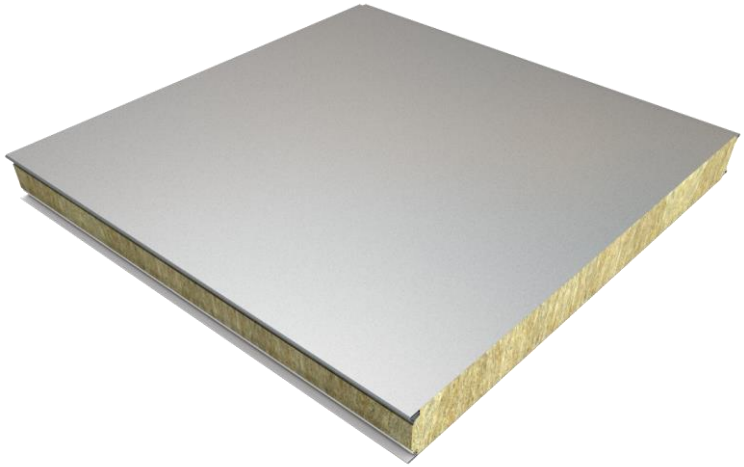
ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Trimoterm FTV Power S sandwich panel with mineral wool core, thickness 60 mm
Trimo, architectural solutions, d.o.o.



EPD HUB, HUB-6672
Published on 18.06.2026, last updated on 18.06.2026, valid until 17.06.2031

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	Trimo, architectural solutions, d.o.o.
Address	Prijateljeva cesta 12, 8210 Trebnje, Slovenia
Contact details	trimo@trimo-group.com
Website	www.trimo-group.com

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	Sister EPD
Parent EPD number	2206
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Jan Tisu, LCA Expert; Trimo d.o.o.
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Haiha Nguyen 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	Trimoterm FTV Power S sandwich panel with mineral wool core, thickness 60 mm
Additional labels	-
Product reference	-
Place(s) of raw material origin	Europe and Asia
Place of production	Šimanovci, Serbia
Place(s) of installation and use	Europe
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 (%)	48,6

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m^2 of a sandwich panel, 60 mm thick, with mineral wool having a density of 120 kg/m^3 installed and with an estimated service life of 50 years
Declared unit mass	16,53 kg
Mass of packaging	0,14 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	40,3
GWP-total, A1-A3 ($kgCO_2e$)	40,0
Secondary material, inputs (%)	15,0
Total energy use, A1-A3 (kWh)	140
Net freshwater use, A1-A3 (m^3)	6,9

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Since its formation in 1961, Trimo has established itself as one of Europe's leading companies developing original and complete building envelope systems (facades and roofs) and modular space solutions.

PRODUCT DESCRIPTION

Trimoterm FTV and FTV HL thermally insulating and fireproof panels provide a total envelope system solution for flat roofs, facades, soffits, internal walls, and ceilings. The Trimoterm FTV and FTV HL panels function as acoustic panels, carrier backing walls for secondary cladding, blast panels with protection against 1 bar blast, hygienic panels with smooth surfaces, and high-performance fire panels with fire resistance up to 4 hours.

Basic details:
Thickness: 60 mm,
Mineral wool density: 120 kg/m^3,
U-Value: 0,65 W/m^{2}K,
Reaction to fire: A2-s1, d0.

Further information can be found at www.trimo-group.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	54,1	Europe, Asia
Minerals	42,8	Europe
Fossil materials	3,1	Europe
Bio-based materials	0	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0,0881
Biogenic carbon content in packaging, kg C	0,000145

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m^2 of a sandwich panel, 60 mm thick, with mineral wool having a density of 120 kg/m^3 installed and with an estimated service life of 50 years
Mass per declared unit	16,53 kg
Functional unit	-
Reference service life	50

SUBSTANCES, REACH - VERY HIGH CONCERN

The product is free from any substances of very high concern (SVHC) under Reach regulations in concentrations exceeding 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 production, along with packaging and other ancillary materials. Fuels consumed by machines and waste handling during production at the manufacturing facilities are part of this stage as well. The study takes into account material losses during manufacturing processes and electricity transmission losses.

The panel consists of a core of mineral wool insulation (stone wool) sandwiched between two steel sheets, bonded with a PUR adhesive.

Raw materials and components are primarily transported to the manufacturing facility by road using EURO 6 lorries (16–32 t), representing the predominant share of transport. Road transport distances are based on typical supply routes and range approximately from 15 km to 1900 km, depending on the material. In specific cases, alternative transport modes such as electric freight train and sea container ship are used for selected inputs.

