



# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Trebolit

TP 4500

Nordic Waterproofing AB



## EPD HUB, HUB-6139

Published on 29.04.2026, last updated on 29.04.2026, valid until 28.04.2031

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.



Created with One Click LCA

NORDIC  
WATERPROOFING

## GENERAL INFORMATION

### MANUFACTURER

Manufacturer	Nordic Waterproofing AB
Address	Bruksgatan 42, 263 39 Höganäs, Sweden
Contact details	info@trebolit.se
Website	www.trebolit.se

### 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
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Roula Toft, Nordic Waterproofing AB
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	HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited

This EPD is intended for business-to-business and/or business-to-consumer communication. 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.

## PRODUCT

Product name	TP 4500
Additional labels	-
Product reference	-
Place(s) of raw material origin	Sweden, EU
Place of production	Höganäs, Sweden
Place(s) of installation and use	Sweden and Norway
Period for data	Calendar year 2025
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	72,2

## ENVIRONMENTAL DATA SUMMARY

<b>Declared unit</b>	1 m2 of produced waterproofing sheet
<b>Declared unit mass</b>	4,80 kg
<b>Mass of packaging</b>	0,25 kg
<b>GWP-fossil, A1-A3 (kgCO<sub>2</sub>e)</b>	2,37
<b>GWP-total, A1-A3 (kgCO<sub>2</sub>e)</b>	2,32
<b>Secondary material, inputs (%)</b>	0,2
<b>Secondary material, outputs (%)</b>	100
<b>Total energy use, A1-A3 (kWh)</b>	11,8
<b>Net freshwater use, A1-A3 (m<sup>3</sup>)</b>	0,02

## PRODUCT AND MANUFACTURER

### ABOUT THE MANUFACTURER

Nordic Waterproofing AB is one of Nordic’s leading producers and suppliers of waterproofing products and services for buildings and infrastructure. With a history dating back to 1889, the company has over 130 years of experience in developing solutions tailored to the Nordic climate. Nordic Waterproofing AB offers a comprehensive range of products, including waterproofing membranes for flat and pitched roofing, underlayers and barriers to buildings. Furthermore, the company offers a diverse range of complementary products and accessories such as the NWP Solar, which enable the integration of renewable energy systems into roofing projects.

Nordic Waterproofing’s products are characterized by:

- High quality
- Local adaptation
- Ease of installation
- Energy and environmental awareness
- Long service life

Nordic Waterproofing AB is a key member of the Nordic Waterproofing Group, a prominent entity in the European waterproofing industry. The Group is recognized for its extensive range of innovative waterproofing products and services tailored for buildings and infrastructure.

### PRODUCT DESCRIPTION

TP 4500 is a waterproofing membrane with a thickness of 4 mm designed for built-in construction applications.

It is used in lighter structural designs such as balconies, small roof terraces, and other exterior deck structures that require protection against moisture and contamination through an integrated waterproofing layer.

The product is manufactured from SBS-modified bitumen and reinforced

with a polyester carrier, providing strength and durability. The underside is coated with HDPE film, while the top surface is finished with sand.

TP 4500 is CE-marked in accordance with EN 13969, confirming compliance with the harmonized European standard for bitumen-based waterproofing membranes.

Further information can be found at:

[www.trebolit.se](http://www.trebolit.se)

### PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	-	-
Minerals	30-40	Sweden
Fossil materials	60-70	EU
Bio-based materials	-	-

### BIOGENIC CARBON CONTENT

Product’s biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0,0173

### FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m2 of produced waterproofing sheet
Mass per declared unit	4,80 kg
Functional unit	-
Reference service life	50 years

### SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

## PRODUCT LIFE-CYCLE

### 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		
X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Not declared = ND.

### MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. 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.

Bituminous waterproofing membranes are produced by a continuous process at the factory in Höganäs, Sweden. At the manufacturing site, the

raw materials—bitumen, polymers, and fillers—are heated and mixed. A reinforcement is impregnated and coated with this bitumen mixture. The resulting membrane is covered with sand and film. Subsequently, the product is cooled, rolled, and packed on a wooden pallet. The pallet is wrapped with polyethylene packaging film before being sent to customers. The manufacturing process uses only electricity from renewable sources. A market-based approach is used in modelling the electricity mix utilized in the factory.

### TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The average distance for product delivery from the production plant to the construction site is 529 km. This is based on the annual sales volume of the product. The transport method is lorry, and the volume capacity utilization factor is assumed to be 100%. Empty returns are not considered since it is assumed that the return trip can be used by other clients. Since products are packed properly, there are no losses during transportation.

