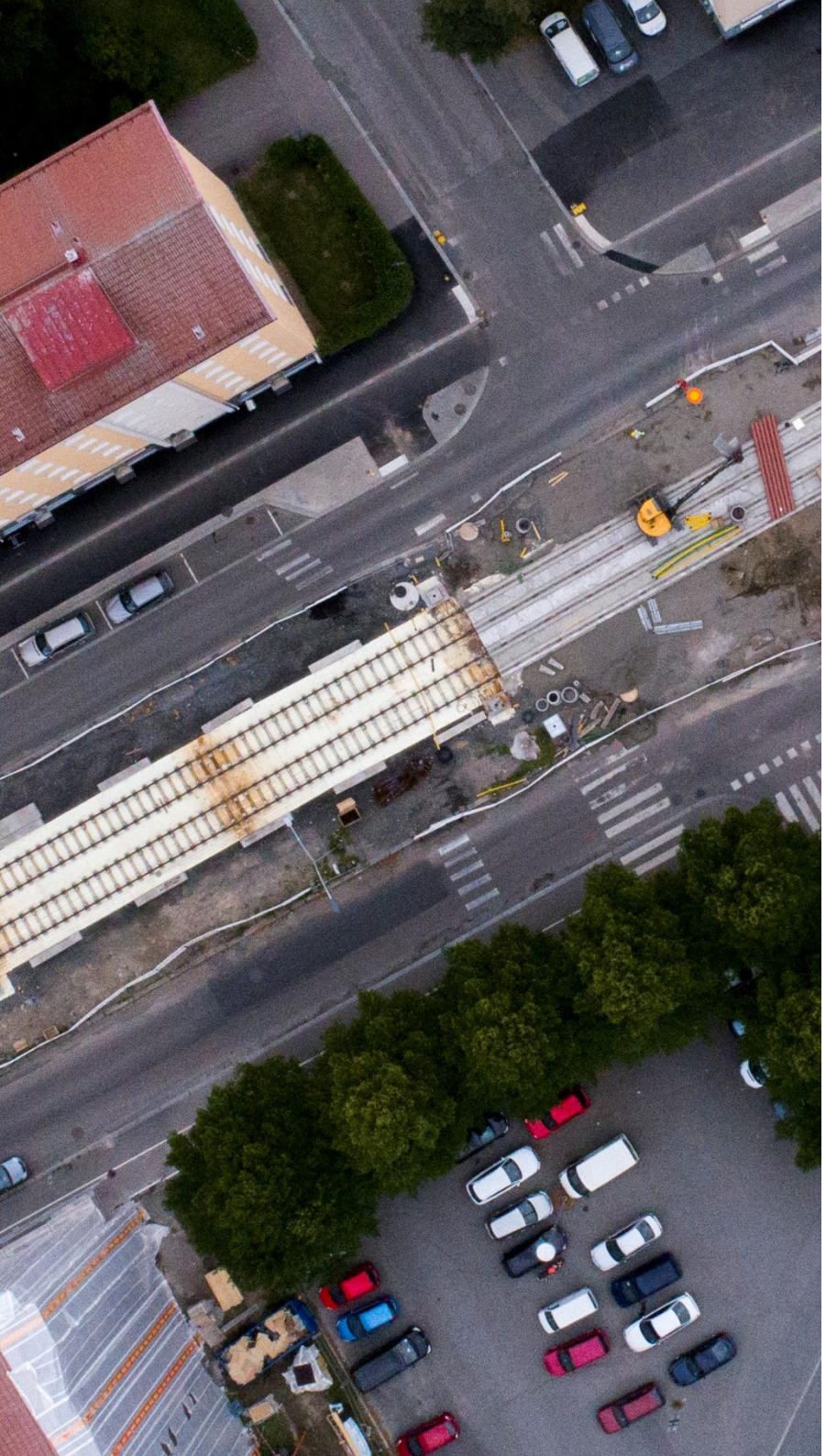


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Manufactured by Finnfoam AB

EPD HUB, HUB-6093

Published on 16.05.2026, last updated on 16.05.2026, valid until 16.05.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 March 2025) and JRC characterization factors EF 3.1.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Finnfoam AB
Address	Hinkebogatan 7, 681 91 Kristinehamn, Sweden
Contact details	kari.hagg@finnfoam.se
Website	www.finnfoam.se

