ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Benders EPS Sweden
Benders Sverige AB

EPD HUB, EPD number HUB-4569
Published on 30.11.2025, last updated on 30.11.2025, valid until 30.11.2030

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

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Benders Sverige AB
Address	Box 20, 535 21 Kvänum, Sweden
Contact details	info@benders.se
Website	www.benders.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 and EN 16783 Thermal insulation products
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options A4-A5 and modules C1-C4, D
EPD author	Sofia Bender
EPD verification	Independent verification of this EPD and data, according to ISO 14025: o Internal verification þ External verification
EPD verifier	Magaly Gonzalez Vazquez as an authorized verifier for EPD Hub

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	Benders EPS Sweden
Place(s) of raw material origin	Europe
Place of production	Turbingatan 10, 534 50 Vara, Sweden
Place(s) of installation and use	Sweden and Europe
Period for data	Calendar year 2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	+41 % / -14 %
A1-A3 Specific data (%)	97,5

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m² of insulation material with thickness corresponding to R-value = 1m²K/W
Declared unit mass	0,551 kg. See Annex 1 for mass of other included products.
GWP-fossil, A1-A3 ($kgCO_2e$)	1,52 kg
GWP-total, A1-A3 ($kgCO_2e$)	1,52 kg
Secondary material, inputs (%)	1,95
Secondary material, outputs (%)	9,07
Total energy use, A1-A3 (kWh)	10,8
Net freshwater use, A1-A3 (m^3)	0,02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Benders is a Swedish family-owned company that develops, produces, and markets competitive, high-quality products and services for the construction and civil engineering sectors. Benders operates in several different business areas and is one of the market-leading producers of concrete and natural stone products in the Nordic countries. Benders is certified according to ISO 14001:2015.

PRODUCT DESCRIPTION

This EPD includes the following EPS insulation products: EPS 60, EPS 80, EPS-G80, EPS 100, EPS 150 and EPS 200. EPS 80 has been selected as the representative product, as it represents the largest production volume. The included products have different thickness, density and thermal conductivity [W/mK]. The type of raw material used is the same for all included products.

Expanded polystyrene (EPS) is widely used as a thermal insulation material in buildings, including applications in floors, walls, and roofs. It is a lightweight polymer foam made up of air-filled polystyrene cells. Since approximately 98% of EPS consists of air, it offers excellent insulation performance while remaining light in weight. Additional benefits of EPS include minimal moisture absorption, durability, high compressive strength, and full recyclability.

The density of the block is determined by the amount of EPS used in the mold. For example, EPS80 corresponds to a compressive strength of 80 kPa.

This LCA study includes the provision of all materials, transportation, energy and emission flows, and end of life processing of product. All industrial processes from raw material acquisition and pre-processing, production, product distribution and installation and end-of-life management are included. 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.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	-	-
Minerals	-	-
Fossil materials	100	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	0,00089

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m^2
Mass per declared unit	0,551 kg
Reference service life	-

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

Modules not declared = ND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The EPS products consist of polystyrene beads impregnated with pentane, which act as a blowing agent. (A1) The beads are transported by both truck and ship to the factory in paperboard packaging. (A2).

At the factory the beads are exposed to steam, which makes them expand. These expanded beads are then placed into a block molding machine, where steam and pressure shape them into large EPS blocks. The density of the block is determined by the amount of EPS used in the mold. For example, EPS80 corresponds to a compressive strength of 80 kPa. After molding, the residual pentane is ventilated out, and the blocks are cut to the required dimensions. The EPS-waste from cutting is sent back to the melting process, therefore there is no waste from the product itself. The electricity used in the manufacturing process is only sourced from 100% renewable hydro energy. Fuel oil is used to produce steam. (A3)

The only generated waste derives from the paper packaging of the beads and plastic for packaging finished products. The waste is transported to the local waste handling facility only 1 km away. Most of the pentane which were already included in the raw materials, is released during production and calculated for in this EPD. (A3)

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.

TRANSPORT AND INSTALLATION (A4-A5)

The transport distance is defined according to the PCR. Average distance of transportation from production plant to building site is assumed as 100 km and the transportation method is assumed to be lorry. Vehicle capacity utilization volume factor is assumed to be 100 % which means full load. **it** may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not **considered** as it is assumed that return **trips are** used by the transportation company to serve the needs of other clients. Transportation does not cause losses as **products** are fastened properly.

No materials are used during installation and there **is** no energy consumption during installation. No materials are lost during installation since the products arrive **complete** and ready for use. Environmental impacts from installation include generation of waste from packaging (A5) and release of biogenic carbon dioxide from wooden pallets.

