00 %	0.00 %
TOTAL	1.00	0.00 %	0.00 %
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/declared unit
Wood	0.03	3.29 %	0.02
TOTAL	0.03	3.29 %	0.02
Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
-	-	-	0.00

## Environmental Information

### LCA results of the product- main environmental performance results

#### Mandatory impact category indicators according to EN 15804

Results per 1 kg pipe							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	3.10E+00	3.97E-04	2.47E-02	2.94E+00	5.94E-03	-1.87E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	6.61E-02	4.34E-08	1.69E-05	1.88E-04	5.57E-06	0.00E+00
GWP-luluc	kg CO <sub>2</sub> eq.	1.50E-03	3.45E-08	8.07E-06	3.85E-06	9.91E-08	-1.83E-03
GWP-total	kg CO <sub>2</sub> eq.	3.17E+00	3.97E-04	2.47E-02	2.94E+00	5.94E-03	-1.87E+00
ODP	kg CFC 11 eq.	1.16E-07	6.07E-12	4.91E-10	4.22E-10	1.67E-11	-1.81E-08
AP	mol H <sup>+</sup> eq.	9.21E-03	3.58E-06	7.72E-05	3.56E-04	3.29E-06	-1.30E-02
EP-freshwater	kg P eq.	7.10E-04	1.16E-08	1.65E-06	2.74E-06	3.42E-08	-1.01E-03
EP-marine	kg N eq.	1.93E-03	1.66E-06	2.60E-05	1.78E-04	1.31E-05	-1.77E-03
EP-terrestrial	mol N eq.	1.98E-02	1.82E-05	2.83E-04	1.88E-03	1.49E-05	-1.81E-02
POCP	kg NMVOC eq.	1.47E-02	5.42E-06	1.21E-04	4.60E-04	7.15E-06	-5.72E-03
ADP-minerals&metals*	kg Sb eq.	2.30E-05	1.42E-10	7.89E-08	4.57E-08	1.09E-09	-1.40E-06
ADP-fossil*	MJ	1.28E+01	2.10E-04	2.84E-02	3.26E-02	7.73E-04	-1.70E+01
WDP*	m <sup>3</sup>	9.71E-01	1.52E-05	1.93E-03	2.33E-02	-9.65E-03	-7.61E-01
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 modules A1-A3 should not be used without considering the results of module C. 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.*

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

## Additional mandatory and voluntary impact category indicators

Results per 1 kg pipe							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	3.11E+00	3.97E-04	2.47E-02	2.94E+00	5.94E-03	-1.88E+00

*Disclaimer: The results of modules A1-A3 should not be used without considering the results of module C. 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.*

## Resource use indicators

Results per 1 kg pipe							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	3.41E+00	3.19E-05	5.88E-03	7.20E-03	3.26E-04	-5.09E+00
PERM*	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	3.41E+00	3.19E-05	5.88E-03	7.20E-03	3.26E-04	-5.09E+00
PENRE	MJ	1.32E+01	2.20E-04	2.97E-02	3.41E-02	8.00E-04	-1.77E+01
PENRM*	MJ.	3.28E+01	0.00E+00	0.00E+00	-3.12E+01	-1.64E+00	0.00E+00
PENRT	MJ	4.60E+01	2.20E-04	2.97E-02	-3.11E+01	-1.64E+00	-1.77E+01
SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m <sup>3</sup>	6.81E-02	6.20E-07	6.97E-05	1.22E-03	2.53E-04	-2.13E-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					

*Disclaimer: The results of modules A1-A3 should not be used without considering the results of module C.*

*\*For the PERM and PENRM the new "GUIDANCE TO CALCULATING THE PRIMARY ENERGY USE INDICATORS" in Annex 3 of the PCR is followed and calculated according to option A.*

<sup>1</sup> The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

## Waste indicators

Results per 1 kg pipe							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radioactive waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Disclaimer: The results of modules A1-A3 should not be used without considering the results of module C*