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 March 2025 c-PCR: EN 16783:2017 Thermal insulation products
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	Elisa Lindqvist, FF-FUTURE Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ 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	Finnfoam XPS
Additional labels	Finnfoam XPS300, Finnfoam XPS400, Finnfoam XPS500, Finnfoam XPS700
Product reference	1 m^2 of Finnfoam XPS 300 insulation material with thickness of 33 mm corresponding to R-value=1m^2K/W
Places(s) of raw material origin	Europe
Place of production	Kristinehamn, Sweden
Place of installation and use	Sweden
Period for data	1.1.2025-31.12.2025
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3 (%)	N/A
A1-A3 Specific data (%)	7,37

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m^2 of Finnfoam XPS 300 insulation material with thickness of 33 mm corresponding to R-value=1m^2K/W
Declared unit mass (kg)	0,99
Mass of packaging (kg)	0,009
GWP-fossil, A1-A3 ($kgCO_2e$)	2,19
GWP-total, A1-A3 ($kgCO_2e$)	2,25
Secondary material, inputs (%)	0,02
Secondary material, outputs (%)	91,9
Total energy use, A1-A3 (kWh)	12,6
Net freshwater use, A1-A3 (m^3)	0,03

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Over forty years long history, Finnfoam has become one of the leading manufacturers of plastic-based thermal insulation solutions. The roots of Finnfoam's thermal insulation competence are embedded into the frozen Finnish soil. Today, the group is known for quality, product development, and reliability. Finnfoam's product range includes XPS, EPS and PIR thermal insulation and the Tulppa -wet room boards. The entire Finnfoam (XPS) thermal insulation product range is suitable for use as frost insulation and for insulating floors, ceilings, and walls, as well as for various types of supplementary thermal insulation. As frost and floor insulation, Finnfoam (XPS) is highly resistant to moisture, freezing, and load. FF-EPS is best suited for use as thermal insulation for walls and ceilings, where it provides a safe and highly cost-effective solution. It can also be used on floors that are not subjected to significant loads. The applications of FF-PIR polyurethane insulation products include the thermal insulation of walls and ceilings as well as saunas. FF-PIR insulation products have a very high thermal insulation capacity, which allows for lower structural thickness.

PRODUCT DESCRIPTION

Finnfoam XPS is a thermal insulation board which retains its insulation capacity even in the most demanding conditions. The board´s special feature is its completely closed and consistent cell structure, which ensures a high insulation capacity and impermeability. Structures produced using Finnfoam XPS do not require separate vapor barriers or wind-proofing panels, which means that a single installation takes care of several work phases. Finnfoam XPS is used as building insulation, mainly for ground frost insulation and as insulation layers under concrete slabs.

Finnfoam XPS thermal insulation boards are produced in different sizes and thicknesses, and in different strength classes. Thermal conductivity varies between 0.032-0.036 W/mK depending on thickness and strength class. This EPD is calculated for 1 m² of Finnfoam XPS 300 insulation material with thickness of 33 mm corresponding to R-value=1m²K/W. GWP-values per 1 m^2 and R-values of other products in the product group are presented in Annex 1. Nominal densities are presented in Annex 2. More information can be found on www.finnfoam.se.

PRODUCT STANDARD

EN 13164:2012+A1:2015 Thermal insulation products for buildings.
Factory made extruded polystyrene foam (XPS) products.

