ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Fire insulation door FD60-38
AS Viljandi Aken ja Uks

EPD HUB, HUB-6652
Published on 26.06.2026, last updated on 26.06.2026, valid until 25.06.2031

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

GENERAL INFORMATION

MANUFACTURER

Manufacturer	AS Viljandi Aken ja Uks
Address	Puidu 6, Viljandi, 71020, Estonia
Contact details	vau@vau.ee
Website	www.vau.ee

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 EN 17213 Windows and doors
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	Pirjo Kespre-Betzer, AS Viljandi Aken ja Uks
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Sarah Curpen 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	Fire insulation door FD60-38
Additional labels	-
Product reference	-
Place(s) of raw material origin	Estonia, Finland, Germany, Poland, Lithuania
Place of production	Viljandi, Estonia
Place(s) of installation and use	Estonia, Finland, Latvia, Lithuania, Denmark, Norway, Sweden
Period for data	Calendar year of 2024
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 (%)	69,3

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 square metre of FD60-38 door set, calculated based on 1,23x2,18 m sized elements.
Declared unit mass	46,63 kg
Mass of packaging	5,39 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	62
GWP-total, A1-A3 ($kgCO_2e$)	-24,9
Secondary material, inputs (%)	0,55
Total energy use, A1-A3 (kWh)	378
Net freshwater use, A1-A3 (m^3)	0,99

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

PRODUCT DESCRIPTION

Fire insulation door FD60-38 is a fire-insulating door, designed to block out fire between sections. FD60-38 doors help slow down the spread of fire and smoke to keep you safer in your home. The doors are intended for heated work and living quarters where the temperature difference between the rooms does not exceed 5°C.

Size: M7-10 x M20-21
Door leaf: straight edge, thickness 67 mm
Frame: pine, depth 92 mm
Threshold: oak, height 20 mm
Standard fittings: lock case, striking plate and hinges from Assa Abloy

Certified according to EN 16034 classification standard for EI60, smoke-control Sa4/S200 and self-closing C5. Tested according to EN ISO 717-1 for sound insulation with results of Rw ≥38 dB.

The indicator results for the declared unit of one square meter of product in this EPD are calculated with the reference product size of 1,23 x 2,18 m. The surface area of the door set is 2,68 m², which was used to obtain information for 1 m² of the product.

Further information can be found at:
www.vau.ee

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	2	EU
Minerals	-	-
Fossil materials	3	EU
Bio-based materials	95	EU

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	23,25
Biogenic carbon content in packaging, kg C	1,999

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 square metre of FD60-38 door set, calculated based on 1,23x2,18 m sized elements.
Mass per declared unit	46,63 kg
Functional unit	-
Reference service life	- 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.

A market-based approach is used in modelling the electricity mix utilized in the factory.
Raw materials are transported by lorry from the supplier's site to the Door factory, and the calculations take into account the distances travelled by lorry.
The production process begins with unpacking raw materials. After processing raw materials, the door stiles and rails will be assembled, outside sheet materials, core added and glued together by the pressing method. After the door is pressed, it will go through machining and then get a surface coating. After surface coating, doors will dry and will be equipped with the necessary ironmongery, glazing and seals, and when needed assembled as a set with the frame.
Final quality checks will be conducted before packing the door onto transportation pallets. After that, the products will be ready for transportation to the construction site. Production losses have been considered in ancillary and manufacturing wastes. Metal waste consists of steel paint cans. These are modelled in A1 as ancillary material. Surface coating emits emissions to air when drying; these have been considered separately in the declared unit weight and the weight of chemicals being used (paint, primer and solvents).
The emitted VOCs are being collected and sent to a carbon-based filtration system with an efficiency of 95%. Paint, glue and solvent leftovers and paint-contaminated materials have been considered hazardous waste and transported to a waste treatment facility.
The transportation for manufacturing waste has been calculated based on the distance between the factory and the waste processing facilities in Estonia. 20% of defective products are being incinerated in the factory furnaces. 80% of defective products are transported to a waste treatment facility and presumed to be incinerated.
Raw wood leftovers like sawdust, woodchips, etc., are being burned in factory furnaces. It is assumed that metals will be recycled and everything else incinerated.
Co-product allocation has not been used.