The installation loss of the product is estimated to be 0.5%. Installation is done by fully torching. Longitudinal overlap and overlap at the edges need to be considered when calculating installation area. Waste from installation is classified as materials that are recycled or incinerated with energy recovery. The assumed transport distance for waste handling is 100 km.

### PRODUCT USE AND MAINTENANCE (B1-B7)

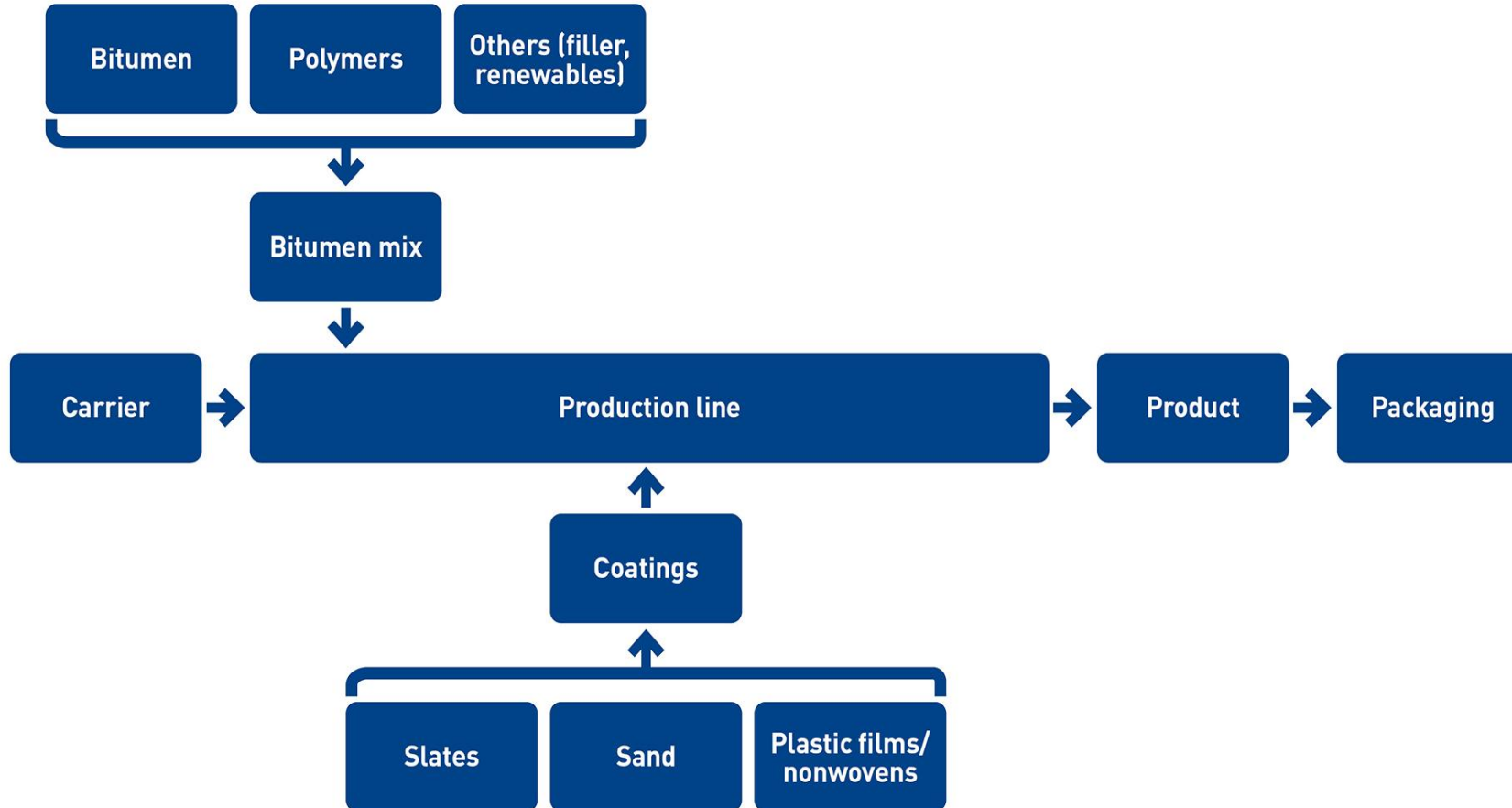
This EPD does not cover the use phase.