SUBSTANCES, REACH - VERY HIGH CONCERN

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

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

BIOGENIC CARBON CONTENT

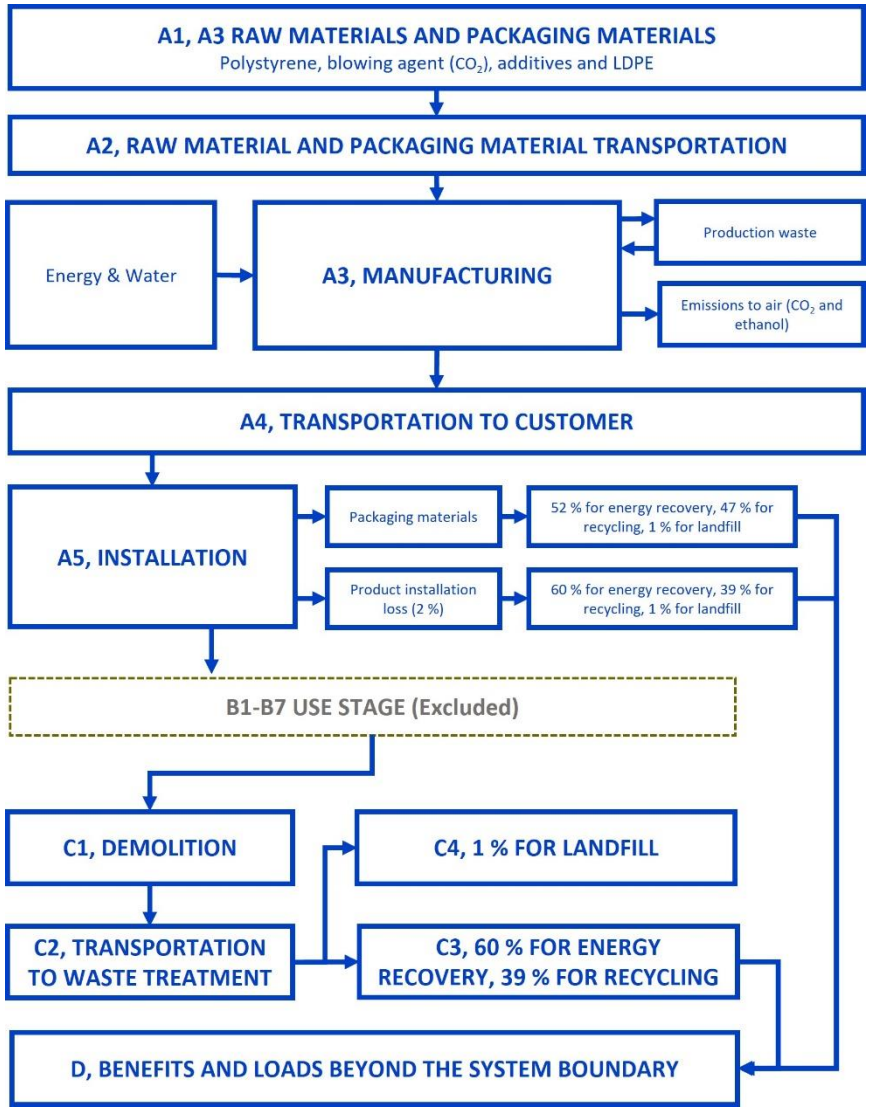
Product's biogenic carbon content at the factory gate.

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

DECLARED / FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m^2 of Finnfoam XPS 300 insulation material with thickness of 33 mm corresponding to R-value=1m²K/W
Mass per declared unit	0,99 kg
Functional unit	-
Reference service life	-

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 product stage is subdivided into three modules: A1 (raw material supply), A2 (transportation of the raw materials) and A3 (manufacturing).

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.

The main raw material used is polystyrene. Polystyrene and colorant are melted and mixed, after which the mass is expanded with CO_2 and ethanol. This mixture is then extruded between tables into boards. After cooling, the boards are cut. The final product is packed in low-density polyethylene (LDPE) film.

The declared product is produced in with energy created with electricity. A market-based approach is used in modelling the electricity mix utilized in the factory. 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. During the production process the generated product-based waste is sent back to the manufacturing process, therefore there is no waste from the product itself. Only some of the CO_2 and ethanol in the product is released during the storing.

TRANSPORT AND INSTALLATION (A4-A5)

The construction process is divided into two modules: A4 (transport to the building site) and A5 (installation in the building).

Transportation impacts occurred from final product delivery to construction site (A4) cover direct fuel exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions. Annual export rates are taken into consideration for delivery scenario in module A4. Transportation distance is assumed to be 381 km, which is the average distance during assessment period. Empty returns are also considered. Transportation doesn't cause losses as products are packaged properly. There is no significant weight loss due to the emission of the rest of the pentane in the product during transportation. Also, volume capacity utilization factor is assumed to be 1 for the nested packaged products.

Module A5 includes product installation losses, emissions of energy use in installation and generation of waste at the construction site. It can be assumed that there are no significant environmental impacts (energy or water use) caused by installation phase due to manual installation. In this stage installation phase's waste processing (assumed to be 2 % as defined in EN 16783:2017) as well as packing materials (LDPE) have been considered.

It is assumed that 60 % of the product installation waste is incinerated for energy recovery, 39 % is recycled and 1 % is landfilled. Additionally, it is assumed that 52 % of the packaging material is incinerated for energy recovery, 47 % is recycled and 1 % is landfilled. Scenarios included are currently in use and are representative for one of the most likely scenarios in Sweden.

