

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006 and
EN 15804:2012+A2:2019 for:

ISOVER SK-C

Version: 1

Date of publication: 2024-1-24

Valid until: 2029-1-24

Registration number: S-P-11475

Programme: The International EPD® System,
www.environdec.com

Programme operator: EPD international AB

EPD® owner: Saint-Gobain Finland Oy



General information

Program information

PROGRAMME: The International EPD® System

ADDRESS: EPD International AB - Box 210 60 - SE-100 31 Stockholm - Sweden

WEBSITE: www.environdec.com

E-MAIL: info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification

Product category rules (PCR):

CEN standard EN 15804:2012 + A2:2019 serves as the Core Product Category Rules (PCR)

PCR 2019:14 Construction Products, version 1.3.1

Complementary PCR (c-PCR-005), 2019-12-20. Thermal insulation products (EN 16783:2017)

PCR review was conducted by:

The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members.

Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.

Life Cycle Assessment (LCA):

LCA accountability: Elisa Lindqvist, A-Insinöörin Suunnittelu Oy

Third-party verification:

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

☒ EPD verification by individual verifier

Third party verifier: Martin Erlandsson, IVL Swedish Environmental Research Institute



Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third part verifier: ☒ Yes ☐ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same version number up to the first two digits) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison.

Product information

Company information

Manufacturer: Saint-Gobain Finland Oy

Address: Strömberginkuja 2 (PO Box 70) 00380 Helsinki

Contact: Päivi Pesu, paivi.pesu@saint-gobain.fi

Production plant: Forssa

Management system-related certification: ISO 9001, ISO 14001

Owner of the declaration: Saint-Gobain Finland Oy

Product name and manufacturer represented: Isover SK-C, Saint-Gobain Finland Oy

UN CPC CODE: 37990

EPD prepared by: Elisa Lindqvist, A-Insinöörit Suunnittelu Oy

Product description and description of use

ISOVER SK-C is a silicone-treated, water-repellent mineral wool mat cut into strips and coated all around with non-woven fabric. The most typical applications of ISOVER SK-C are the sealing of the installation gaps between window and door frames and the seam insulation of frame structures and connecting wooden elements and joints. The production site of Saint-Gobain Finland Oy in Forssa uses natural raw materials (sand), recycled glass cullet, and fusion and fiberizing techniques to produce glass wool. The products obtained come in the form of a "mineral wool strip" consisting of a soft and airy structure.

Mineral wool insulation is used in buildings as well as industrial facilities. It ensures a high level of comfort, lowers energy costs, minimizes carbon dioxide (CO₂) emissions, prevents heat loss through pitched roofs, walls, floors, pipes and boilers, reduces noise pollution and protects homes and industrial facilities from the risk of fire. Mineral wool products last for the average building's lifetime, or as long as the insulated building component is part of the building.

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 m of Isover SK-C with a thermal resistance of 0,5 m²K/W, thickness of 20 mm and width of 200 mm (installed in the building). This is the most representative product of the group which this EPD is covered as it has the highest production volume within the product group. To calculate the range of commercial thicknesses between 20 mm and 50 mm, and different widths and thermal resistances, please see table in additional information chapter "Influence of particular thermal resistance, thickness and width".

Technical data/physical characteristics:

More information at: <https://www.isover.fi/tuotteet/isover-sk-c>

Feature	Unit	20 mm	30 mm	40 mm	50 mm
Thickness	mm	20,0	30,0	40,0	50,0
Width*	mm	85,0 - 240,0			
Weight	kg / m	0,046 - 0,122	0,122 - 0,128	0,068 - 0,180	0,202
Density	kg / m ³	25,0	20,0	20,0	20,0
Thermal resistance of the Product (UNE EN 12667)	m ² K/W	0,50	0,75	1,00	1,25
Thermal conductivity of the mineral wool (UNE EN 12667)	W/(m·K)	0,039			
Reaction to fire (UNE EN 13501-1)		A2-s1,d0			

*) Please see table in additional information chapter "Influence of particular thermal resistance, thickness and width".