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.

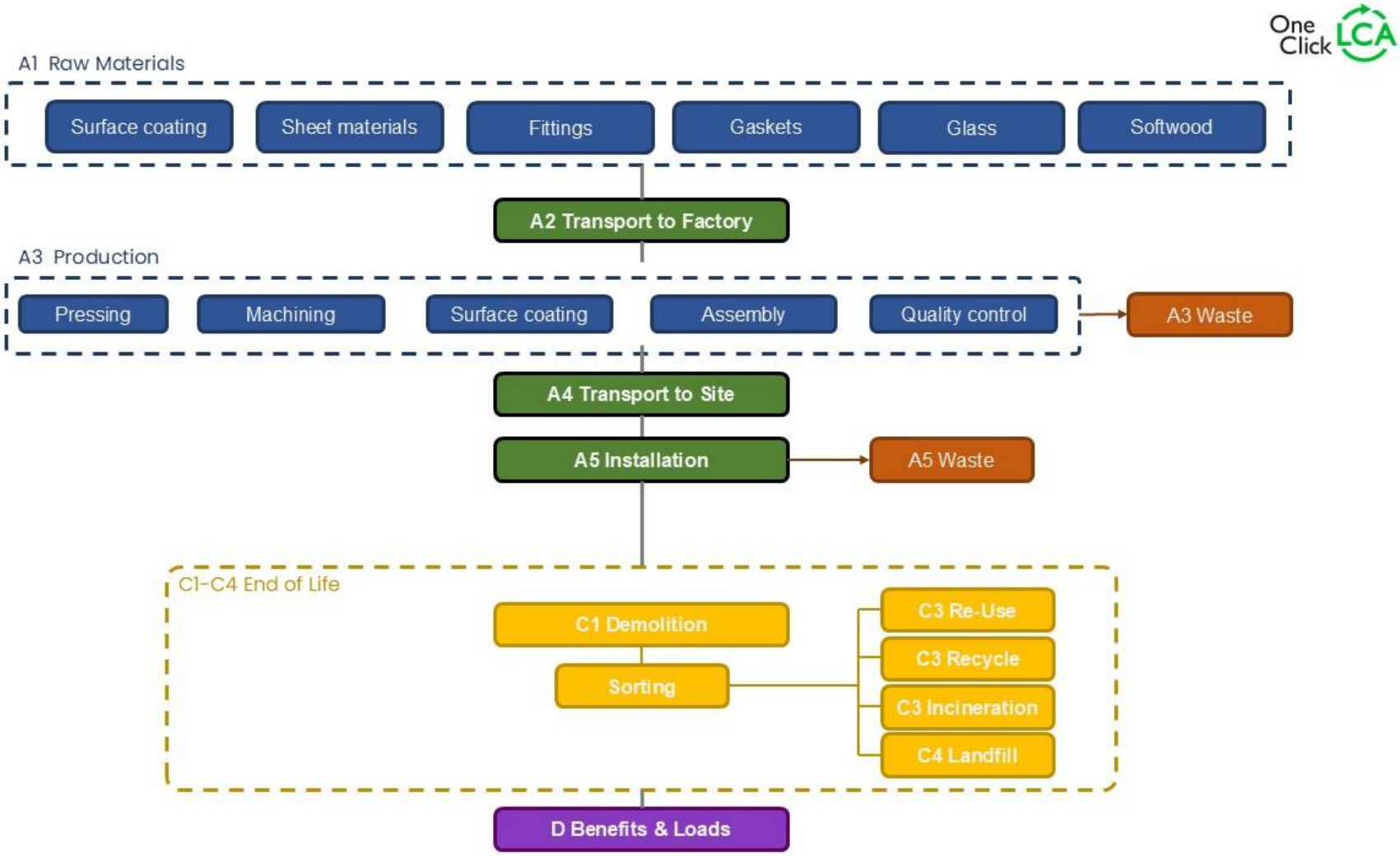
The typical installation distance was assumed to be a weighted average based on sales. According to the manufacturer, transportation doesn't cause losses as products are packaged properly. The final representative product is transported 846.81 km by freight, lorry >32 metric ton, EURO5 and 90.41 km by freight sea ferry.
Environmental impacts from installation into the building (A5) include emissions from energy use in installation and the generation of waste at the construction site. No product waste is generated during installation. No water is needed for the installation process. Installation foam has been included in the study. The fasteners and electricity for tools being used during installation have been excluded as the cut-off has been applied.
Packaging waste comes from the packaging used for the final products. Packaging waste is presumed to be sorted, collected and transported to the waste facility; an average distance of 50 km has been presumed with a lorry >32 metric ton, EURO5. The waste treatment of packaging has been modelled with OneClickLCA waste treatment scenarios that correspond to the average EU scenario. The modelling includes recycling and incineration rates based on EUROSTAT data.