The components are shipped to Trimo's manufacturing facility in Šimanovci, Serbia. The manufacturing process involves steel de-coiling, roll forming, sheet alignment, mineral wool cutting, adhesive application, panel pressing, cutting, and packaging. These processes necessitate electricity and heating. A market-based approach is used in modelling the electricity mix utilized in the factory. Lubricating oil is applied to specific machines to extend the lifespan of parts. Standard packaging materials, including protective PE foil, EPS blocks, and cardboard, are used for transporting the finished product.

Production losses in the raw materials used have been taken into account. Steel production losses are 0,75% and are directed to recycling. Mineral wool production losses are 4,41% and are modelled as inert material landfill, in line with default scenario assumptions. In practice, mineral wool production off-cuts are returned to the supplier for further processing; however, this recovery route is not reflected in the model in order to maintain methodological consistency. Waste generated during production is transported to treatment facilities by road, with a typical transport distance of 50 km.

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 assumed standard transportation distance from the production plant to the building site is 100 km, using lorries. This reference distance is applied to ensure a consistent, comparable and harmonized modelling approach across products, in line with established industry practice. We assume a vehicle capacity utilization volume factor of 1, indicating full load, as the impact of transportation emissions on the overall results is considered minor, and load variation is deemed negligible. To be on the safe side, we consider the possibility of empty

returns in this study, incorporating them by using an average load factor in the ecoinvent transport data points. Transportation is assumed not to cause losses as the product is appropriately packaged.

Environmental impacts during installation (A5) include disposal of packaging materials and energy consumption for the assumed scenario of product installation. Packaging waste is modelled using representative European waste treatment scenarios based on available statistical data. The following treatment routes are applied: PE foil and EPS: 32,5% recycling, 24,9% landfill, 42,6% incineration; cardboard: 82,0% recycling, 9,0% landfill, 9,0% incineration. Installation waste resulting from cuts is disregarded due to the inherent modularity and prefabrication characteristics of sandwich panels.

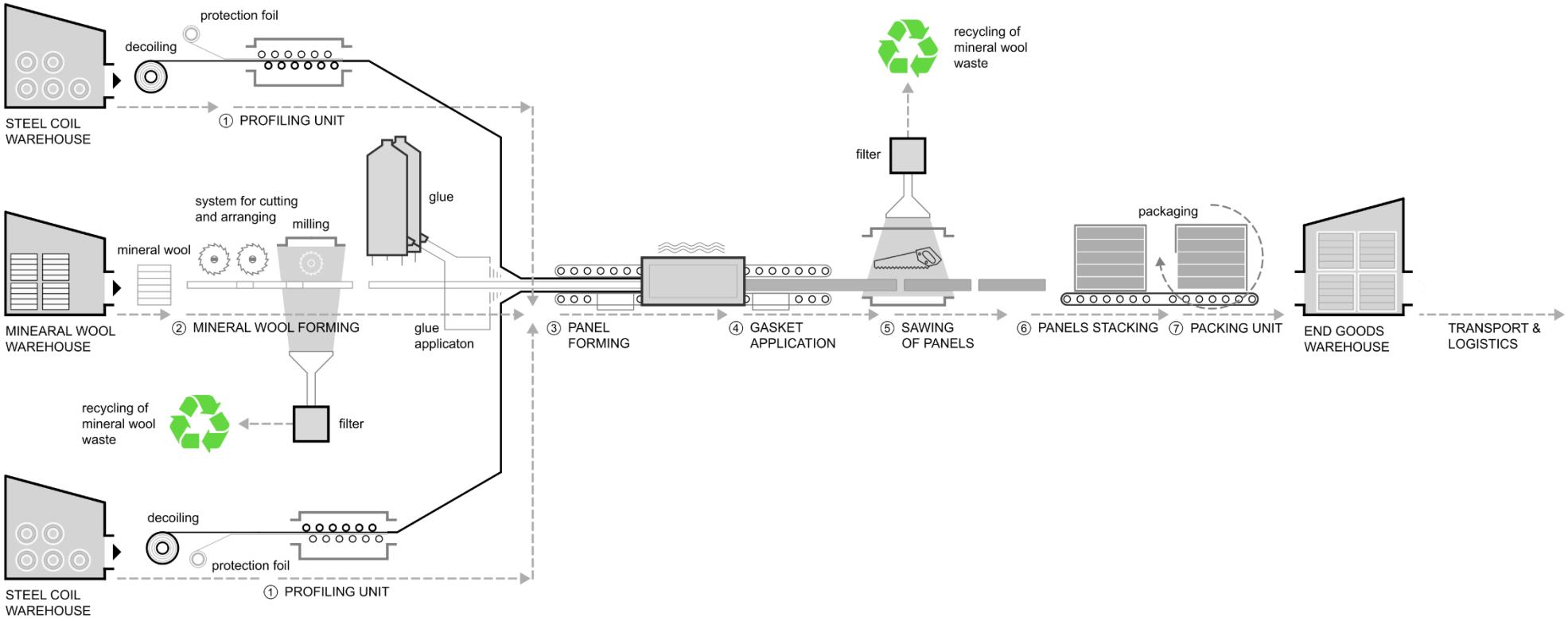
PRODUCT USE AND MAINTENANCE (B1-B7)

Module not declared.