Declaration of the main product components and/or materials

Description of the main components and/or materials for 1 m of the product with a thermal resistance of 0,5 m²K/W for the calculation of the EPD®:

PARAMETER	VALUE
Quantity for 1 m of product	0,108 kg of finished product
Thickness	20 mm
Width	200 mm
Facing	Coated all around with non-woven fabric 0,0087 kg
Packaging for the transportation and distribution	Polyethylene: 0,00045 kg Wooden pallet: 0,0101 kg
Product used for the Installation	None

LCA calculation information

TYPE OF EPD	Cradle to grave and module D
FUNCTIONAL UNIT	Providing a thermal insulation on 1 m of product with a thermal resistance of 0,5 m ² K/W during 60 years
SYSTEM BOUNDARIES	A+B+C+D
REFERENCE SERVICE LIFE (RSL)	The Reference Service Life (RSL) of the insulation product is 60 years. This 60-year value is the amount of time that we recommend our products last for without refurbishment and corresponds to standard building design life.
CUT-OFF RULES	Life Cycle Inventory data for a minimum of 99% of total inflows to the upstream and core module shall be included. Flows related to human activities such as employee transport are excluded. Transportation in-site is excluded The construction of plants, production of machines and transportation systems are excluded
ALLOCATIONS	Allocation has been avoided when possible. For those cases where allocation is needed, allocation criteria is based on mass. The polluter pays and modularity principles have been followed.
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Data is collected from 1 production site located in Finland Data collected for the year 2022
BACKGROUND DATA SOURCE	Ecoinvent v.3.8 (2021)
SOFTWARE	One Click LCA

LCA scope

System boundaries (X=included. ND=module not declared)

	PRODUCT STAGE			CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
	Raw material supply	Transport	Manufacturing	Transport	Construction-Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-recovery
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	FI	FI	FI	EU	EU	-	-	-	-	-	-	-	-	EU	-	EU	-
Specific data used	>44% GWP-GHG																
Variation products	<10 % GWP-GHG																
Variation sites	0 %																

Life cycle stages



A1-A3, Product stage

Description of the stage: the product stage of the mineral wool products is subdivided into 3 modules A1, A2 and A3 respectively “raw material supply”, “transport” and “manufacturing”.

The aggregation of the modules A1, A2 and A3 is a possibility considered by the EN 15804 standard. This rule is applied in this EPD.

A1, Raw materials supply

This module takes into account the extraction and processing of all raw materials and energy which occur upstream to the studied manufacturing process.

Specifically, the raw material supply covers production of binder components and sourcing (quarry) of raw materials for fiber production, e.g. sand and borax for glass wool. Besides these raw materials, recycled materials (agglomerates) are also used as input.

A2, Transport to the manufacturer

The raw materials are transported to the manufacturing site. In our case, the modeling include: road, sea and rail (average values) of each raw material.

A3, Manufacturing

This module includes the manufacturing of the product and packaging. Specifically, it covers the manufacturing of glass, resin, mineral wool (including the processes of fusion and fiberizing showed in the flow diagram), and the packaging. This module also includes the emissions and wastes generated during manufacturing.

Manufacturing process flow diagram



A4-A5, Construction process stage

Description of the stage: the construction process is divided into 2 modules: A4, transport to the building site and A5, installation in the building. Since there is a product loss during installation (2 %), the quantification of raw material compensation (A5) and its transport to the building site (A4) are considered.

A4, Transport to the building site: This module includes transport from the production gate to the building site. Transport is calculated based on a scenario with the parameters described in the following table.

PARAMETER	VALUE
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	Transport, freight, lorry >32 metric ton, EURO5
Distance	223 km
Capacity utilisation	100 % of the capacity in volume Empty returns are not taken into account as it is assumed that return trip is used by transportation companies to serve the needs of other clients
Bulk density of transported products*	25 kg/m ³
Volume capacity utilisation factor	1 (In reality it may vary but as the role of transportation emission in total results is small and so the variety in load assumed to be negligible)

* Isover products presents a compression factor between 1 and 5. Bulk mass / most common truck of 110 m³ volume.

A5, Installation in the building:

this module includes product installation losses, emissions of energy use in installation and generation of waste at the construction site.

No additional accessory was considered for the implementation phase insulation product. No energy is needed to install the product (manual installation without tool)

PARAMETER	VALUE/DESCRIPTION
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	2 %
Distance	25 km to landfill by truck
Output materials (specified by type) as results of waste processing at the building site e.g. of collection for recycling, for energy recovering, disposal (specified by route)	PE film: 0,00046 kg/m Pallet: 0,0103 kg/m Packaging wastes are 100 % collected and modeled as recovered matter. Glass wool losses are 100 % landfilled.

B1-B7, Use stage (excluding potential savings)

Description of the stage: the use stage is divided into the following modules:

- B1: Use
- B2: Maintenance
- B3: Repair
- B4: Replacement

- B5: Refurbishment
- B6: Operational energy use
- B7: Operational water use

Description of the scenarios and additional technical information:

The product has a reference service life of 60 years. This assumes that the product will last in situ with no requirements for maintenance, repair, replacement, or refurbishment throughout this period. Therefore, it has no impact at this stage.

