



# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

**EPD HUB, HUB-0019**

Published on 28.01.2026, last updated on 28.01.2026, valid until 28.01.2031

## Automatic publishing Concrete EPD Generator (Ecoinvent 3.10.1)

CET Ecoinvent 3.10.1



This EPD is intended for business-to-business and/or business-to-consumer communication. Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

## MANUFACTURER AND SITE

Manufacturer	CET Ecoinvent 3.10.1
Address	12345 West Main Street, Apartment 6789, Building 101, Springfield Industrial Park, Near Central Square, Springfield City, Region 123456789, State Name With Extra Characters, Country Name With Multiple Words, Postal Code 987654321 , 12345 West Main Street, Apartment 6789, Building 101, Springfield Industrial Park, Near Central Square, Springfield City, Region 123456789, State Name With Extra Characters, Country Name With Multiple Words, Postal Code 98765432112345 West Main Street, Apartment 6789, Building 101, Springfield Industrial Park, Near Central Square, Springfield City, Region 1234
Contact details	Testmanufacturer@cet.com
Website	TestWebPage.nic.org
Place of production	Finland
Place(s) of raw material origin	
Place(s) of installation and use	in
Period for data	2022

A1-A3 Specific data (%) 0

## EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR version 1.2, 24 Mar 2025
cPCR	EN 16757 Product Category Rules for concrete and concrete elements
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	
Scope of the EPD	Cradle to gate with options, A4, and modules C1-C4, D
EPD author	QA EPD Hub
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Verifier User QA

## PRODUCT SPECIFICATION

Product name	Automatic publishing Concrete EPD Generator (Ecoinvent 3.10.1)
Concrete type	Ready-mix concrete
Product standards	EN 206
Additional characteristic	
GTIN (Global Trade Item Number)	fdsf-323132
NOBB (Norwegian Building Product Database)	dfdf-55555

## PRODUCT DESCRIPTION

The biogenic carbon content quantifies the amount of biogenic carbon in a construction product leaving the factory gate, and it shall be separately declared for the product and for any accompanying packaging. If the mass of biogenic carbon containing materials in the product or packaging is less than 5 % of the mass of the product or packaging, the declaration of biogenic carbon content may be omitted.

## PRODUCT CHARACTERISTICS

### Compressive strength class:

6000 psi

### Strength evaluation days:

28 days

### Exposure class:

C-XL

22

## ENVIRONMENTAL DATA SUMMARY

Declared unit	1 cubic meter
Declared unit mass, kg	16
GWP-total, A1-A3 (kg CO <sub>2</sub> e)	0
GWP-fossil, A1-A3 (kg CO <sub>2</sub> e)	0
Secondary material, inputs (%)	0
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	0
Net freshwater use, A1-A3 (m <sup>3</sup> )	0,00E+00

## LIFE CYCLE ASSESSMENT

### SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage	Assembly stage		Use stage							End of life stage				Beyond the system boundaries				
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Raw materials	x				M	M	M	M	M	M	M	M						x
Transport	x				N	N	N	N	N	N	N	N						
Manufacturing			x		D													
Transport																		
Assembly																		
Use																		
Maintenance																		
Repair																		
Replacement																		
Refurbishment																		
Operational energy																		
Operational water																		
Deconstr./demol.																		
Transport																		
Waste processing																		
Disposal																		
Reuse, Recovery, Recycling																		

Modules not declared = MND. Modules not relevant = MNR.

### CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

### VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

### ALLOCATION, ESTIMATES AND ASSUMPTIONS

All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging materials	Not applicable
Ancillary materials	Allocated by mass
Manufacturing energy and waste	Allocated by mass

## PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	

This EPD is product and factory specific.

## PRODUCT RAW MATERIAL MAIN COMPOSITION

The product is a ready-mix concrete consisting of aggregates, cement, filler, admixtures, and water. Main material categories as per EPD Hub GPI are shown below:

Raw material category	Amount, mass- %	Material origin
Metals	10	IN
Minerals	20	FN
Fossil materials	30	NA
Bio-based materials	40	DK

## SUBSTANCES, REACH - VERY HIGH CONCERN

Substances of very high concern	EC	CAS
M1	1	5
M2	2	6
M3	3	7
M4	4	8

## BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	10
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# PRODUCT LIFE CYCLE