PRODUCT END OF LIFE (C1-C4, D)

Product End of Life starts on the building site where the product is dismantled from the building, separated by material type, sorted, and the sorted materials are transported to a waste treatment facility. The majority of doors are sold to Scandinavian and Nordic countries: Sweden, Norway,

Denmark and Finland. EOL scenarios have been based on reasonable conclusions by studying Swedish waste sorting regulations, where it is mandatory that building products dismantled from the building will have to be separated by material type and sorted at the building site. The link to this legislation has been referenced in the bibliography. It is estimated that there is no mass loss during the use phase of the product. Therefore, the end-of-life product is assumed to have the same weight as the declared product. Losses in the dismounting and material separation process are assumed to be very small and not considered in the assessment. It is assumed that at the end-of-life, 100% of doors are demounted using electric tools (module C1), materials are separated on-site according to local waste ordinance rules, sorted and then transported to a waste processing plant with an average distance of 50 km by >32 t lorry (Euro 5) (module C2).
Materials recovered from dismantled products are considered not to have any losses and are being collected, sorted or incinerated (module C3). 100% of wood, coatings, and plastics are considered to be incinerated with energy recovery, and 100% of metals are recycled.
Module D considers the benefits and loads of energy recovery (thermal and electrical) of incinerated waste and the avoidance of material production of recyclable waste generated in Modules A5 and C3. Plastics and timber are considered and documented with the OneClick LCA module D wood and plastic packaging EU scenarios. Paper packaging has been excluded due to its being manufactured from 100% recycled materials. Production uses mostly virgin raw materials and has avoided double-counting of recycled content, if any is present, by using our suppliers respective EPDs for the materials when available.
The used data accounts for any recycled content for the components, and we have not used this data in Module D benefits and loads.

LIFE CYCLE FLOW DIAGRAM



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.

On factory waste generation, we have excluded waste materials (water, general waste) that can be traced to the offices and employee communal facilities, e.g. dressing rooms, eating areas, etc. Excluded mixed waste and construction waste from repair and maintenance works in offices and communal areas for employees.
Leftover pure wood from production (ca 30%) is being used in our furnaces to produce heat for the factory. Therefore, we only buy municipal heat during very cold winters.
Fuels bought (diesel and propane) are converted from KG to MJ using information from this table https://world-nuclear.org/information-library/facts-and-figures/heat-values-of-various-fuels
The Swedish waste ordinance declares that building products dismantled from the building will have to be separated by material type and sorted at the site. Reference: https://www.riksdagen.se/sv/dokument-och-lagar/dokument/svensk-forfattningssamling/avfallsforordning-2020614_sfs-2020-614/#K3

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	Physical Properties
Ancillary materials	Physical Properties
Manufacturing energy and waste	Physical Properties

VOC filtration % is reported in the carbon-based filtration service report.