C1-C4, End of Life Stage

Description of the stage: this stage includes the next modules:

C1, Deconstruction, demolition

The de-construction and/or dismantling of insulation products take part of the demolition of the entire building. The de-construction and/or dismantling of the product take part of the demolition of the entire building. In our case, the environmental impact is assumed to be very small and can be neglected.

C2, Transport to waste processing

The model use for the transportation (see A4, transportation to the building site) is applied, but the transport distance is assumed to be 25 km.

C3, Waste processing for reuse, recovery and/or recycling

The product is considered to be landfilled without reuse, recovery or recycling.

C4, Disposal

The product is assumed to be 100 % landfilled.

Description of the scenarios and additional technical information:

PARAMETER	VALUE/DESCRIPTION
Collection process specified by type	The entire product, including any surfacing is collected alongside any mixed construction waste. 0,108 kg (100 %) of mineral wool (collected with mixed construction waste)
Recovery system specified by type	There is no recovery, recycling or reuse of the product once it has reached its end-of-life phase.
Disposal specified by type	The product alongside the mixed construction waste from demolishing is landfilled. 0,108 kg (100 %) of mineral wool are landfilled
Assumptions for scenario development (e.g. transportation)	The product alongside the mixed construction waste from demolishing is landfilled. The waste going to landfill is transported 25 km by truck from deconstruction/demolition sites to landfill

D, Reuse/recovery/recycling potential

100 % of wastes are landfilled. There is no reuse, nor recovery, nor recycling of this product. Hence, no recycling benefits are reported on stage D.

Content declaration

Content declaration represents product providing a thermal insulation on 1 m of product with thickness of 20 mm, width of 200 mm and thermal resistance of 0,5 m²K/W during 60 years.

Product components *	Weight (%)	Post-consumer material weight (%)	Biogenic material weight- kg C/kg
Mineral materials	5 - 18 %	0 %	0,00
Recycled glass	75 %	75 %	
Non-woven fabric	10 %	0 %	
Binder	2 - 9 %	0 %	
Additives	0 - 1 %	0 %	
Sum	100 %	75 %	
Packaging materials	Weight (kg)	Weight-% (vs the product)	Biogenic material, weight- kg C/kg
Polyethylene	0,00045	0,42 %	0,00
Wooden pallet	0,0101	9,35 %	0,005
Sum	0,01055	9,77 %	0,005

*) Values of product components are based partly on raw material EPD (Isover KH).

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂.

During the life cycle of the product any hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has not been used in a percentage higher than 0.1% of the weight of the product.

The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.

LCA results

As specified in EN 15804:2012+A2:2019 and the Product Category Rules, the environmental impacts are declared and reported using the baseline characterization factors are from the ILCD. Specific data has been supplied by the plant, and generic data come from Ecoinvent databases.

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.

All emissions to air, water, and soil, and all materials and energy used have been included.

All the results refer to a functional unit of 1 m of mineral wool with thermal resistance of 0,5 m²K/W for a thickness of 20 mm and width of 200 mm. This is the most representative product of the group which this EPD is covered as it has the highest production volume within the product group. To obtain results of other thicknesses and widths and thermal resistances, see chapter “Influence of particular thermal resistance, thickness and width”.

Environmental Impacts

Environmental indicators	Unit	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVERY RECYCLING
		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
GWP – total ¹⁾	kg CO ₂ e	1,34E-01	2,49E-03	1,54E-02	0	0	0	0	0	0	0	0	2,54E-04	0	5,70E-04	0
 GWP – fossil	kg CO ₂ e	1,47E-01	2,51E-03	3,18E-03	0	0	0	0	0	0	0	0	2,53E-04	0	5,69E-04	0
GWP – biogenic	kg CO ₂ e	-1,23E-02	1,00E-06	1,22E-02	0	0	0	0	0	0	0	0	9,80E-08	0	0	0
GWP – LULUC	kg CO ₂ e	9,95E-05	9,03E-07	2,27E-06	0	0	0	0	0	0	0	0	9,35E-08	0	5,37E-07	0
 Ozone depletion pot.	kg CFC ₁₁ e	1,58E-07	6,00E-10	3,20E-09	0	0	0	0	0	0	0	0	5,83E-11	0	2,30E-10	0
 Acidification potential	mol H ⁺ e	1,03E-03	1,05E-05	2,16E-05	0	0	0	0	0	0	0	0	1,07E-06	0	5,35E-06	0
 EP-freshwater	kg Pe	1,20E-05	1,72E-08	2,51E-07	0	0	0	0	0	0	0	0	2,07E-09	0	5,96E-09	0
	kg Ne	2,87E-04	3,17E-06	5,97E-06	0	0	0	0	0	0	0	0	3,19E-07	0	1,85E-06	0
	mol Ne	3,26E-03	3,50E-05	6,78E-05	0	0	0	0	0	0	0	0	3,52E-06	0	2,04E-05	0
 POCP (“smog”) ²⁾	kg NMVOCe	8,84E-04	1,13E-05	1,85E-05	0	0	0	0	0	0	0	0	1,13E-06	0	5,92E-06	0
 ADP-minerals & metals ³⁾	kg Sbe	1,07E-06	5,90E-09	2,24E-08	0	0	0	0	0	0	0	0	5,94E-10	0	1,31E-09	0
	MJ	2,14E+00	3,85E-02	4,63E-02	0	0	0	0	0	0	0	0	3,81E-03	0	1,56E-02	0
 Water use ⁴⁾	m ³ e depr.	5,56E-02	1,78E-04	1,18E-03	0	0	0	0	0	0	0	0	1,70E-05	0	4,95E-05	0