PRODUCT USE AND MAINTENANCE (B1-B7)

Use stage is subdivided into seven modules: B1 (Use), B2 (Maintenance), B3 (Repair), B4 (Replacement), B5 (Refurbishment), B6 (Operational energy use) and B7 (Operational water use). This EPD does not cover use phase as it is assumed that the product will last in situ with no requirement for maintenance, repair, replacement or refurbishment throughout its service life. Also, the product doesn't use energy or water during its lifetime. Air, soil and water impacts during the use phase have not been studied.

END OF LIFE (C1-C4, D)

The end-of-life stage is subdivided into four modules: C1 (demolition/deconstruction), C2 (transportation), C3 (waste processing) and C4 (disposal). Stage D describes benefits and loads beyond the system boundary.

Consumption of energy and natural resources in the demolition process is assumed to be negligible (C1). Transportation distance to the nearest waste treatment plant is assumed to be 50 km and vehicle type is assumed to be lorry (C2). End-of-life product weight is lower compared to the declared unit because blowing agent and ethanol are released during products storing and use stage. 60 % of end-of-life product is assumed to be incinerated for energy recovery and 39 % is assumed to be recycled (C3). 1 % of end-of-life product is assumed to be landfilled (C4).

Module D considers net benefits from recycling and energy recovery of end-of-life product as well as packaging materials. Scenarios included are currently in use and are representative for one of the most likely scenarios in Sweden.

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 materials 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 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.

Note on indicator consistency: A technical inconsistency between PENRT (Total use of non-renewable primary energy) and ADP-fossil (Abiotic depletion potential for fossil resources) results in modules A1–A3 has been identified. A contribution analysis indicates that the discrepancy originates from the background environmental profiles of fossil-based plastic raw materials, such as polystyrene. The difference is related to the specific characterization factors and the treatment of fossil resources as both material feedstock and energy carriers in the background databases. These inconsistencies are inherent to the third-party verified background datasets used and cannot be influenced or adjusted by the LCA practitioner.

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, Cutoff, EN 15804+A2'. EN 16783 Thermal insulation products have been used as a c-PCR. Additionally, following sources have been used when modelling end-of-life scenarios:

- Plastics Europe: Plastics – the Facts 2022 (https://plasticseurope.org/knowledge-hub/plastics-the-facts-2022-2/)
- Blue ocean strategy (https://www.blueoceanstrategy.com/blog/turning-waste-energy-sweden-recycling-revolution/)

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	Allocated by mass
Packaging material	Allocated by mass
Ancillary materials	Allocated by mass
Manufacturing energy and waste	Allocated by mass

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	N/A
Variation in GWP-fossil for A1-A3 (%)	N/A

Products are produced at one location with the same manufacturing process. Finnfoam XPS thermal insulation boards are produced in different sizes and thicknesses, and in different strength classes. Thermal conductivity varies between 0.032-0.036 W/mK depending on thickness and strength class. This EPD is calculated for 1 m^2 of Finnfoam XPS 300 insulation material with thickness of 33 mm corresponding to R-value=1m^2K/W. GWP-values per 1 m^2 and R-values of other products in the product group are presented in Annex 1. Nominal densities are presented in Annex 2. Products are homogeneous and therefore linearly scalable.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Note: Environmental performance results are presented per declared unit, defined as 1 m^2 of Finnfoam XPS300 with 33 mm thickness corresponding to R-value=1m^2K/W. GWP-values per 1 m^2 and R-values of other products in the product group are presented in Annex 1. Nominal densities are presented in Annex 2.