PRODUCT END OF LIFE (C1-C4, D)

The de-construction process (C1) accounts for energy consumption. We assume that waste is collected separately and then transported to a waste treatment center, with a presumed distance of 50 km using a lorry (C2). In module C3, we factor in the energy and resource inputs for sorting and treating waste streams, assuming a 95% recycling rate for steel and incineration (PUR adhesive) at an efficiency of 38%. Module C4 addresses the landfilling of waste, including 5% steel. Considering the potential for material and energy recovery at the end of the product and packaging life cycle (D), recycled raw materials contribute to avoiding virgin material production. Simultaneously, energy recovered from incineration displaces electricity and heat production. The analysis encompasses the benefits and environmental impacts associated with packaging materials.

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.

No material under 1 % of total mass unit was 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'.

- A5 (installation) – packaging waste treatment (PE foil, EPS): European Parliament, "Plastic waste and recycling in the EU: facts and figures" (derived from EU statistics for recycling, landfill and energy recovery)
- A5 (installation) – packaging waste treatment (cardboard): Eurostat data and PSR-0014 v2 (2023)
- A5 (installation) – packaging waste energy recovery efficiency: One Click LCA EU averaging approach, supported by European Commission guidance and industry data (CEWEP, EPA)
- Modules A5 (installation) and C1 (deconstruction) – fuel consumption: aligned with standard industry practice for sandwich panels
- Module C3 (waste processing) – steel recycling rate: World Steel Association, "LCA eco-profile – Organic coated steel" (2023), global average (95%)
- Module C3 (waste processing) – energy recovery efficiency: One Click LCA EU averaging approach, supported by European Commission guidance and industry data (CEWEP, EPA)