## MANUFACTURING (A1-A3)

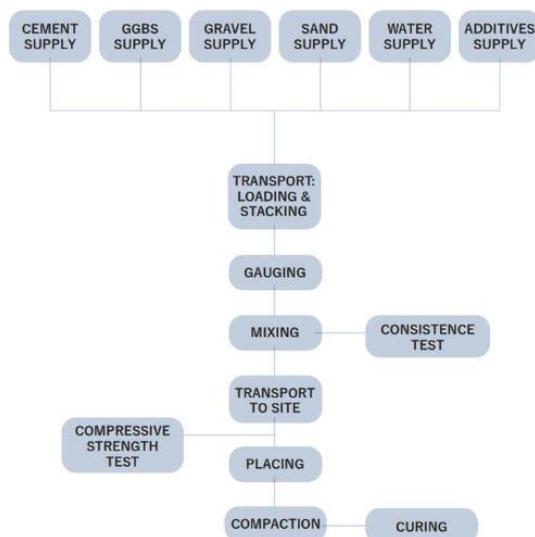
The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

Ready-mix concrete production starts by transporting the binders, aggregates, and additives to the manufacturing site and storing them into closed silos and containers. The aggregates are then dosed onto a scale and transferred to a concrete mixer. In the mixer, cement is added to the aggregates, after which the material is mixed dry. Water and additives are then added to the mixture, followed by wet mixing. After mixing, the concrete mass is unloaded from the mixer into the tank of the concrete mixer truck, which is transported to the construction site.

No packaging is included as the product is transported with mixer trucks.

## MANUFACTURING PROCESS DIAGRAM (A1-A3)



## TRANSPORT AND INSTALLATION (A4-A5)

The concrete is transported to the building site using an average lorry. Transportation impacts occurred from final products delivery to construction site cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions (A4).

Installation includes the energy used for concrete application. This consists of the energy spent by a concrete mixer truck and a concrete pump. A production loss of 10 % at installation is assumed (A5).

## PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase. Air, soil, and water impacts during the use phase have not been studied. Carbonation is not taken into account in this EPD.

## PRODUCT END OF LIFE (C1-C4, D)

At the end of its life, the concrete is assumed to be part of a concrete building that is demolished using machinery, consuming energy in the form of diesel (C1).

The concrete blocks gotten after the demolition are delivered 50 km by a lorry to the nearest construction waste treatment (C2). It is assumed that 100% of the demolished concrete is transported to a site where this waste is processed by, crushing the blocks to gravel. About 70% of concrete can be recycled this way (C3), with an assumption that non-reinforced concrete is being sorted. The remaining 30% of concrete is assumed to be sent to the landfill for disposal (C4). The crushed concrete received from waste treatment can be used as a replacement for virgin gravel or for raw materials in road construction (D). The process losses of the waste treatment plant are assumed to be negligible.

## LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA Concrete EPD Generator v3.2.1. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent v3.10.1/3.11 and One Click LCA databases were used as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology ‘allocation, cut-off, EN 15804+A2’.

# ENVIRONMENTAL IMPACT DATA

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

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	0,00E+00																	
GWP – fossil	kg CO <sub>2</sub> e	0,00E+00																	
GWP – biogenic	kg CO <sub>2</sub> e	0,00E+00																	
GWP – LULUC	kg CO <sub>2</sub> e	0,00E+00																	
Ozone depletion pot.	kg CFC <sub>11</sub> e	0,00E+00																	
Acidification potential	mol H <sup>+</sup> e	0,00E+00																	
EP-freshwater <sup>2)</sup>	kg Pe	0,00E+00																	
EP-marine	kg Ne	0,00E+00																	
EP-terrestrial	mol Ne	0,00E+00																	
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	0,00E+00																	
ADP-minerals & metals <sup>4)</sup>	kg Sbe	0,00E+00																	
ADP-fossil resources	MJ	0,00E+00																	
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	0,00E+00																	

1) GWP = Global Warming Potential. 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e. 3) POCP = Photochemical ozone formation. 4) ADP = Abiotic depletion potential. 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

### ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	0,00E+00																	
Ionizing radiation <sup>6)</sup>	kBq U235e	0,00E+00																	
Ecotoxicity (freshwater)	CTUe	0,00E+00																	
Human toxicity, cancer	CTUh	0,00E+00																	
Human tox. non-cancer	CTUh	0,00E+00																	
SQP <sup>7)</sup>	-	0,00E+00																	

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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. 7) SQP = Land use related impacts/soil quality.

### USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>8)</sup>	MJ	0,00E+00																	
Renew. PER as material	MJ	0,00E+00																	
Total use of renew. PER	MJ	0,00E+00																	
Non-re. PER as energy	MJ	0,00E+00																	
Non-re. PER as material	MJ	0,00E+00																	
Total use of non-re. PER	MJ	0,00E+00																	
Secondary materials	kg	0,00E+00																	
Renew. secondary fuels	MJ	0,00E+00																	
Non-ren. secondary fuels	MJ	0,00E+00																	
Use of net fresh water	m <sup>3</sup>	0,00E+00																	

8) PER = Primary energy resources.



### END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	0,00E+00																	
Non-hazardous waste	kg	0,00E+00																	
Radioactive waste	kg	0,00E+00																	

### END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00																	
Materials for recycling	kg	0,00E+00																	
Materials for energy rec	kg	0,00E+00																	
Exported energy	MJ	0,00E+00																	
Exported energy: Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00						
Exported energy: Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00						

### ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO <sub>2</sub> e	0,00E+00																	
Ozone depletion Pot.	kg CFC-11e	0,00E+00																	
Acidification	kg SO <sub>2</sub> e	0,00E+00																	
Eutrophication	kg PO <sub>4</sub> <sup>3</sup> e	0,00E+00																	
POCP (“smog”)	kg C <sub>2</sub> H <sub>4</sub> e	0,00E+00																	
ADP-elements	kg Sbe	0,00E+00																	
ADP-fossil	MJ	0,00E+00																	



### ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG <sup>9)</sup>	kg CO <sub>2</sub> e	0,00E+00																	

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows - CH<sub>4</sub> fossil, CH<sub>4</sub> biogenic and Dinitrogen monoxide - were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO<sub>2</sub> is set to zero.