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	2,03E+00	1,33E-01	8,63E-02	2,25E+00	6,69E-02	9,74E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,89E-03	1,82E+00	1,12E-03	-2,45E+00
GWP – fossil	kg CO_2e	2,03E+00	1,33E-01	2,85E-02	2,19E+00	6,69E-02	9,74E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,89E-03	1,82E+00	1,12E-03	-2,44E+00
GWP – biogenic	kg CO_2e	1,16E-05	2,90E-05	5,77E-02	5,78E-02	1,34E-05	-1,05E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,76E-06	-3,50E-05	-5,74E-07	0,00E+00
GWP – LULUC	kg CO_2e	1,18E-05	5,17E-05	3,58E-05	9,93E-05	2,40E-05	3,73E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,14E-06	3,74E-05	6,77E-08	-9,73E-03
Ozone depletion pot.	kg CFC-$_{11}$e	1,32E-09	2,77E-09	1,69E-10	4,26E-09	1,33E-09	1,29E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,77E-10	3,91E-10	2,64E-12	-1,58E-08
Acidification potential	mol H^+e	1,28E-04	3,14E-04	1,30E-04	5,71E-04	1,39E-04	2,42E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,78E-05	3,08E-04	7,35E-07	-1,13E-02
EP-freshwater[2)]	kg Pe	3,53E-02	9,29E-06	2,94E-06	3,53E-02	4,50E-06	7,07E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,89E-07	8,16E-06	1,09E-08	-1,37E-02
EP-marine	kg Ne	2,56E-05	8,23E-05	3,08E-05	1,39E-04	3,34E-05	8,92E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,37E-06	1,71E-04	6,27E-06	-1,59E-03
EP-terrestrial	mol Ne	2,75E-04	8,90E-04	2,63E-04	1,43E-03	3,61E-04	7,99E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,02E-04	1,39E-03	2,98E-06	-1,69E-02
POCP ("smog")[3)]	kg NMVOCe	3,98E-03	5,45E-04	1,06E-02	1,51E-02	2,32E-04	3,20E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,36E-05	3,60E-04	2,63E-03	-6,94E-03
ADP-minerals & metals[4)]	kg Sbe	3,04E-07	3,80E-07	4,94E-08	7,34E-07	2,23E-07	2,80E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,91E-08	2,54E-07	2,30E-10	-2,56E-06
ADP-fossil resources	MJ	3,99E+01	2,00E+00	8,44E-01	4,28E+01	9,41E-01	8,88E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,25E-01	3,41E-01	2,27E-03	-4,33E+01
Water use[5)]	m^3e depr.	8,17E-03	1,02E-02	9,28E-03	2,77E-02	4,68E-03	1,82E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,13E-04	3,55E-02	1,13E-05	-7,05E-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	3,37E-08	1,30E-08	2,88E-10	4,69E-08	4,93E-09	1,14E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,99E-10	2,57E-09	1,64E-11	-1,37E-07
Ionizing radiation[6)]	kBq U235e	1,33E-03	2,41E-03	1,50E-04	3,88E-03	1,21E-03	1,61E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,59E-04	1,74E-03	2,32E-06	-8,21E-01
Ecotoxicity (freshwater)	CTUe	7,97E-02	2,35E-01	3,23E-02	3,47E-01	1,25E-01	4,77E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,64E-02	1,63E+00	7,75E-03	-2,94E+00
Human toxicity, cancer	CTUh	2,47E-10	2,21E-11	3,29E-11	3,02E-10	1,12E-11	9,73E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,51E-12	1,32E-10	7,94E-12	-4,48E-10
Human tox. non-cancer	CTUh	5,08E-10	1,29E-09	6,21E-11	1,86E-09	5,95E-10	1,67E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,84E-11	4,40E-09	1,69E-11	-1,39E-08
SQP[7)]	-	9,09E-02	2,01E+00	-1,05E-03	2,10E+00	5,69E-01	6,78E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,43E-02	3,83E-01	5,28E-03	-1,27E+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	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	5,87E-01	3,25E-02	2,15E+00	2,77E+00	1,65E-02	5,66E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,16E-03	2,78E-02	3,63E-05	-9,99E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	7,35E-03	7,35E-03	0,00E+00	-7,35E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,50E-03
Total use of renew. PER	MJ	5,87E-01	3,25E-02	2,15E+00	2,77E+00	1,65E-02	4,93E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,16E-03	2,78E-02	3,63E-05	-1,00E+01
Non-re. PER as energy	MJ	4,03E+01	2,00E+00	3,50E-01	4,26E+01	9,41E-01	-2,23E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,25E-01	-3,63E+01	-3,50E-01	-2,94E+01
Non-re. PER as material	MJ	3,63E+01	0,00E+00	-4,28E-01	3,59E+01	0,00E+00	-4,94E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-3,50E+01	-3,54E-01	-1,44E+01
Total use of non-re. PER	MJ	7,66E+01	2,00E+00	-7,77E-02	7,85E+01	9,41E-01	-7,17E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,25E-01	-7,13E+01	-7,04E-01	-4,39E+01
Secondary materials	kg	1,91E-04	8,63E-04	1,30E-04	1,18E-03	4,37E-04	7,85E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,72E-05	1,41E-03	8,19E-07	-3,66E-01
Renew. secondary fuels	MJ	1,80E-06	1,09E-05	1,42E-07	1,28E-05	5,52E-06	7,29E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,22E-07	1,08E-05	1,53E-08	-1,54E-05
Non-ren. secondary fuels	MJ	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
Use of net fresh water	m^3	2,84E-02	2,95E-04	2,49E-04	2,89E-02	1,28E-04	5,93E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,68E-05	4,28E-04	-3,36E-05	-3,47E-02