Air, soil, and water impacts during the use phase have not been studied.

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

At the end-of-life stage, it is assumed that the product will be dismantled manually and thus will not require any processes with an environmental impact. A 100% recycling rate is assumed based on the manufacturer's demonstrated commitment to ensure the collection, sorting, and forwarding of production spill to external recycling facilities, where bitumen membranes are recycled and used in asphalt manufacturing, thereby replacing virgin materials in road paving applications. It is assumed that a similar handling and recycling pathway will be applicable at the product's end of life. The transport distance for this scenario is estimated to be 300 km, and the transportation method is lorry. The diesel and electricity used to shred the sheets prior to recycling are included in this study. As the products are sold in Sweden and Norway, additional calculations based on the locally applicable waste treatment scenarios will be required. The results for modules C1–D assuming 100% incineration are provided in the Annex.

## MANUFACTURING PROCESS



## LIFE-CYCLE ASSESSMENT

### 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. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. 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

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. 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 material	No allocation
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

### 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.

## LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.4. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 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-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	2,32E+00	5,07E-01	9,98E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,82E-01	3,79E-02	0,00E+00	-4,71E-01
GWP – fossil	kg CO <sub>2</sub> e	2,37E+00	5,07E-01	9,17E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,81E-01	3,77E-02	0,00E+00	-4,68E-01
GWP – biogenic	kg CO <sub>2</sub> e	-5,79E-02	1,02E-04	8,16E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,14E-05	2,67E-05	0,00E+00	-2,82E-03
GWP – LULUC	kg CO <sub>2</sub> e	1,64E-03	1,82E-04	2,02E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,25E-04	1,49E-04	0,00E+00	6,16E-05
Ozone depletion pot.	kg CFC-11e	4,14E-07	1,01E-08	1,76E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,93E-09	5,93E-10	0,00E+00	-4,19E-08
Acidification potential	mol H <sup>+</sup> e	1,04E-02	1,05E-03	1,87E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,38E-04	3,37E-04	0,00E+00	-4,07E-03
EP-freshwater <sup>2)</sup>	kg Pe	1,40E-04	3,41E-05	6,03E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,19E-05	1,43E-06	0,00E+00	-3,05E-05
EP-marine	kg Ne	1,18E-02	2,53E-04	6,55E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,04E-04	1,55E-04	0,00E+00	-1,12E-02
EP-terrestrial	mol Ne	1,71E-02	2,73E-03	6,48E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,31E-03	1,70E-03	0,00E+00	2,29E-04
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	1,91E-02	1,76E-03	3,03E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,31E-03	5,06E-04	0,00E+00	-3,44E-03
ADP-minerals & metals <sup>4)</sup>	kg Sbe	1,07E-05	1,69E-06	2,04E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,24E-07	3,72E-08	0,00E+00	-2,11E-07
ADP-fossil resources	MJ	1,66E+02	7,13E+00	1,31E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,95E+00	6,51E-01	0,00E+00	-1,30E+02
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	7,39E-01	3,55E-02	4,74E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,83E-02	1,06E-02	0,00E+00	-6,02E-02

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-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	6,80E+00	3,74E-08	3,40E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,23E-08	9,51E-09	0,00E+00	-7,41E+00
Ionizing radiation <sup>6)</sup>	kBq U235e	2,69E-01	9,20E-03	1,18E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,19E-03	1,27E-02	0,00E+00	-4,30E-02
Ecotoxicity (freshwater)	CTUe	6,69E+00	9,49E-01	9,50E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,24E-01	3,56E-02	0,00E+00	-4,10E-02
Human toxicity, cancer	CTUh	6,24E-09	8,51E-11	1,64E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,78E-11	4,73E-12	0,00E+00	-1,53E-09
Human tox. non-cancer	CTUh	8,13E-01	4,51E-09	4,06E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,47E-09	8,96E-11	0,00E+00	-8,85E-01
SQP <sup>7)</sup>	-	1,19E+01	4,31E+00	8,93E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,36E+00	7,01E-02	0,00E+00	-2,22E-01