## Output flow indicators

Results per 1 kg pipe							
Indicator	Unit	A1-A3	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	0.00E+00
Material for recycling	kg	4.37E-03	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	0.00E+00
Exported energy, electricity	MJ	3.73E-02	0.00E+00	0.00E+00	7.17E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	8.70E-02	0.00E+00	0.00E+00	2.40E+01	0.00E+00	0.00E+00

*Disclaimer: The results of modules A1-A3 should not be used without considering the results of module C*

## Additional information

ID: EPD Calculation Egeplast 24-09-2025 15:44

Results for module C are based on a mixed disposal scenario. The table below shows the results for each module if 100 % of the material would be incinerated or 100 % landfilled

### Scenario: 100% of product go to energy or material recycling

Indicator	Unit	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	3.97E-04	2.52E-02	3.09E+00	0.00E+00	-1.97E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	4.34E-08	1.72E-05	1.98E-04	0.00E+00	-1.85E-02
GWP-luluc	kg CO <sub>2</sub> eq.	3.45E-08	8.22E-06	4.05E-06	0.00E+00	-1.93E-03
GWP-total	kg CO <sub>2</sub> eq.	3.97E-04	2.52E-02	3.09E+00	0.00E+00	-1.99E+00
ODP	kg CFC 11 eq.	6.07E-12	5.00E-10	4.44E-10	0.00E+00	-1.91E-08
AP	mol H <sup>+</sup> eq.	3.58E-06	7.87E-05	3.75E-04	0.00E+00	-1.37E-02
EP-freshwater	kg P eq.	1.16E-08	1.68E-06	2.88E-06	0.00E+00	-1.06E-03
EP-marine	kg N eq.	1.66E-06	2.65E-05	1.87E-04	0.00E+00	-1.86E-03
EP-terrestrial	mol N eq.	1.82E-05	2.89E-04	1.98E-03	0.00E+00	-1.90E-02
POCP	kg NMVOC eq.	5.42E-06	1.23E-04	4.84E-04	0.00E+00	-6.02E-03
ADP-minerals&metals*	kg Sb eq.	1.42E-10	8.05E-08	4.82E-08	0.00E+00	-1.48E-06
ADP-fossil*	MJ	2.10E-04	2.90E-02	3.43E-02	0.00E+00	-1.79E+01
WDP*	m <sup>3</sup>	1.52E-05	1.96E-03	2.45E-02	0.00E+00	-8.01E-01
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				

**Scenario: 100% of product go to landfill**

Indicator	Unit	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	3.97E-04	1.55E-02	0.00E+00	1.19E-01	0.00E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	4.34E-08	1.06E-05	0.00E+00	1.11E-04	0.00E+00
GWP-luluc	kg CO <sub>2</sub> eq.	3.45E-08	5.06E-06	0.00E+00	1.98E-06	0.00E+00
GWP-total	kg CO <sub>2</sub> eq.	3.97E-04	1.55E-02	0.00E+00	1.19E-01	0.00E+00
ODP	kg CFC 11 eq.	6.07E-12	3.08E-10	0.00E+00	3.35E-10	0.00E+00
AP	mol H <sup>+</sup> eq.	3.58E-06	4.84E-05	0.00E+00	6.58E-05	0.00E+00
EP-freshwater	kg P eq.	1.16E-08	1.03E-06	0.00E+00	6.85E-07	0.00E+00
EP-marine	kg N eq.	1.66E-06	1.63E-05	0.00E+00	2.61E-04	0.00E+00
EP-terrestrial	mol N eq.	1.82E-05	1.78E-04	0.00E+00	2.97E-04	0.00E+00
POCP	kg NMVOC eq.	5.42E-06	7.59E-05	0.00E+00	1.43E-04	0.00E+00
ADP-minerals&metals*	kg Sb eq.	1.42E-10	4.95E-08	0.00E+00	2.18E-08	0.00E+00
ADP-fossil*	MJ	2.10E-04	1.78E-02	0.00E+00	1.55E-02	0.00E+00
WDP*	m <sup>3</sup>	1.52E-05	1.21E-03	0.00E+00	-1.93E-01	0.00E+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					