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

Resources Use

Resources Use indicators		Unit	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
			A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Renew. PER as energy ⁵⁾	MJ	1,00E+00	4,98E-04	2,04E-02	0	0	0	0	0	0	0	0	4,29E-05	0	1,35E-04	0
	Renew. PER as material	MJ	1,07E-01	0	-1,07E-01	0	0	0	0	0	0	0	0	0	0	0	0
	Total use of renew. PER	MJ	1,11E+00	4,98E-04	-8,70E-02	0	0	0	0	0	0	0	0	4,29E-05	0	1,35E-04	0
	Non-re. PER as energy	MJ	2,17E+00	3,85E-02	4,68E-02	0	0	0	0	0	0	0	0	3,81E-03	0	1,56E-02	0
	Non-re. PER as material	MJ	2,62E-02	0	-2,62E-02	0	0	0	0	0	0	0	0	0	0	0	0
	Total use of non-re. PER	MJ	2,19E+00	3,85E-02	2,06E-02	0	0	0	0	0	0	0	0	3,81E-03	0	1,56E-02	0
	Secondary materials	kg	9,72E-02	1,08E-05	1,95E-03	0	0	0	0	0	0	0	0	1,06E-06	0	3,28E-06	0
	Renew. secondary fuels	MJ	1,15E-04	9,56E-08	2,31E-06	0	0	0	0	0	0	0	0	1,07E-08	0	8,56E-08	0
	Non-ren. secondary fuels	MJ	1,23E-24	0	2,47E-26	0	0	0	0	0	0	0	0	0	0	0	0
	Use of net fresh water	m ³	1,21E-03	5,10E-06	2,64E-05	0	0	0	0	0	0	0	0	4,93E-07	0	1,71E-05	0

5) PER = Primary energy resources

6) Energy stored in the product is not balanced out when the product is landfilled in the end-of-life

Waste Category & Output flows

			PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
Waste Category & Output Flows		Unit	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Hazardous waste disposed	kg	3,72E-03	4,13E-05	8,82E-05	0	0	0	0	0	0	0	0	5,05E-06	0	0	0
	Non-hazardous waste disposed	kg	1,06E-01	7,18E-04	2,62E-03	0	0	0	0	0	0	0	0	8,29E-05	0	1,08E-01	0
	Radioactive waste disposed	kg	9,08E-06	2,65E-07	2,06E-07	0	0	0	0	0	0	0	0	2,55E-08	0	0	0
	Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Materials for Recycling	kg	3,49E-03	0	1,08E-02	0	0	0	0	0	0	0	0	0	0	0	0
	Material for Energy Recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exported electrical energy	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exported thermal energy	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Additional voluntary indicators from EN 15804 (according to ISO 2190:2017) environmental information

Environmental indicators	Unit	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
 GWP-GHG ⁷⁾	kg CO ₂ e	1,47E-01	2,51E-03	3,18E-03	0	0	0	0	0	0	0	0	2,53-04	0	5,69E-04	0

7) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO₂ is set to zero.

Additional information:

Influence of particular thermal resistance, thickness and width

This EPD® includes the range of thicknesses between 20 mm and 50 mm and widths between 85 mm and 240 mm by applying a multiplication factor. All the results of this EPD refer to the reference thickness of 20 mm and width of 200 mm (value of $R=1,35 \text{ m}^2\text{K/W}$).