## SCENARIO DOCUMENTATION DATA SOURCES

### Manufacturing energy scenario documentation – A3 (Energy data source)

1. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste plastic, mixture, sanitary landfill, World, ecoinvent 3.8, 0.12 kgCO<sub>2</sub>e/kg
2. District heat, Exported Energy: Thermal, World, -
3. Water supply, sewerage, waste management, waste treatment process, recovery of non-metals, Treatment of waste paperboard, unsorted, sorting, Europe, ecoinvent 3.8, -1.387317 kgCO<sub>2</sub>e/kg
4. Manufacturing, chemicals and chemical products, general chemicals, 1,4-butanediol production, World, ecoinvent 3.10.1, 7.03 kgCO<sub>2</sub>e/kg
5. Energy supply, electricity transformation and distribution, distribution low voltage, Market for electricity, low voltage, Finland, ecoinvent 3.8, 0.27 kgCO<sub>2</sub>e/kWh
6. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, ecoinvent 3.8, 0.17 kgCO<sub>2</sub>e/kg
7. Agriculture, farming, fishing, Land already in use, annual cropland to annual crop, Finland, ecoinvent 3.10.1, -3.666667 kgCO<sub>2</sub>e/kg
8. District heat, Exported Energy: Thermal, World, -
9. Transport of goods, Road, Transported mass
10. Water supply, sewerage, waste management, waste treatment process, recovery of non-metals, Treatment of waste glass sheet, collection for final disposal, World, ecoinvent 3.8, 0.0084 kgCO<sub>2</sub>e/kg
11. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, ecoinvent 3.8, 0.17 kgCO<sub>2</sub>e/kg
12. Electricity, Exported Energy: Electricity, World, -
13. Energy supply, electricity transformation and distribution, distribution of medium, Market group for electricity, medium voltage, Europe, ecoinvent 3.8, 0.39 kgCO<sub>2</sub>e/kWh
14. Water supply, sewerage, waste management, waste treatment process, recovery of non-metals, Treatment of waste wood, post-consumer, sorting and shredding, World, ecoinvent 3.8, -1.765950 kgCO<sub>2</sub>e/kg
15. Manufacturing, rubber and plastic products, Market for packaging film, low density polyethylene, World, ecoinvent 3.8, 3.21 kgCO<sub>2</sub>e/kg
16. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste plastic, mixture, sanitary landfill, World, ecoinvent 3.8, 0.12 kgCO<sub>2</sub>e/kg
17. Manufacturing, rubber and plastic products, Polymer foaming, Europe, ecoinvent 3.8, 0.50 kgCO<sub>2</sub>e/kg
18. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polyethylene, high density, granulate, recycled to generic market for high density PE granulate, Europe, ecoinvent 3.8, 0.35 kgCO<sub>2</sub>e/kg
19. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, ecoinvent 3.8, 0.17 kgCO<sub>2</sub>e/kg
20. District heat, Exported Energy: Thermal, World, -
21. Manufacturing, basic metals, aluminium, Treatment of aluminium scrap, post-consumer, prepared for recycling, at refiner, Europe, ecoinvent 3.8, 0.58 kgCO<sub>2</sub>e/kg
22. District heat, Exported Energy: Thermal, World, -
23. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste wood, untreated, sanitary landfill, World, ecoinvent 3.8, -1.330735 kgCO<sub>2</sub>e/kg
24. District heat, Exported Energy: Thermal, World, -
25. Electricity, Exported Energy: Electricity, World, -
26. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polyethylene, high density, granulate, recycled to generic market for high density PE granulate, Europe, ecoinvent 3.8, 0.35 kgCO<sub>2</sub>e/kg
27. Manufacturing, fabricated metal products, treatment, coating and machining, Metal working, average for chromium steel product manufacturing, Europe, ecoinvent 3.8, 2.37 kgCO<sub>2</sub>e/kg
28. Electricity, Exported Energy: Electricity, World, -
29. Water supply, sewerage, waste management, sewerage, Treatment of rainwater mineral oil storage, in wastewater treatment plant, capacity 1.1E10l/year, Europe, ecoinvent 3.8, 0.40 kgCO<sub>2</sub>e/m<sup>3</sup>
30. Manufacturing, chemicals and chemical products, general chemicals, Argon production, liquid, Europe, ecoinvent 3.8, 1.40 kgCO<sub>2</sub>e/kg
31. Water supply, sewerage, waste management, waste treatment process, recovery of non-metals, Treatment of waste glass sheet, sorting plant, World, ecoinvent 3.8, 0.0058 kgCO<sub>2</sub>e/kg
32. Electricity, Exported Energy: Electricity, World, -
33. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Synthetic rubber production, Europe, ecoinvent 3.8, 2.40 kgCO<sub>2</sub>e/kg
34. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste rubber, unspecified, municipal incineration, Europe, ecoinvent 3.8, 3.16 kgCO<sub>2</sub>e/kg
35. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Synthetic rubber production, Europe, ecoinvent 3.8, 2.40 kgCO<sub>2</sub>e/kg
36. Water supply, sewerage, waste management, waste treatment process, recovery of metals, Treatment of scrap steel, inert material landfill, Europe, ecoinvent 3.8, 0.0053 kgCO<sub>2</sub>e/kg
37. Aluminium, Aluminium extrusions, Luxembourg, EPD NPCR 013:2021 NPCR 013 Version 3.0 Part B for Steel and Aluminium, 1.86 kgCO<sub>2</sub>e/kg
38. Water supply, sewerage, waste management, waste treatment process, recovery of metals, Sorting and pressing of iron scrap, Europe, ecoinvent 3.8, 0.0220 kgCO<sub>2</sub>e/kg
39. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, ecoinvent 3.8, 0.17 kgCO<sub>2</sub>e/kg
40. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste rubber, unspecified, municipal incineration, Europe, ecoinvent 3.8, 3.16 kgCO<sub>2</sub>e/kg
41. Manufacturing, basic metals, aluminium, Aluminium production, primary, ingot, Europe, ecoinvent 3.8, 7.16 kgCO<sub>2</sub>e/kg
42. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polyethylene, high density, granulate, recycled to generic market for high density PE granulate, Europe, ecoinvent 3.8, 0.35 kgCO<sub>2</sub>e/kg
43. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste polyethylene, municipal incineration, Switzerland, ecoinvent 3.8, 2.99 kgCO<sub>2</sub>e/kg
44. Electricity, Exported Energy: Electricity, World, -
45. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Synthetic rubber production, Europe, ecoinvent 3.8, 2.40 kgCO<sub>2</sub>e/kg
46. Electricity, Exported Energy: Electricity, World, -
47. Plastic profiles and products, Thermal insulating profiles for aluminum windows, doors and facade systems, with assembly, Germany, EPD Isolierprofile Isolierstege aus PA 66 GF25, 7.20 kgCO<sub>2</sub>e/kg
48. Manufacturing, rubber and plastic products, Injection moulding, Europe, ecoinvent 3.8, 0.88