The average transport distance to the waste **facility is** estimated at 50 km, using a lorry as the most common mode of transport. The wood pallet is recycled (32%), incinerated (30%) and landfilled (38%) and the plastic is recycled (40%), incinerated (37%) and landfilled according to (EUROSTAT, https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519174/default/table?lang=en).

PRODUCT USE AND MAINTENANCE (B1-B7)

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

PRODUCT END OF LIFE (C1-C4, D)

The EPS product is dismantled manually; thus, no environmental impacts are associated with module C1 (C1).

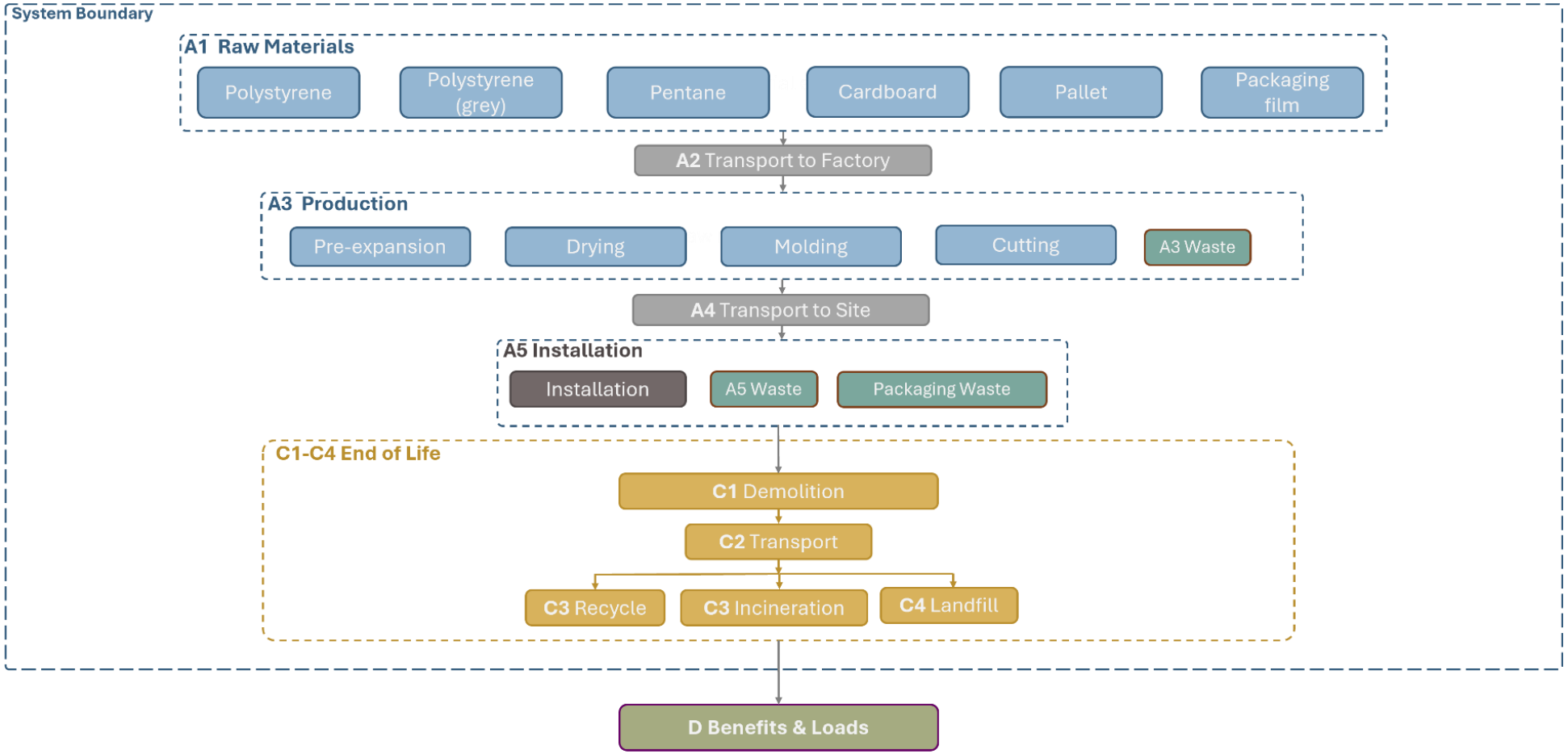
It is assumed that 100% of the dismantled product is collected as separate construction waste and transported to the nearest treatment facility. No material loss is expected during the product's use phase; therefore, the end-of-life product is considered to have the same weight as the declared product. The transportation distance to the treatment plant is estimated at 50 km, with lorry (C2) assumed as the transport method (Gervasio, H. & Dimova, S., JRC Technical report: Model for Life Cycle Assessment (LCA) of buildings, 2018)