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	3,84E-02	2,89E-03	1,12E-03	4,24E-02	1,37E-03	1,36E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,79E-04	1,56E-02	4,01E-06	-1,50E-01
Non-hazardous waste	kg	3,86E-01	5,78E-02	1,05E-01	5,49E-01	2,89E-02	3,35E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,78E-03	6,99E-01	4,52E-02	-3,17E+00
Radioactive waste	kg	2,01E-06	5,95E-07	2,93E-05	3,19E-05	3,02E-07	6,59E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,96E-08	4,43E-07	5,67E-10	-1,76E-04

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	0,00E+00	0,00E+00	5,02E-04	5,02E-04	0,00E+00	1,14E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	3,60E-01	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	1,05E-05	1,05E-05	0,00E+00	1,58E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,50E-01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,72E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,06E+01	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	8,20E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,47E+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	5,90E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,81E+01	0,00E+00	0,00E+00

SCENARIO DOCUMENTATION

MANUFACTURING ENERGY SCENARIO DOCUMENTATION (A3)

Scenario parameter	Value
Electricity data source and quality	100 % Electricity production, hydro, run-of-river (Reference product: electricity, high voltage) (0.0044 kg CO_2e / kWh)

TRANSPORT SCENARIO DOCUMENTATION (A4)

Scenario parameter	Value
Scenario assumptions e.g. transportation	lorry 16-32 metric ton, EURO6
Average transport distance, km	381
Capacity utilization (including empty return) %	50
Bulk density of transported products kg/m^3	30,00
Volume capacity utilization factor	1

INSTALLATION SCENARIO DOCUMENTATION (A5)

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	0
Water use / m^3	0
Other resource use / kg	0
Output materials (specified by type) as result of waste processing at the building site / kg	Product installation waste: 0,012 kg for energy recovery 0,0076 kg for recycling 0,0002 kg for landfill LDPE film: 0,0048 kg for energy recovery 0,0044 kg for recycling 0,00009 kg for landfill

END OF LIFE SCENARIO DOCUMENTATION (C1-C4)

Scenario information	Value
Collection process – kg collected separately	0,92
Collection process – kg collected with mixed waste	0,00
Recovery process – kg for re-use	0,00
Recovery process – kg for recycling	0,36
Recovery process – kg for energy recovery	0,55
Disposal (total) – kg for final deposition	0,01
Scenario assumptions e.g. transportation	50 km, lorry 16-32 metric ton, EURO5

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 16.05.2026

VERIFIED ISO 14025

ANNEX 1: SCALING TABLES

GWP-values and scaling factors for different variations of the product group

Product		XPS300										
Thickness (mm)		20	30	33	40	50	60	70	80	100	120	150
R_D value (m^2K/W)		0,60	0,90	1,00	1,20	1,50	1,75	2,00	2,25	2,75	3,30	4,15
Scaling factor		0,61	0,91	1,00	1,21	1,52	1,82	2,12	2,42	3,03	3,64	4,55
Impact category		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
EN 15804+A2, PEF Results per 1 m^2	GWP-total	1,36E+00	2,05E+00	2,25E+00	2,73E+00	3,41E+00	4,09E+00	4,77E+00	5,45E+00	6,82E+00	8,18E+00	1,02E+01
	GWP-fossil	1,33E+00	1,99E+00	2,19E+00	2,65E+00	3,32E+00	3,98E+00	4,65E+00	5,31E+00	6,64E+00	7,96E+00	9,95E+00
	GWP-biogenic	3,50E-02	5,25E-02	5,78E-02	7,01E-02	8,76E-02	1,05E-01	1,23E-01	1,40E-01	1,75E-01	2,10E-01	2,63E-01
	GWP-LULUC	6,02E-05	9,03E-05	9,93E-05	1,20E-04	1,50E-04	1,81E-04	2,11E-04	2,41E-04	3,01E-04	3,61E-04	4,51E-04