PRODUCT & MANUFACTURING SITES GROUPING

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

There is no average result considered in this study since this EPD refers to one specific product produced in one production plant.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.5. 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'.

The Swedish waste ordinance: https://www.riksdagen.se/sv/dokument-och-lagar/dokument/svensk-forfattningssamling/avfallsforordning-2020614_sfs-2020-614/#K3
Fuels bought (diesel and propane) are converted from KG to MJ using information from this table https://world-nuclear.org/information-library/facts-and-figures/heat-values-of-various-fuels
Recycled waste % for plastic packaging: EUROSTAT, https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519242/default/table?lang=en
Recycled waste % for wood packaging: EUROSTAT, https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519174/default/table?lang=en
Recycled waste % for paper packaging: EUROSTAT, https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519259/default/table?lang=en
Exported energy from incinerating packaging materials: Debunking Efficient Recovery: The Performance of EU Incineration Facilities, 2023 https://zerowasteeurope.eu/wp-content/uploads/2023/01/Debunking-Efficient-Recovery-Full-Report-EN.docx.pdf

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	-5,18E+01	5,42E+00	2,15E+01	-2,49E+01	5,28E+00	8,08E+00	ND	ND	ND	ND	ND	ND	ND	3,25E-03	2,51E-01	8,33E+01	0,00E+00	-3,68E+01
GWP – fossil	kg CO_2e	3,33E+01	5,42E+00	2,33E+01	6,20E+01	5,28E+00	7,44E-01	ND	ND	ND	ND	ND	ND	ND	3,24E-03	2,51E-01	3,73E+00	0,00E+00	-3,68E+01
GWP – biogenic	kg CO_2e	-8,52E+01	3,37E-05	-1,90E+00	-8,72E+01	1,07E-03	7,34E+00	ND	ND	ND	ND	ND	ND	ND	7,32E-06	2,81E-06	7,95E+01	0,00E+00	-2,13E-02
GWP – LULUC	kg CO_2e	1,50E-01	2,04E-03	1,44E-02	1,67E-01	2,05E-03	2,53E-04	ND	ND	ND	ND	ND	ND	ND	1,00E-05	9,42E-05	2,74E-04	0,00E+00	-2,59E-02
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	3,19E-06	1,09E-07	1,01E-06	4,31E-06	1,03E-07	2,91E-09	ND	ND	ND	ND	ND	ND	ND	5,61E-11	5,04E-09	1,05E-08	0,00E+00	-3,21E-07
Acidification potential	mol H^+e	2,43E-01	1,76E-02	1,15E-01	3,76E-01	3,19E-02	1,04E-03	ND	ND	ND	ND	ND	ND	ND	1,65E-05	8,09E-04	8,24E-03	0,00E+00	-2,60E-01
EP-freshwater[2)]	kg Pe	5,52E-03	3,66E-04	3,75E-03	9,63E-03	3,34E-04	4,81E-05	ND	ND	ND	ND	ND	ND	ND	2,89E-06	1,69E-05	3,43E-04	0,00E+00	-1,85E-02
EP-marine	kg Ne	5,38E-02	5,96E-03	1,97E-02	7,94E-02	9,38E-03	1,12E-03	ND	ND	ND	ND	ND	ND	ND	2,86E-06	2,75E-04	4,25E-03	0,00E+00	-3,49E-02
EP-terrestrial	mol Ne	5,57E-01	6,48E-02	2,03E-01	8,25E-01	1,03E-01	4,15E-03	ND	ND	ND	ND	ND	ND	ND	2,49E-05	2,99E-03	4,07E-02	0,00E+00	-3,64E-01
POCP ("smog")[3)]	kg NMVOCe	1,47E-01	2,86E-02	8,18E-02	2,58E-01	3,74E-02	1,36E-03	ND	ND	ND	ND	ND	ND	ND	8,24E-06	1,32E-03	1,04E-02	0,00E+00	-1,15E-01
ADP-minerals & metals[4)]	kg Sbe	1,95E-03	1,50E-05	2,53E-05	1,99E-03	1,35E-05	6,94E-07	ND	ND	ND	ND	ND	ND	ND	7,22E-09	6,92E-07	3,40E-06	0,00E+00	-3,53E-05
ADP-fossil resources	MJ	5,88E+02	7,85E+01	3,20E+02	9,86E+02	7,52E+01	2,52E+00	ND	ND	ND	ND	ND	ND	ND	7,65E-02	3,63E+00	7,78E+00	0,00E+00	-4,54E+02
Water use[5)]	m^3e depr.	1,56E+02	4,02E-01	1,74E+02	3,30E+02	3,68E-01	7,82E-02	ND	ND	ND	ND	ND	ND	ND	1,98E-03	1,86E-02	2,06E+00	0,00E+00	-5,97E+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	3,60E-06	5,39E-07	8,83E-07	5,02E-06	4,86E-07	1,72E-08	ND	ND	ND	ND	ND	ND	ND	5,76E-11	2,49E-08	9,03E-08	0,00E+00	-2,61E-06
Ionizing radiation[6]	kBq U235e	3,20E+00	9,47E-02	6,16E+00	9,45E+00	8,52E-02	7,83E-03	ND	ND	ND	ND	ND	ND	ND	2,14E-03	4,38E-03	1,52E-02	0,00E+00	-4,69E+00
Ecotoxicity (freshwater)	CTUe	9,77E+02	9,26E+00	8,14E+01	1,07E+03	8,55E+00	1,78E+00	ND	ND	ND	ND	ND	ND	ND	8,07E-03	4,28E-01	2,76E+01	0,00E+00	-1,24E+02
Human toxicity, cancer	CTUh	5,06E-07	8,93E-10	1,33E-08	5,20E-07	8,93E-10	1,19E-10	ND	ND	ND	ND	ND	ND	ND	6,72E-13	4,13E-11	1,58E-09	0,00E+00	-7,08E-09
Human tox. non-cancer	CTUh	1,60E-06	5,10E-08	1,21E-07	1,77E-06	4,60E-08	5,99E-09	ND	ND	ND	ND	ND	ND	ND	2,89E-11	2,36E-09	9,47E-08	0,00E+00	-2,98E-07
SQP[7]	-	2,36E+03	7,91E+01	8,52E+02	3,29E+03	6,94E+01	2,37E+00	ND	ND	ND	ND	ND	ND	ND	1,30E-02	3,66E+00	3,05E+00	0,00E+00	-2,44E+02