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-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>8)</sup>	MJ	4,71E+00	1,25E-01	-6,94E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,41E-02	1,20E-01	0,00E+00	-8,85E-02
Renew. PER as material	MJ	5,30E-01	0,00E+00	-5,30E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,60E-02
Total use of renew. PER	MJ	5,23E+00	1,25E-01	-1,22E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,41E-02	1,20E-01	0,00E+00	-7,25E-02
Non-re. PER as energy	MJ	3,77E+01	7,13E+00	1,18E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,95E+00	6,51E-01	0,00E+00	-6,21E+00
Non-re. PER as material	MJ	1,24E+02	0,00E+00	-5,06E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-1,23E+02	0,00E+00	-1,21E+02
Total use of non-re. PER	MJ	1,61E+02	7,13E+00	1,13E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,95E+00	-1,23E+02	0,00E+00	-1,27E+02
Secondary materials	kg	4,38E-02	3,31E-03	6,20E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,77E-03	2,20E-04	0,00E+00	4,49E-03
Renew. secondary fuels	MJ	2,64E-03	4,19E-05	4,51E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,26E-05	5,87E-07	0,00E+00	-3,93E-07
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m <sup>3</sup>	1,75E-02	9,72E-04	1,13E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,23E-04	2,54E-04	0,00E+00	-4,24E-03

8) PER = Primary energy resources.

### END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,68E-02	1,04E-02	2,35E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,88E-03	6,56E-04	0,00E+00	-2,58E-03
Non-hazardous waste	kg	1,66E+00	2,19E-01	4,11E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,29E-01	9,68E-03	0,00E+00	-1,51E-01
Radioactive waste	kg	1,40E-03	2,29E-06	9,54E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,82E-07	2,71E-06	0,00E+00	-1,45E-03

### END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	3,40E-01	0,00E+00	4,71E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	4,80E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	2,36E-02	0,00E+00	3,07E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	3,66E-02	0,00E+00	3,00E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	5,60E-03	0,00E+00	7,06E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Heat	MJ	3,10E-02	0,00E+00	2,30E-01	ND	ND	ND	ND	ND	ND	ND	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-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO <sub>2</sub> e	2,42E+00	5,04E-01	9,12E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,80E-01	3,77E-02	0,00E+00	-4,53E-01
Ozone depletion Pot.	kg CFC <sub>11</sub> e	2,51E-07	8,03E-09	1,37E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,14E-09	4,71E-10	0,00E+00	-3,44E-08
Acidification	kg SO <sub>2</sub> e	9,01E-03	8,47E-04	1,44E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,18E-04	2,37E-04	0,00E+00	-3,30E-03
Eutrophication	kg PO <sub>4</sub> <sup>3</sup> e	3,72E-03	2,14E-04	3,15E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,75E-04	5,54E-05	0,00E+00	-1,73E-03
POCP (“smog”)	kg C <sub>2</sub> H <sub>4</sub> e	5,52E-04	8,97E-05	2,38E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,43E-05	1,78E-05	0,00E+00	-9,50E-05
ADP-elements	kg Sbe	3,64E-06	1,65E-06	1,96E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,02E-07	3,71E-08	0,00E+00	-2,10E-07
ADP-fossil	MJ	1,56E+02	6,98E+00	1,29E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,90E+00	4,83E-01	0,00E+00	-1,30E+02

### ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	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	2,38E+00	5,07E-01	9,17E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,81E-01	3,79E-02	0,00E+00	-4,68E-01

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 characterisation factor for biogenic CO<sub>2</sub> is set to zero

## ANNEX – ADDITIONAL LCA RESULTS FOR THE SCENARIO 100% INCINERATION AT THE END OF LIFE

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

Impact category	Unit	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	0,00E+00	9,38E-02	6,05E+00	0,00E+00	-3,05E+00
GWP – fossil	kg CO <sub>2</sub> e	0,00E+00	9,38E-02	2,49E+00	0,00E+00	-3,04E+00
GWP – biogenic	kg CO <sub>2</sub> e	0,00E+00	2,05E-05	3,55E+00	0,00E+00	-3,45E-03
GWP – LULUC	kg CO <sub>2</sub> e	0,00E+00	4,15E-05	4,73E-05	0,00E+00	-2,18E-03
Ozone depletion pot.	kg CFC-11e	0,00E+00	1,31E-09	3,10E-09	0,00E+00	-2,69E-08
Acidification potential	mol H <sup>+</sup> e	0,00E+00	3,13E-04	1,40E-03	0,00E+00	-2,18E-02
EP-freshwater <sup>2)</sup>	kg Pe	0,00E+00	7,29E-06	2,13E-04	0,00E+00	-1,50E-03
EP-marine	kg Ne	0,00E+00	1,01E-04	7,69E-04	0,00E+00	-2,89E-03
EP-terrestrial	mol Ne	0,00E+00	1,10E-03	6,60E-03	0,00E+00	-3,01E-02
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	0,00E+00	4,35E-04	1,74E-03	0,00E+00	-9,51E-03
ADP-minerals & metals <sup>4)</sup>	kg Sbe	0,00E+00	3,08E-07	4,91E-07	0,00E+00	-1,83E-06
ADP-fossil resources	MJ	0,00E+00	1,32E+00	1,70E+00	0,00E+00	-3,76E+01
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	0,00E+00	6,10E-03	3,28E-01	0,00E+00	-4,81E-01

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.