kgCO<sub>2</sub>e/kg

- 49. Plastic profiles and products, Thermal insulating profiles for aluminum windows, doors and facade systems, with assembly, Germany, EPD Isolierprofile Isolierstege aus PA 66 GF25, 7.20 kgCO<sub>2</sub>e/kg
- 50. Manufacturing, other non-metallic mineral products, glass products, Flat glass production, uncoated, Europe, ecoinvent 3.8, 0.97 kgCO<sub>2</sub>e/kg
- 51. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polyamide PA6 Nylon6, Europe, Plastics Europe, 6.69 kgCO<sub>2</sub>e/kg
- 52. Manufacturing, rubber and plastic products, Injection moulding, Europe, ecoinvent 3.8, 0.88 kgCO<sub>2</sub>e/kg
- 53. Manufacturing, basic metals, iron and steel, Steel production, converter, low-alloyed, Europe, ecoinvent 3.8, 2.14 kgCO<sub>2</sub>e/kg
- 54. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Synthetic rubber production, Europe, ecoinvent 3.8, 2.40 kgCO<sub>2</sub>e/kg
- 55. Manufacturing, fabricated metal products, treatment, coating and machining, Powder coating, aluminium sheet, Europe, ecoinvent 3.8, 2.85 kgCO<sub>2</sub>e/m<sup>2</sup>
- 56. Manufacturing, basic metals, iron and steel, Steel production, electric, low-alloyed, Europe, ecoinvent 3.8, 0.53 kgCO<sub>2</sub>e/kg
- 57. Manufacturing, basic metals, iron and steel, Steel production, electric, chromium steel 18/8, Europe, ecoinvent 3.8, 4.66 kgCO<sub>2</sub>e/kg
- 58. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste plastic, mixture, sanitary landfill, World, ecoinvent 3.8, 0.12 kgCO<sub>2</sub>e/kg
- 59. District heat, Exported Energy: Thermal, World, -
- 60. Manufacturing, paper and paper products, Market for folding boxboard carton, Europe, ecoinvent 3.8, 0.33 kgCO<sub>2</sub>e/kg
- 61. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste aluminium, sanitary landfill, World, ecoinvent 3.8, 0.0392 kgCO<sub>2</sub>e/kg
- 62. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste plastic, mixture, sanitary landfill, World, ecoinvent 3.8, 0.12 kgCO<sub>2</sub>e/kg
- 63. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste paperboard, municipal incineration, World, ecoinvent 3.8, -1.391137 kgCO<sub>2</sub>e/kg
- 64. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste polystyrene, sanitary landfill, World, ecoinvent 3.8, 0.16 kgCO<sub>2</sub>e/kg
- 65. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste wood, untreated, municipal incineration, World, ecoinvent 3.8, -1.411072 kgCO<sub>2</sub>e/kg
- 66. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste rubber, unspecified, municipal incineration, Europe, ecoinvent 3.8, 3.16 kgCO<sub>2</sub>e/kg
- 67. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polystyrene production, expandable, Europe, ecoinvent 3.8, 3.76 kgCO<sub>2</sub>e/kg
- 68. Aluminium, Hydro Extrusion Average Data, France, 0.28 kgCO<sub>2</sub>e/kg
- 69. Energy supply, electricity production, wind, Electricity production, wind, 1-3MW turbine, offshore, Netherlands, ecoinvent 3.10.1, 0.0168 kgCO<sub>2</sub>e/kWh
- 70. Concrete crushed to aggregate (for sub-base layers)
- 71. Electricity, Exported Energy: Electricity, World, -
- 72. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste plastic, mixture, sanitary landfill, World, ecoinvent 3.8, 0.12 kgCO<sub>2</sub>e/kg
- 73. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste

- polyethylene, for recycling, unsorted, sorting, Europe, ecoinvent 3.8, 0.17 kgCO<sub>2</sub>e/kg
- 74. District heat, Exported Energy: Thermal, World, -
- 75. Manufacturing, wood and biobased materials, other products, Market for EUR-flat pallet, Europe, ecoinvent 3.8, -29.568182 kgCO<sub>2</sub>e/unit
- 76. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, ecoinvent 3.8, 0.17 kgCO<sub>2</sub>e/kg
- 77. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste rubber, unspecified, municipal incineration, Europe, ecoinvent 3.8, 3.16 kgCO<sub>2</sub>e/kg
- 78. Water supply, sewerage, waste management, waste treatment process, recovery of metals, Treatment of aluminium scrap, post-consumer, by collecting, sorting, cleaning, pressing, World, ecoinvent 3.8, 0.22 kgCO<sub>2</sub>e/kg
- 79. Manufacturing, other non-metallic mineral products, glass products, Packaging glass production, green, Europe, ecoinvent 3.8, 0.77 kgCO<sub>2</sub>e/kg
- 80. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polyethylene, high density, granulate, recycled to generic market for high density PE granulate, Europe, ecoinvent 3.8, 0.35 kgCO<sub>2</sub>e/kg
- 81. Plastic profiles and products, Thermal insulating profiles for aluminum windows, doors and facade systems, with assembly, Germany, EPD Isolierprofile Isolierstege aus PA 66 GF25, 7.20 kgCO<sub>2</sub>e/kg
- 82. Energy supply, electricity production, co-generation oil and gas, Heat and power co-generation, natural gas, combined cycle power plant, 400MW electrical, World, ecoinvent 3.8, 0.0286 kgCO<sub>2</sub>e/MJ
- 83. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste paperboard, sanitary landfill, World, ecoinvent 3.8, 0.58 kgCO<sub>2</sub>e/kg
- 84. Manufacturing, other non-metallic mineral products, glass products, Flat glass production, uncoated, Europe, ecoinvent 3.8, 0.97 kgCO<sub>2</sub>e/kg
- 85. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste polystyrene, municipal incineration, World, ecoinvent 3.8, 3.20 kgCO<sub>2</sub>e/kg
- 86. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Synthetic rubber production, Europe, ecoinvent 3.8, 2.40 kgCO<sub>2</sub>e/kg
- 87. Electricity, Exported Energy: Electricity, World, -
- 88. Plastic profiles and products, Thermal insulating profiles for aluminum windows, doors and facade systems, with assembly, Germany, EPD Isolierprofile Isolierstege aus PA 66 GF25, 7.20 kgCO<sub>2</sub>e/kg
- 89. District heat, Exported Energy: Thermal, World, -

#### Installation scenario documentation - A5 (Energy data source)

1. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste plastic, mixture, sanitary landfill, World, 0.004 kg
2. District heat, Exported Energy: Thermal, World, 0.0 MJ
3. Water supply, sewerage, waste management, waste treatment process, recovery of non-metals, Treatment of waste paperboard, unsorted, sorting, Europe, 0.063 kg
4. Manufacturing, chemicals and chemical products, general chemicals, 1,4-butanediol production, World, 2.0 kg
5. Energy supply, electricity transformation and distribution, distribution low voltage, Market for electricity, low voltage, Finland, 100.0 kWh
6. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, 0.0 kg