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	2,70E+02	1,28E+00	9,56E+01	3,67E+02	1,16E+00	-7,22E+01	ND	ND	ND	ND	ND	ND	ND	1,79E-02	5,91E-02	-7,50E+02	0,00E+00	-8,09E+01
Renew. PER as material	MJ	8,43E+02	0,00E+00	1,95E+01	8,62E+02	0,00E+00	-7,04E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-7,92E+02	0,00E+00	5,43E+00
Total use of renew. PER	MJ	1,11E+03	1,28E+00	1,15E+02	1,23E+03	1,16E+00	-1,43E+02	ND	ND	ND	ND	ND	ND	ND	1,79E-02	5,91E-02	-1,54E+03	0,00E+00	-7,55E+01
Non-re. PER as energy	MJ	5,47E+02	7,85E+01	3,31E+02	9,57E+02	7,52E+01	-1,61E+01	ND	ND	ND	ND	ND	ND	ND	7,65E-02	3,63E+00	-3,22E+01	0,00E+00	-4,54E+02
Non-re. PER as material	MJ	6,70E+01	0,00E+00	1,61E+01	8,31E+01	0,00E+00	-2,28E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-6,03E+01	0,00E+00	3,42E+00
Total use of non-re. PER	MJ	6,14E+02	7,85E+01	3,47E+02	1,04E+03	7,52E+01	-3,89E+01	ND	ND	ND	ND	ND	ND	ND	7,65E-02	3,63E+00	-9,25E+01	0,00E+00	-4,50E+02
Secondary materials	kg	2,57E-01	3,40E-02	2,14E-01	5,05E-01	3,26E-02	2,47E-03	ND	ND	ND	ND	ND	ND	ND	8,22E-06	1,57E-03	1,64E-02	0,00E+00	7,15E-01
Renew. secondary fuels	MJ	1,73E-01	4,29E-04	3,47E+01	3,49E+01	3,80E-04	2,18E-05	ND	ND	ND	ND	ND	ND	ND	3,38E-08	1,98E-05	1,24E-04	0,00E+00	-3,37E-04
Non-ren. secondary fuels	MJ	5,64E-03	0,00E+00	0,00E+00	5,64E-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	7,69E-01	1,16E-02	2,15E-01	9,95E-01	1,05E-02	-5,71E-03	ND	ND	ND	ND	ND	ND	ND	6,36E-05	5,36E-04	2,26E-02	0,00E+00	-3,17E-01