## USE OF NATURAL RESOURCES

Impact category	Unit	C1	C2	C3	C4	D
Renew. PER as energy <sup>8)</sup>	MJ	0,00E+00	1,80E-02	-4,41E+01	0,00E+00	-7,17E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,60E-02
Total use of renew. PER	MJ	0,00E+00	1,80E-02	-4,41E+01	0,00E+00	-7,15E+00
Non-re. PER as energy	MJ	0,00E+00	1,32E+00	-2,72E+01	0,00E+00	-3,76E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	-1,23E+02	0,00E+00	1,71E-01
Total use of non-re. PER	MJ	0,00E+00	1,32E+00	-1,50E+02	0,00E+00	-3,74E+01
Secondary materials	kg	0,00E+00	5,91E-04	1,89E-03	0,00E+00	7,66E-04
Renew. secondary fuels	MJ	0,00E+00	7,53E-06	3,44E-05	0,00E+00	-1,92E-05
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m <sup>3</sup>	0,00E+00	1,74E-04	5,23E-03	0,00E+00	-2,67E-02

8) PER = Primary energy resources.

## END OF LIFE – WASTE

Impact category	Unit	C1	C2	C3	C4	D
Hazardous waste	kg	0,00E+00	2,29E-03	2,84E-01	0,00E+00	-2,59E-01
Non-hazardous waste	kg	0,00E+00	4,30E-02	7,23E+00	0,00E+00	-7,43E+00
Radioactive waste	kg	0,00E+00	2,61E-07	9,97E-07	0,00E+00	-1,02E-04

## END OF LIFE – OUTPUT FLOWS

Impact category	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
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	4,80E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	4,09E+01	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	6,12E+00	0,00E+00	0,00E+00
Exported energy –	MJ	0,00E+00	0,00E+00	3,48E+01	0,00E+00	0,00E+00



## SCENARIO DOCUMENTATION

### DATA SOURCES

#### Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity from 100% hydropower locally supplied 2025. Modelled with Electricity production, hydro, run-of-river, Sweden, Ecoinvent 3,10. Transformation and transmission losses 4,5% according to CEER.
Electricity CO2e / kWh	0,0044
District heating data source and quality	Biogas locally supplied. Modelled with Heat and power co-generation, biogas, gas engine, Sweden, Ecoinvent 3,10.
District heating CO2e / kWh	0,0071

#### Transport scenario documentation - A4 (Transport resources)

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	EUR06 truck 16-32 metric ton (100%), diesel 0,41 l/km
Average transport distance, km	Truck 529 km
Capacity utilization (including empty return) %	100
Bulk density of transported products	0,0064
Volume capacity utilization factor	<1

#### Installation at the building site (A5) - Scenario documentation

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	-
Water use / m <sup>3</sup>	-
Other resource use / kg	-
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	Torch-on equipment Modelled with Propane, burned in building machine, Ecoinvent, 2,56 kWh/DU
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	Cardboard: 0,04 kg PE: 0,0127 kg Wood: 0,00392 kg Solid: 0,024 kg
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	Cardboard: 100%,0%,0% PE: 32,5%,42,5%,25% Wood: 31%,31%,38% Solid: 0%,100%,0%
Direct emissions to ambient air, soil and water / kg	Carbon dioxide, non-fossil, One Click LCA, 7.3E-4 kg

#### End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process – kg collected separately	Solid: 4,8 kg
Collection process – kg collected with mixed construction waste	-
Recovery process – kg for re-use	-
Recovery process – kg for recycling	Solid: 4,8 kg
Recovery process – kg for energy recovery	-

Disposal (total) – kg for final deposition	-
Scenario assumptions e.g. transportation	300 km transport by truck to bitumen recycling station/landfill

## 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.

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: Magaly Gonzalez Vazquez

Tool verification validity: 27 March 2025 - 26 March 2028

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited  
29.04.2026