Product		XPS400										
Thickness (mm)		20	30	33	40	50	60	70	80	100	120	150
R_D value (m^2K/W)		0,60	0,90	1,00	1,20	1,50	1,75	2,00	2,25	2,75	3,30	4,15
Scaling factor		0,65	0,97	1,07	1,29	1,62	1,94	2,26	2,59	3,23	3,88	4,85
Impact category		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
EN 15804+A2, PEF Results per 1 m^2	GWP-total	1,45E+00	2,18E+00	2,40E+00	2,91E+00	3,64E+00	4,36E+00	5,09E+00	5,82E+00	7,27E+00	8,73E+00	1,09E+01
	GWP-fossil	1,42E+00	2,12E+00	2,34E+00	2,83E+00	3,54E+00	4,25E+00	4,96E+00	5,66E+00	7,08E+00	8,49E+00	1,06E+01
	GWP-biogenic	3,74E-02	5,60E-02	6,17E-02	7,47E-02	9,34E-02	1,12E-01	1,31E-01	1,49E-01	1,87E-01	2,24E-01	2,80E-01
	GWP-LULUC	6,42E-05	9,63E-05	1,06E-04	1,28E-04	1,60E-04	1,93E-04	2,25E-04	2,57E-04	3,21E-04	3,85E-04	4,81E-04

Product		XPS500										
Thickness (mm)		20	30	33	40	50	60	70	80	100	120	150
R_D value (m^2K/W)		0,60	0,90	1,00	1,20	1,50	1,75	2,00	2,25	2,75	3,30	4,15
Scaling factor		0,69	1,03	1,13	1,37	1,72	2,06	2,40	2,75	3,43	4,12	5,15
Impact category		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
EN 15804+A2, PEF Results per 1 m^2	GWP-total	1,55E+00	2,32E+00	2,55E+00	3,09E+00	3,86E+00	4,64E+00	5,41E+00	6,18E+00	7,73E+00	9,27E+00	1,16E+01
	GWP-fossil	1,50E+00	2,26E+00	2,48E+00	3,01E+00	3,76E+00	4,51E+00	5,26E+00	6,02E+00	7,52E+00	9,03E+00	1,13E+01
	GWP-biogenic	3,97E-02	5,96E-02	6,55E-02	7,94E-02	9,93E-02	1,19E-01	1,39E-01	1,59E-01	1,99E-01	2,38E-01	2,98E-01
	GWP-LULUC	6,82E-05	1,02E-04	1,13E-04	1,36E-04	1,71E-04	2,05E-04	2,39E-04	2,73E-04	3,41E-04	4,09E-04	5,12E-04

Product		XPS700										
Thickness (mm)		20	30	33	40	50	60	70	80	100	120	150
R_D value (m^2K/W)		0,60	0,90	1,00	1,20	1,50	1,75	2,00	2,25	2,75	3,30	4,15
Scaling factor		0,79	1,18	1,30	1,58	1,97	2,36	2,76	3,15	3,94	4,73	5,91
Impact category		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
EN 15804+A2, PEF Results per 1 m^2	GWP-total	1,77E+00	2,66E+00	2,93E+00	3,55E+00	4,43E+00	5,32E+00	6,20E+00	7,09E+00	8,86E+00	1,06E+01	1,33E+01
	GWP-fossil	1,73E+00	2,59E+00	2,85E+00	3,45E+00	4,31E+00	5,18E+00	6,04E+00	6,90E+00	8,63E+00	1,04E+01	1,29E+01
	GWP-biogenic	4,55E-02	6,83E-02	7,51E-02	9,11E-02	1,14E-01	1,37E-01	1,59E-01	1,82E-01	2,28E-01	2,73E-01	3,42E-01
	GWP-LULUC	7,82E-05	1,17E-04	1,29E-04	1,56E-04	1,96E-04	2,35E-04	2,74E-04	3,13E-04	3,91E-04	4,69E-04	5,87E-04

ANNEX 2: NOMINAL DENSITIES OF DIFFERENT PRODUCTS

	Finnfoam XPS300	Finnfoam XPS400	Finnfoam XPS500	Finnfoam XPS700
kg / 1 m^3	30,00	32,00	34,00	39,00