At the waste treatment facility, the EPS is assumed to be recycled (9%) and incinerated (59%). Process losses at the treatment facility are considered negligible (C3). The remaining 32 % is assumed to be sent to landfill (Plastics Europe (2020) https://plasticseurope.org/knowledge-hub/plastics-the-facts-2020/) (C4).

Packaging materials reach end-of-waste status in Module A5. The environmental benefits resulting from their recycling and energy recovery are included in Module D. The wooden pallet is reused multiple times during its lifecycle; therefore, no recycling benefit is allocated to it in this module. Plastic packaging does not contain any recycled content. Consequently, the full amount sent to recycling is considered when calculating the benefits in Module D. (D)

The end-of-life scenarios (C1–C4) and potential reuse, recovery, and recycling (D) described in this EPD are currently in use and reflect the most likely and representative practices for the product's lifecycle. These scenarios are based on industry standards and typical regional waste management procedures, ensuring realistic and applicable modeling of environmental impacts.

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 are included in the calculation. There is no neglected unit process that is 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 made according to 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	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

This EPD covers several insulation products (EPS 60, EPS 80, EPS-G80, EPS 100, EPS 150 and EPS 200) with similar recipes manufactured at the same production plant. EPS 80 has been selected as the representative product, as it represents the largest production volume. The density of the block is determined by the amount of EPS used in the mold. For example, EPS80 corresponds to a compressive strength of 80 kPa. 1 m² of all included products of have a thickness corresponding to R-value = 1m²K/W.

The declared products vary in thickness, density, and thermal conductivity [W/mK]. Among these parameters, density is the primary factor influencing the variation in raw material input, which in turn affects the environmental impacts presented for each product variant.

Primary data for ancillaries, packaging, energy and waste have been calculated using production-volume weighted averages for all included products. A scaling table (see Annex 1) according to EPD Hub GPI have been applied to derive results for the other products based on the representative product.

The range of products included in this EPD complies with the allowed averaging and aggregation requirements defined in the GPI. There are no restrictions to the use of this EPD due to averaging. The declared results and content are representative of products manufactured at the same production site in Vara. Geographical coverage of the averaging is limited to this specific site.

Type of grouping	Multiple products
Grouping method	Based on a representative product
Variation in GWP-fossil for A1-A3, %	+41 % / -14 %

LCA SOFTWARE AND BIBLIOGRAPHY

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

Other sources include:
A5:
- "The Performance of EU Incineration Facilities, 2023" https://zerowasteeurope.eu/wp-content/uploads/2023/01/Debunking-Efficient-Recovery-Full-Report-EN.docx.pdf).
- EUROSTAT, https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519242/default/table?lang=en)

C1-C4, D:
- Plastics Europe (2020) https://plasticseurope. org/knowledge-hub/plastics-the-facts-2020/
- Gervasio, H. & Dimova, S., JRC Technical report: Model for Life Cycle Assessment (LCA) of buildings, 2018).