In the table below the main products with specific thicknesses are listed. To obtain the environmental performance associated with every specific thickness, the indicators GWP-GHG and GWP-fossil expressed in this EPD® must be multiplied by its corresponding multiplication factor.

PRODUCT THICKNESS (MM)	PRODUCT WIDTH (MM)	THERMAL RESISTANCE ($\text{m}^2\text{K/W}$)	MULTIPLICATION FACTOR GWP-GHG	CONVERSION TO KG GWP-GHG, $\text{kgCO}_2\text{e/kg}$ product (A1-A3)
20	90	0,50	0,45	1,35
20	115	0,50	0,58	1,35
20	140	0,50	0,71	1,35
20	170	0,50	0,86	1,35
20	200	0,50	1,00	1,35
20	225	0,50	1,11	1,35
20	240	0,50	1,19	1,35
30	200	0,75	1,20	1,35
30	210	0,75	1,26	1,35
40	85	1,00	0,67	1,35
40	105	1,00	0,84	1,35
40	110	1,00	0,88	1,35
40	135	1,00	1,07	1,35
40	160	1,00	1,29	1,35
40	180	1,00	1,42	1,35
40	220	1,00	1,77	1,35
50	200	1,25	1,99	1,35

Electricity information

TYPE OF INFORMATION	DESCRIPTION
Location	Electricity, Finland, residual mix
Geographical representativeness description	Finland
Reference year	2022
Source	Ecoinvent
CO ₂ emission kg CO ₂ eq. / kWh	0.68

Data quality

Inventory data quality is judged by geographical, temporal, and technological representativeness. To cover these requirements and to ensure reliable results, first-hand industry data crossed with LCA background datasets were used. The data was collected from internal records and reporting documents from Manufacturer. After evaluating the inventory, according to the defined ranking in the LCA report, the assessment reflects good inventory data quality.

Environmental impacts according to EN 15804:2012 + A1

The following tables presents results of Isover SK-C according to EN 15804+A1

Environmental Impact according to EN 15804 + A1

Environmental indicators	Unit	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
 Global Warming Pot. ⁸⁾	kg CO ₂ e	1,47E-01	2,49E-03	3,18E-03	0	0	0	0	0	0	0	0	2,51E-04	0	5,57E-04	0
 Ozone depletion Pot.	kg CFC ₁₁ e	1,24E-07	4,75E-10	2,50E-09	0	0	0	0	0	0	0	0	4,62E-11	0	1,82E-10	0
 Acidification	kg SO ₂ e	7,98E-04	8,13E-06	1,68E-05	0	0	0	0	0	0	0	0	8,34E-07	0	4,04E-06	0
 Eutrophication	kg PO ₄ ³⁻ e	2,89E-04	1,82E-06	6,42E-06	0	0	0	0	0	0	0	0	1,90E-07	0	8,71E-07	0
 POCP ("smog")	kg C ₂ H ₄ e	4,96E-05	3,20E-07	1,03E-06	0	0	0	0	0	0	0	0	3,25E-08	0	1,69E-07	0
 ADP-elements	kg Sbe	6,61E-06	5,74E-09	1,33E-07	0	0	0	0	0	0	0	0	5,75E-10	0	1,29E-09	0
 ADP-fossil	MJ	2,47E+00	3,85E-02	5,29E-02	0	0	0	0	0	0	0	0	3,81E-03	0	1,56E-02	0

8) The indicator excludes biogenic carbon and is almost equal to the indicator GWP-GHG

References

1. ISO 14040:2006: Environmental Management-Life Cycle Assessment-Principles and framework.
2. ISO 14044:2006: Environmental Management-Life Cycle Assessment-Requirements and guidelines.
3. ISO 14025:2006: Environmental labels and Declarations-Type III Environmental Declarations-Principles and procedures.
4. EN 16783:2017 Thermal insulation products - Product category rules (PCR) for factory made and in-situ formed products for preparing environmental product declarations
5. The general program instructions (GPI) for the international EPD® (version 4) www.environdec.com.
6. PCR 2019:14 Construction products V1.3.0
7. EN 15804:2019+A2 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
8. European Chemical Agency, Candidate List of substances of very high concern for Authorization.
http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp
9. Environmental Product Declaration ISOVER KH (Registration number: The International EPD System: S-P-08815
10. Ecoinvent database v.3.8 (2021) and One Click LCA database
11. Finnish national Emissions database for construction (www.co2data.fi)
12. ISOVER LCA report, Information for the Environmental Product Declaration of insulation product by Saint-Gobain Finland Oy, October 2023 (20231026_LCA_ISOVER_SKC_REPORT_EN15804+A2_docx)