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	3,67E+01	2,15E+00	1,18E+00	4,00E+01	3,12E-01	1,63E+00	ND	ND	ND	ND	ND	ND	ND	3,30E-01	8,43E-02	2,04E-01	1,60E+00	-1,19E+01
GWP – fossil	kg CO_2e	3,70E+01	2,15E+00	1,17E+00	4,03E+01	3,12E-01	1,62E+00	ND	ND	ND	ND	ND	ND	ND	3,29E-01	8,42E-02	1,92E-01	1,27E+00	-1,19E+01
GWP – biogenic	kg CO_2e	-3,38E-01	8,35E-04	1,49E-02	-3,22E-01	1,94E-04	3,21E-03	ND	ND	ND	ND	ND	ND	ND	5,34E-05	4,52E-05	1,21E-02	3,29E-01	0,00E+00
GWP – LULUC	kg CO_2e	2,43E-02	7,71E-04	1,48E-03	2,65E-02	1,02E-04	4,80E-04	ND	ND	ND	ND	ND	ND	ND	3,33E-05	3,06E-05	2,11E-04	4,03E-05	-2,30E-03
Ozone depletion pot.	kg CFC-$_{11}$e	1,81E-06	4,83E-08	2,39E-08	1,88E-06	7,05E-09	2,27E-08	ND	ND	ND	ND	ND	ND	ND	5,07E-09	1,98E-09	2,71E-09	2,52E-09	-5,63E-08
Acidification potential	mol H^+e	1,49E-01	4,54E-03	1,12E-02	1,65E-01	6,45E-04	1,02E-02	ND	ND	ND	ND	ND	ND	ND	2,94E-03	1,98E-04	2,26E-03	1,38E-03	-4,48E-02
EP-freshwater[2)]	kg Pe	4,76E-03	1,62E-04	1,80E-03	6,72E-03	2,20E-05	1,48E-04	ND	ND	ND	ND	ND	ND	ND	1,06E-05	6,22E-06	1,31E-04	1,07E-05	-8,59E-03
EP-marine	kg Ne	2,57E-02	1,16E-03	1,15E-03	2,80E-02	1,65E-04	4,50E-03	ND	ND	ND	ND	ND	ND	ND	1,38E-03	5,51E-05	5,07E-04	9,46E-04	-1,07E-02
EP-terrestrial	mol Ne	3,14E-01	1,25E-02	8,16E-03	3,34E-01	1,77E-03	4,88E-02	ND	ND	ND	ND	ND	ND	ND	1,51E-02	5,94E-04	5,72E-03	7,05E-03	-1,16E-01
POCP ("smog")[3)]	kg NMVOCe	1,01E-01	7,55E-03	4,06E-03	1,13E-01	1,09E-03	2,11E-02	ND	ND	ND	ND	ND	ND	ND	4,52E-03	3,51E-04	1,69E-03	1,88E-03	-3,91E-02
ADP-minerals & metals[4)]	kg Sbe	2,76E+01	7,62E-06	2,85E-06	2,76E+01	1,10E-06	7,03E-07	ND	ND	ND	ND	ND	ND	ND	1,20E-07	2,53E-07	1,35E-05	2,08E-07	-1,29E-04
ADP-fossil resources	MJ	4,11E+02	3,04E+01	1,88E+01	4,61E+02	4,40E+00	2,04E+01	ND	ND	ND	ND	ND	ND	ND	4,27E+00	1,27E+00	2,54E+00	1,85E+00	-1,13E+02
Water use[5)]	m^3e depr.	6,88E+00	1,67E-01	3,10E-01	7,35E+00	2,32E-02	1,15E-01	ND	ND	ND	ND	ND	ND	ND	1,07E-02	7,32E-03	4,87E-02	1,40E-01	-2,78E+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	2,10E-06	1,61E-07	3,53E-08	2,30E-06	2,33E-08	2,01E-07	ND	ND	ND	ND	ND	ND	ND	8,41E-08	8,35E-09	3,11E-08	1,12E-08	-8,83E-07
Ionizing radiation[6)]	kBq U235e	9,38E-01	3,78E-02	3,64E-02	1,01E+00	5,09E-03	8,64E-02	ND	ND	ND	ND	ND	ND	ND	1,79E-03	1,37E-03	2,04E-02	1,28E-03	2,70E-01
Ecotoxicity (freshwater)	CTUe	1,23E+02	4,59E+00	4,38E+00	1,32E+02	6,61E-01	5,16E+00	ND	ND	ND	ND	ND	ND	ND	4,34E-01	1,71E-01	1,56E+00	3,08E+00	-9,11E+01
Human toxicity, cancer	CTUh	2,49E-08	3,51E-10	3,40E-10	2,56E-08	5,00E-11	3,85E-10	ND	ND	ND	ND	ND	ND	ND	3,16E-11	1,34E-11	1,65E-10	1,14E-10	-1,57E-08
Human tox. non-cancer	CTUh	1,64E-07	1,86E-08	1,28E-08	1,95E-07	2,69E-09	4,19E-08	ND	ND	ND	ND	ND	ND	ND	5,61E-10	7,87E-10	1,16E-08	3,82E-09	-8,24E-08
SQP[7)]	-	8,86E+01	1,84E+01	1,59E+00	1,09E+02	2,66E+00	1,64E+00	ND	ND	ND	ND	ND	ND	ND	2,95E-01	1,28E+00	4,96E+00	2,38E+00	-3,88E+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	2,21E+01	5,48E-01	5,92E-01	2,33E+01	7,34E-02	1,75E-01	ND	ND	ND	ND	ND	ND	ND	2,67E-02	1,97E-02	4,77E-01	2,55E-02	-1,05E+01
Renew. PER as material	MJ	5,82E-01	0,00E+00	5,65E-01	1,15E+00	0,00E+00	-5,65E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	-5,82E-01	7,40E-03
Total use of renew. PER	MJ	2,27E+01	5,48E-01	1,16E+00	2,44E+01	7,34E-02	-3,90E-01	ND	ND	ND	ND	ND	ND	ND	2,67E-02	1,97E-02	4,77E-01	-5,57E-01	-1,05E+01
Non-re. PER as energy	MJ	4,37E+02	3,04E+01	1,45E+01	4,82E+02	4,40E+00	1,63E+01	ND	ND	ND	ND	ND	ND	ND	4,27E+00	1,27E+00	2,54E+00	-1,20E+01	-1,13E+02
Non-re. PER as material	MJ	1,09E+01	0,00E+00	4,25E+00	1,51E+01	0,00E+00	-4,25E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-2,19E-01	-1,07E+01	1,45E+00
Total use of non-re. PER	MJ	4,48E+02	3,04E+01	1,88E+01	4,97E+02	4,40E+00	1,21E+01	ND	ND	ND	ND	ND	ND	ND	4,27E+00	1,27E+00	2,33E+00	-2,27E+01	-1,12E+02
Secondary materials	kg	2,48E+00	1,43E-02	4,06E-02	2,54E+00	2,00E-03	5,09E-03	ND	ND	ND	ND	ND	ND	ND	1,77E-03	5,39E-04	3,14E-03	5,58E-04	6,57E+00
Renew. secondary fuels	MJ	2,87E-03	1,82E-04	5,89E-03	8,95E-03	2,64E-05	1,84E-05	ND	ND	ND	ND	ND	ND	ND	4,65E-06	7,12E-06	1,47E-04	1,50E-05	-1,06E-03
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	6,87E+00	3,78E-03	7,17E-03	6,88E+00	5,28E-04	2,55E-03	ND	ND	ND	ND	ND	ND	ND	2,57E-04	1,68E-04	1,12E-03	2,96E-03	-4,57E-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	2,78E+00	1,93E-01	8,90E-02	3,06E+00	2,73E-02	4,88E-02	ND	ND	ND	ND	ND	ND	ND	1,39E-02	7,17E-03	3,88E-01	2,91E-02	-2,14E+01
Non-hazardous waste	kg	2,23E+01	2,54E+00	1,13E+01	3,61E+01	3,59E-01	9,16E-01	ND	ND	ND	ND	ND	ND	ND	6,91E-02	1,49E-01	7,39E-01	8,15E+00	-3,30E+01
Radioactive waste	kg	3,00E-03	9,16E-06	9,08E-06	3,02E-03	1,23E-06	2,20E-05	ND	ND	ND	ND	ND	ND	ND	4,20E-07	3,30E-07	5,12E-06	3,08E-07	6,74E-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	4,33E-02	0,00E+00	6,67E-02	1,10E-01	0,00E+00	6,29E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,50E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	2,34E-03	0,00E+00	0,00E+00	2,34E-03	0,00E+00	4,75E-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	2,61E-05	0,00E+00	0,00E+00	2,61E-05	0,00E+00	6,58E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	3,77E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,77E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	1,59E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,81E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	2,18E+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	3,70E+01	2,15E+00	1,17E+00	4,04E+01	3,12E-01	1,62E+00	ND	ND	ND	ND	ND	ND	ND	3,29E-01	8,42E-02	1,92E-01	1,27E+00	-1,19E+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