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[1)]	kg CO_2e	1,16E+00	5,41E-02	2,97E-01	1,52E+00	6,00E-03	1,18E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,94E-03	1,04E+00	2,17E-02	-1,83E-01
GWP – fossil	kg CO_2e	1,16E+00	5,41E-02	3,12E-01	1,52E+00	6,00E-03	8,54E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,93E-03	1,04E+00	2,17E-02	-4,21E-01
GWP – biogenic	kg CO_2e	5,10E-03	1,07E-05	-1,47E-02	-9,63E-03	1,26E-06	3,30E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,30E-07	-1,27E-05	-1,11E-05	2,39E-01
GWP – LULUC	kg CO_2e	2,48E-04	2,49E-05	4,01E-04	6,74E-04	2,26E-06	4,23E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,55E-06	7,71E-06	1,31E-06	-1,22E-03
Ozone depletion pot.	kg CFC_{-11}e	4,93E-08	7,93E-10	5,97E-08	1,10E-07	1,21E-10	5,32E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,93E-11	1,69E-10	5,10E-11	-5,05E-09
Acidification potential	mol H^+e	2,28E-03	6,40E-04	8,95E-04	3,81E-03	1,94E-05	2,46E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,28E-05	1,41E-04	1,42E-05	-2,63E-03
EP-freshwater[2)]	kg Pe	6,96E-06	3,36E-06	1,40E-05	2,43E-05	4,05E-07	8,29E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,81E-07	2,30E-06	2,12E-07	-2,16E-04
EP-marine	kg Ne	5,94E-04	1,71E-04	1,37E-04	9,03E-04	6,58E-06	1,89E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,26E-06	7,46E-05	1,21E-04	-3,92E-04
EP-terrestrial	mol Ne	6,06E-03	1,89E-03	1,40E-03	9,35E-03	7,16E-05	1,03E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,64E-05	6,92E-04	5,77E-05	-3,98E-03
POCP ("smog")[3)]	kg NMVOCe	2,47E-03	5,74E-04	2,96E-03	6,00E-03	3,16E-05	3,05E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,95E-05	1,74E-04	2,50E-05	-1,30E-03
ADP-minerals & metals[4)]	kg Sbe	1,33E-06	1,18E-07	9,37E-07	2,39E-06	1,66E-08	2,28E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,20E-08	5,72E-08	4,46E-09	-6,02E-07
ADP-fossil resources	MJ	4,18E+01	7,46E-01	4,61E+00	4,72E+01	8,69E-02	4,55E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,61E-02	1,25E-01	4,39E-02	-7,60E+00
Water use[5)]	m^3e depr.	2,07E+00	3,18E-03	2,43E-02	2,10E+00	4,45E-04	2,79E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,76E-04	2,20E-02	2,19E-04	-1,51E-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.

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	1,74E-08	4,18E-09	5,67E-09	2,73E-08	5,97E-10	3,16E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,47E-10	8,54E-10	3,18E-10	-2,41E-08
Ionizing radiation[6)]	kBq U235e	1,73E-02	5,51E-04	2,06E-02	3,85E-02	1,05E-04	1,70E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,12E-05	3,36E-04	4,48E-05	-1,88E-01
Ecotoxicity (freshwater)	CTUe	2,08E+02	9,05E-02	2,53E+00	2,10E+02	1,02E-02	4,04E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,62E-03	5,33E+00	6,50E-02	-7,96E-01
Human toxicity, cancer	CTUh	5,50E-10	9,64E-12	5,03E-11	6,10E-10	9,88E-13	4,94E-13	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,61E-13	6,58E-11	1,12E-12	-8,64E-11
Human tox. non-cancer	CTUh	1,91E-08	3,96E-10	1,65E-09	2,12E-08	5,65E-11	1,92E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,57E-11	2,62E-09	1,77E-10	-3,48E-09
SQP[7)]	-	2,28E+00	5,53E-01	7,75E-01	3,60E+00	8,76E-02	5,29E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,38E-02	7,51E-02	1,02E-01	-2,88E+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[8)]	MJ	1,07E+00	8,78E-03	3,52E-01	1,43E+00	1,42E-03	-3,36E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,78E-04	5,92E-03	7,01E-04	4,69E+00
Renew. PER as material	MJ	1,82E-01	0,00E+00	1,29E-01	3,11E-01	0,00E+00	-2,89E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-1,24E-01	-5,84E-02	1,65E+00
Total use of renew. PER	MJ	1,25E+00	8,78E-03	4,81E-01	1,74E+00	1,42E-03	-6,25E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,78E-04	-1,18E-01	-5,77E-02	6,34E+00
Non-re. PER as energy	MJ	3,25E+01	7,46E-01	4,18E+00	3,75E+01	8,69E-02	-2,71E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,61E-02	-1,25E+01	-6,78E+00	-7,61E+00
Non-re. PER as material	MJ	2,00E+01	0,00E+00	3,63E-01	2,03E+01	0,00E+00	-3,63E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-1,36E+01	-6,39E+00	8,09E-01
Total use of non-re. PER	MJ	5,25E+01	7,46E-01	4,54E+00	5,78E+01	8,69E-02	-6,34E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,61E-02	-2,61E+01	-1,32E+01	-6,81E+00
Secondary materials	kg	3,06E-03	3,20E-04	8,05E-03	1,14E-02	3,76E-05	1,15E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,49E-05	2,92E-04	1,58E-05	5,49E-03
Renew. secondary fuels	MJ	6,05E-02	3,09E-06	2,00E-03	6,25E-02	4,74E-07	9,38E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,15E-07	2,29E-06	2,97E-07	-5,06E-06
Non-ren. secondary fuels	MJ	7,74E-03	0,00E+00	0,00E+00	7,74E-03	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^3	1,80E-02	9,23E-05	8,42E-04	1,89E-02	1,28E-05	-6,32E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,88E-06	3,10E-04	-6,51E-04	-5,75E-03