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	1,16E+00	1,14E-01	3,19E-01	1,59E+00	1,07E-01	2,33E-02	ND	ND	ND	ND	ND	ND	ND	1,74E-04	5,26E-03	7,90E-01	0,00E+00	-3,44E+00
Non-hazardous waste	kg	3,47E+01	2,28E+00	2,64E+01	6,34E+01	2,09E+00	1,06E+01	ND	ND	ND	ND	ND	ND	ND	1,42E-02	1,05E-01	4,89E+01	0,00E+00	-9,25E+01
Radioactive waste	kg	2,08E-03	2,34E-05	7,00E-04	2,80E-03	2,11E-05	1,97E-06	ND	ND	ND	ND	ND	ND	ND	5,49E-07	1,08E-06	3,86E-06	0,00E+00	-1,20E-03

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	4,66E-03	0,00E+00	6,94E-09	4,66E-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
Materials for recycling	kg	1,23E-01	0,00E+00	1,21E-01	2,44E-01	0,00E+00	2,13E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	7,34E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	1,07E-01	0,00E+00	2,37E+00	2,48E+00	0,00E+00	1,49E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	4,43E+01	0,00E+00	0,00E+00
Exported energy	MJ	1,33E+00	0,00E+00	2,96E-03	1,34E+00	0,00E+00	9,75E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	4,78E+02	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	4,10E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	7,21E+01	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	5,64E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	4,06E+02	0,00E+00	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[9)]	kg CO_2e	3,34E+01	5,42E+00	2,34E+01	6,22E+01	5,28E+00	7,45E-01	ND	ND	ND	ND	ND	ND	ND	3,25E-03	2,51E-01	3,73E+00	0,00E+00	-3,68E+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 – CH4 fossil, CH4 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 CO2 is set to zero

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Propane, burned in building machine, World, Ecoinvent, 0.0945 kgCO2e/MJ
2. Electricity, Estonia, residual mix, 2024, Estonia, One Click LCA, 0.60 kgCO2e/kWh
3. Heat production, natural gas, at industrial furnace >100kW, Albania, Ecoinvent, 0.0773 kgCO2e/MJ
4. Heat and power co-generation, wood chips, 6667 kW, Estonia, Ecoinvent, 0.0025 kgCO2e/MJ

Transport scenario documentation - A4 (Transport resources)

1. Transport, freight, lorry >32 metric ton, EURO5, 846.81 km
2. Transport, freight, sea, ferry, 90.41 km

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	0
Volume capacity utilization factor	1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	-
Water use (m^3)	-
Ancillary materials: type and mass (kg)	-
Waste materials: type and mass (kg)	-
Waste materials: output routes	-
Direct emissions (kg)	-

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	64,63 kg
Collection process: Mixed waste (kg)	-
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0,73
Recovery: energy recovery (kg)	44,3
Disposal (kg)	0
Scenario assumptions e.g. transportation (mode, km) & other	Transportation to waste processing assumes an average distance of 50 km by >32 t lorry (Euro 5)

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

Sarah Curpen as an authorized verifier for EPD Hub Limited 26.06.2026