7. Agriculture, farming, fishing, Land already in use, annual cropland to annual crop, Finland, 100.0 kg
8. District heat, Exported Energy: Thermal, World, 1.61115 MJ
9. Transport of goods, Road, Transported mass, 29.22 kg
10. Water supply, sewerage, waste management, waste treatment process, recovery of non-metals, Treatment of waste glass sheet, collection for final disposal, World, 12.082 kg
11. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, 0.11 kg
12. Electricity, Exported Energy: Electricity, World, 1.1266 MJ
13. Energy supply, electricity transformation and distribution, distribution of medium, Market group for electricity, medium voltage, Europe, 200.0 kWh
14. Water supply, sewerage, waste management, waste treatment process, recovery of non-metals, Treatment of waste wood, post-consumer, sorting and shredding, World, 1.32 kg
15. Manufacturing, rubber and plastic products, Market for packaging film, low density polyethylene, World, 3.63 kg
16. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste plastic, mixture, sanitary landfill, World, 0.043000000000000003 kg
17. Manufacturing, rubber and plastic products, Polymer foaming, Europe, 1.76 kg
18. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polyethylene, high density, granulate, recycled to generic market for high density PE granulate, Europe, -0.43 kg
19. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, 0.053 kg
20. District heat, Exported Energy: Thermal, World, 0.5896 MJ
21. Manufacturing, basic metals, aluminium, Treatment of aluminium scrap, post-consumer, prepared for recycling, at refiner, Europe, -0.7532000000000001 kg
22. District heat, Exported Energy: Thermal, World, 6.3382 MJ
23. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste wood, untreated, sanitary landfill, World, 1.76 kg
24. District heat, Exported Energy: Thermal, World, 3.0217 MJ
25. Electricity, Exported Energy: Electricity, World, 0.5371 MJ
26. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polyethylene, high density, granulate, recycled to generic market for high density PE granulate, Europe, -0.205 kg
27. Manufacturing, fabricated metal products, treatment, coating and machining, Metal working, average for chromium steel product manufacturing, Europe, 0.02 kg
28. Electricity, Exported Energy: Electricity, World, 0.65 MJ
29. Water supply, sewerage, waste management, sewerage, Treatment of rainwater mineral oil storage, in wastewater treatment plant, capacity 1.1E10l/year, Europe, 5.38 kg
30. Manufacturing, chemicals and chemical products, general chemicals, Argon production, liquid, Europe, 0.02 kg
31. Water supply, sewerage, waste management, waste treatment process, recovery of non-metals, Treatment of waste glass sheet, sorting plant, World, 5.178 kg
32. Electricity, Exported Energy: Electricity, World, 0.1048 MJ
33. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Synthetic rubber production, Europe, 0.0 kg
34. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste rubber, unspecified, municipal incineration, Europe, 0.1845 kg
35. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Synthetic rubber production, Europe, 0.04 kg
36. Water supply, sewerage, waste management, waste treatment process, recovery of metals, Treatment of scrap steel, inert material landfill, Europe, 0.001 kg
37. Aluminium, Aluminium extrusions, Luxembourg, 5.38 kg
38. Water supply, sewerage, waste management, waste treatment process, recovery of metals, Sorting and pressing of iron scrap, Europe, 0.019 kg
39. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, 0.43 kg
40. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste rubber, unspecified, municipal incineration, Europe, 0.387 kg
41. Manufacturing, basic metals, aluminium, Aluminium production, primary, ingot, Europe, 0.7532000000000001 kg
42. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polyethylene, high density, granulate, recycled to generic market for high density PE granulate, Europe, 0.0 kg
43. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste polyethylene, municipal incineration, Switzerland, 0.14 kg
44. Electricity, Exported Energy: Electricity, World, 0.00446 MJ
45. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Synthetic rubber production, Europe, 0.41 kg
46. Electricity, Exported Energy: Electricity, World, 48.65797 MJ
47. Plastic profiles and products, Thermal insulating profiles for aluminum windows, doors and facade systems, with assembly, Germany, 0.02 kg
48. Manufacturing, rubber and plastic products, Injection moulding, Europe, 0.41 kg
49. Plastic profiles and products, Thermal insulating profiles for aluminum windows, doors and facade systems, with assembly, Germany, 0.86 kg
50. Manufacturing, other non-metallic mineral products, glass products, Flat glass production, uncoated, Europe, 17.26 kg
51. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polyamide PA6 Nylon6, Europe, 0.08 kg
52. Manufacturing, rubber and plastic products, Injection moulding, Europe, 0.08 kg
53. Manufacturing, basic metals, iron and steel, Steel production, converter, low-alloyed, Europe, 0.019 kg
54. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Synthetic rubber production, Europe, 0.205 kg
55. Manufacturing, fabricated metal products, treatment, coating and machining, Powder coating, aluminium sheet, Europe, 0.22 m2
56. Manufacturing, basic metals, iron and steel, Steel production, electric, low-alloyed, Europe, -0.019 kg
57. Manufacturing, basic metals, iron and steel, Steel production, electric, chromium steel 18/8, Europe, 0.02 kg
58. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste plastic, mixture, sanitary landfill, World, 0.0 kg
59. District heat, Exported Energy: Thermal, World, 0.02515 MJ
60. Manufacturing, paper and paper products, Market for folding boxboard carton, Europe, 0.77 kg
61. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste aluminium, sanitary landfill, World, 0.269 kg
62. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste plastic, mixture, sanitary landfill, World, 0.083 kg