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	2,98E-03	1,16E-03	4,27E-03	8,42E-03	1,26E-04	1,01E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,70E-05	1,02E-02	7,76E-05	-3,08E-02
Non-hazardous waste	kg	6,62E-02	2,02E-02	2,63E-01	3,50E-01	2,52E-03	1,66E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,72E-03	3,63E-01	8,74E-01	-1,13E+00
Radioactive waste	kg	3,51E-05	1,35E-07	2,73E-05	6,25E-05	2,59E-08	4,32E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,51E-08	8,55E-08	1,10E-08	-4,41E-05

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	0,00E+00	0,00E+00	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	6,67E-04	0,00E+00	9,50E-03	1,02E-02	0,00E+00	3,44E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,00E-02	0,00E+00	0,00E+00
Materials for energy rec	kg	6,67E-03	0,00E+00	0,00E+00	6,67E-03	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
Exported energy	MJ	6,49E-02	0,00E+00	0,00E+00	6,49E-02	0,00E+00	4,46E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	3,98E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,85E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,68E+00	0,00E+00	0,00E+00
Exported energy –	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,61E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,30E+00	0,00E+00	0,00E+00

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation
1. Electricity production, hydro, run-of-river, Sweden, Ecoinvent, 0.0044 kgCO2e/kWh
2. Light fuel oil, World, One Click LCA, 0.32 kgCO2e/kWh

Transport scenario documentation A4

Scenario parameter	Value
Capacity utilization (including empty return) %	100
Bulk density of transported products	0,00E+00
Volume capacity utilization factor	1

Installation scenario documentation - A5 (Installation waste)
1. Treatment of waste wood, post-consumer, sorting and shredding, Ecoinvent, Materials for recycling, 0.001 kg
2. Treatment of waste wood, untreated, municipal incineration, Ecoinvent, 0.001 kg
3. Exported Energy: Electricity, Ecoinvent, 0.002 MJ
4. Exported Energy: Electricity, Ecoinvent, 0.017 MJ
5. Exported Energy: Thermal, Ecoinvent, 0.002 MJ
6. Exported Energy: Thermal, Ecoinvent, 0.024 MJ
7. Treatment of waste wood, untreated, sanitary landfill, Ecoinvent, 0.001 kg
8. Treatment of waste polyethylene, for recycling, unsorted, sorting, Ecoinvent, Materials for recycling, 0.003 kg
9. Treatment of waste polyethylene, municipal incineration, Ecoinvent, 0.003 kg
10. Treatment of waste polyethylene, sanitary landfill, Ecoinvent, 0.002 kg

Use stages scenario documentation - C1-C4 (Data source)
1. Diesel, burned in building machine, Ecoinvent, 0.0 MJ
2. Treatment of waste polyethylene, for recycling, unsorted, sorting, Ecoinvent, Materials for recycling, 0.05 kg
3. Treatment of waste expanded polystyrene, municipal incineration, Ecoinvent, 0.325 kg
4. Exported Energy: Electricity, Ecoinvent, 1.675 MJ
5. Exported Energy: Thermal, Ecoinvent, 2.303 MJ
6. Treatment of waste polystyrene, sanitary landfill, Ecoinvent, 0.176 kg

Scenario information	Value
Scenario assumptions e.g. transportation	End-of-life product is transported 50 km with an average lorry.

ANNEX 1: SCALING TABLE

TABLE 1.

Product Name	Mass / 1 m2 (DU)	Thermal conductivity [W/mK]	Thickness / DU	A1-A3, EN 15804+A2		
				GWP-total	GWP-fossil	GWP-biogenic
EPS 60	0,492 kg	0,041	41 mm	1,42	1,42	0
EPS-G 80	0,496	0,031	31 mm	1,33	1,33	0
EPS 80 – reference product	0,551 kg	0,038	38 mm	1,53	1,52	0
EPS 100	0,6364	0,037	37 mm	1,71	1,7	0
EPS 150	0,875	0,035	35 mm	2,22	2,21	0
EPS 200	1,037	0,034	34 mm	2,57	2,56	0,01

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 15802+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

Magaly Gonzalez Vazquez as an authorized verifier for EPD Hub Limited
30.11.2025

VERIFIED ISO 14025