Manufacturing energy scenario documentation (A3)

Scenario parameter	Value
Electricity data source and quality	Electricity, medium voltage, residual mix, Serbia Modelled with *Electricity, medium voltage, residual mix* (ecoinvent v3.12)
Electricity emission factor	1,06 CO_2e/kWh
Natural gas heating data source and quality	Heat production, natural gas, Europe without Switzerland Modelled with *Heat production, natural gas, at industrial furnace >100kW* (ecoinvent v3.12)
Natural gas heating emission factor	0,0742 CO_2e/MJ

Transport scenario documentation (A4)

Scenario parameter	Value
Fuel type, consumption, and vehicle type	EURO 6 truck 16–32 t
Average transport distance	100 km
Capacity utilization (including empty return)	50 %
Bulk density of transported products	278 kg/m^3
Volume capacity utilization	1

Installation scenario documentation (A5)

Scenario parameter	Value
Energy type and consumption during installation	Petrol: 0,152 kg Diesel: 7,319 MJ Electricity, medium voltage, EU grid mix: 0,37 kWh
Output materials from packaging waste processing at the building site (specified by type and treatment route)	PE foil • Recycling 0,0193 kg • Landfill 0,0148 kg • Incineration 0,0253 kg EPS • Recycling 0,0145 kg • Landfill 0,0111 kg • Incineration 0,0191 kg Cardboard • Recycling 0,0291 kg • Landfill 0,0032 kg • Incineration 0,0032 kg

End of life scenario documentation (C1-C4)

Scenario parameter	Value
Collection process – collected separately	0 kg
Collection process – collected with mixed waste	16,53 kg
Recovery process – for re-use	0 kg
Recovery process – for recycling	8,49 kg
Recovery process – for energy recovery	0,45 kg
Disposal (total) – for final deposition	7,59 kg
Scenario assumptions e.g. transportation	Transport of the product to end-of-life treatment is assumed to be 50 km by heavy duty lorry (>32 t, diesel, EURO 6).

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.

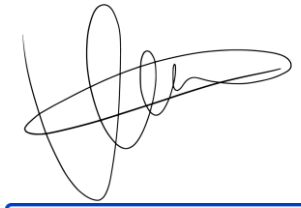
The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

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 for EPD Hub Limited 18.06.2026



VERIFIED ISO 14025