- 63. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste paperboard, municipal incineration, World, 0.0035 kg
- 64. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste polystyrene, sanitary landfill, World, 0.04 kg
- 65. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste wood, untreated, municipal incineration, World, 1.32 kg
- 66. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste rubber, unspecified, municipal incineration, Europe, 0.0 kg
- 67. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polystyrene production, expandable, Europe, 1.76 kg
- 68. Aluminium, Hydro Extrusion Average Data, France, 5.38 kg
- 69. Energy supply, electricity production, wind, Electricity production, wind, 1-3MW turbine, offshore, Netherlands, 14.0 kWh
- 70. Concrete crushed to aggregate (for sub-base layers), 0.0null
- 71. Electricity, Exported Energy: Electricity, World, 0.28585 MJ
- 72. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste plastic, mixture, sanitary landfill, World, 0.0205 kg
- 73. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, 0.205 kg
- 74. District heat, Exported Energy: Thermal, World, 3.65 MJ
- 75. Manufacturing, wood and biobased materials, other products, Market for EUR-flat pallet, Europe, 2.2 unit
- 76. Water supply, sewerage, waste management, waste treatment process, collection, Treatment of waste polyethylene, for recycling, unsorted, sorting, Europe, 0.04 kg
- 77. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste rubber, unspecified, municipal incineration, Europe, 0.036000000000000004 kg
- 78. Water supply, sewerage, waste management, waste treatment process, recovery of metals, Treatment of aluminium scrap, post-consumer, by collecting, sorting, cleaning, pressing, World, 5.111 kg
- 79. Manufacturing, other non-metallic mineral products, glass products, Packaging glass production, green, Europe, -5.178 kg
- 80. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Polyethylene, high density, granulate, recycled to generic market for high density PE granulate, Europe, -0.04 kg
- 81. Plastic profiles and products, Thermal insulating profiles for aluminum windows, doors and facade systems, with assembly, Germany, 0.0 kg
- 82. Energy supply, electricity production, co-generation oil and gas, Heat and power co-generation, natural gas, combined cycle power plant, 400MW electrical, World, 10.0 kWh
- 83. Water supply, sewerage, waste management, waste treatment process, landfilling, non-hazardous, Treatment of waste paperboard, sanitary landfill, World, 0.0035 kg
- 84. Manufacturing, other non-metallic mineral products, glass products, Flat glass production, uncoated, Europe, 5.178 kg
- 85. Water supply, sewerage, waste management, waste treatment process, incineration, non-hazardous, Treatment of waste polystyrene, municipal incineration, World, 0.0672 kg
- 86. Manufacturing, chemicals and chemical products, primary plastics and synthetic rubber, Synthetic rubber production, Europe, 0.43 kg
- 87. Electricity, Exported Energy: Electricity, World, 0.0 MJ
- 88. Plastic profiles and products, Thermal insulating profiles for aluminum windows, doors and facade

- systems, with assembly, Germany, 0.02 kg
- 89. District heat, Exported Energy: Thermal, World, 274.25402 MJ

#### Installation scenario documentation - A5 (Diesel consumption)

- 1. Diesel, burned in building machine, World, ecoinvent 3.10.1, 0.1 kg CO2e/MJ

#### TRANSPORT SCENARIO DOCUMENTATION - A4

Scenario parameter	Value
Vehicle type used for transport (e.g., long distance truck, boat, etc.) / Vehicle type, Commission Directive 2007/37/EC (European Emission Standard)	Concrete mixer truck
Distance, km	500
Capacity utilization (including empty return) %	50 %
Bulk density of transported products / kg/m <sup>3</sup>	0,00E+00
Volume capacity utilization factor (factor: =1 or <1 or ≥1 for compressed or nested packaged products)	1

#### INSTALLATION SCENARIO DOCUMENTATION - A5

Scenario parameter	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	0
Water use / m <sup>3</sup>	0
Other resource use / kg	0
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	0,00E+00
Output materials as result of waste processing at the building site e.g. collection for recycling / kg	0,00E+00
Output materials as result of waste processing at the building site e.g. collection for disposal / kg	0,00E+00
Direct emissions to ambient air, soil and water / kg	0

#### END OF LIFE SCENARIO DOCUMENTATION

Scenario information	Value
Collection process – kg collected separately	0
Collection process – kg collected with mixed construction waste	16

Scenario information	Value
Recovery process – kg for re-use	0
Recovery process – kg for recycling	0,00E+00
Recovery process – kg for energy recovery	0
Disposal (total) – kg for final deposition	0,00E+00
Scenario assumptions e.g. transportation	Market for transport, freight, lorry >32 metric ton, EURO5; 50km

## THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.



Program assistant: Xinyuan Zhang



The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

### [Verified tools](#)

Tool verifier: Imane Uald Lamkaddam

Tool verification validity: 28 March 2025 - 27 March 2028