## Version history

Original Version of the EPD, 2025-09-03

## ABBREVIATIONS

Abbreviation	Definition
<b>General Abbreviations</b>	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint

GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization
CLC	Co-location centre
CPC	Central product classification
GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
<b>Environmental Impact Indicators (EN 15804)</b>	
GHG	Greenhouse gas
GWP	Global Warming Potential (kg CO <sub>2</sub> eq.)
GWP-fossil	Global Warming Potential from fossil sources (kg CO <sub>2</sub> eq.)
GWP-biogenic	Global Warming Potential from biogenic sources (kg CO <sub>2</sub> eq.)
GWP-luluc	Global Warming Potential from land use and land use change (kg CO <sub>2</sub> eq.)
GWP-total	Total Global Warming Potential (kg CO <sub>2</sub> eq.)
GWP-GHG	Global Warming Potential for greenhouse gases (kg CO <sub>2</sub> eq.)
ODP	Ozone Depletion Potential (kg CFC-11 eq.)
AP	Acidification Potential (mol H <sup>+</sup> eq.)
EP	Eutrophication Potential
EP-freshwater	Freshwater eutrophication potential (kg P eq.)
EP-marine	Marine eutrophication potential (kg N eq.)
EP-terrestrial	Terrestrial eutrophication potential (mol N eq.)
POCP	Photochemical Ozone Creation Potential (kg NMVOC eq.)
ADP	Abiotic Depletion Potential
ADP-minerals&metals	Abiotic depletion potential for non-fossil resources (kg Sb eq.)
ADP-fossil	Abiotic depletion potential for fossil resources (MJ)
WDP	Water Deprivation Potential (m <sup>3</sup> )
<b>Resource Use Indicators</b>	

PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials (MJ)
PERM	Use of renewable primary energy resources used as raw materials (MJ)
PERT	Total use of renewable primary energy resources (MJ)
PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (MJ)
PENRM	Use of non-renewable primary energy resources used as raw materials (MJ)
PENRT	Total use of non-renewable primary energy resources (MJ)
SM	Use of secondary material (kg)
RSF	Use of renewable secondary fuels (MJ)
NRSF	Use of non-renewable secondary fuels (MJ)
FW	Use of net fresh water (m <sup>3</sup> )
<b>Waste Indicators</b>	
HW	Hazardous Waste (disposed) (kg)
NHW	Non-Hazardous Waste (disposed) (kg)
RW	Radioactive Waste (disposed) (kg)
<b>Output Flow Indicators</b>	
CFR	Components for Reuse (kg)
MR	Material for Recycling (kg)
MER	Materials for Energy Recovery (kg)
EEE	Exported Energy, Electricity (MJ)
EET	Exported Energy, Thermal (MJ)
<b>Lifecycle Stages / Modules</b>	
A1	Raw material supply
A2	Transport
A3	Manufacturing
A4	Transport to site
A5	Construction/Installation
B1	Use
B2	Maintenance
B3	Repair
B4	Replacement
B5	Refurbishment

B6	Operational energy use
B7	Operational water use
C1	Deconstruction/Demolition
C2	Transport to waste processing
C3	Waste processing
C4	Disposal
D	Reuse-Recovery-Recycling potential
<b>Other Relevant Terms</b>	
SVHC	Substances of Very High Concern
EC No.	European Community Number
CAS No.	Chemical Abstracts Service Number
MJ	Megajoule
kg	Kilogram
m <sup>3</sup>	Cubic Meter
NMVOG	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO <sub>2</sub> eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO <sub>2</sub> eq.	Kilograms of Carbon Dioxide Equivalent
ND	Not Declared

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