



# ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006 and  
EN 15804:2012+A2:2019/AC:2021 for:

## ISOVER SeaComfort Roll 16 G220

**Version: 1**

**Date of publication:** 2023-11-16

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**Registration number:** S-P-11090

**Programme:** The International EPD® System,  
[www.environdec.com](http://www.environdec.com)

**Programme operator:** EPD international AB  
**EPD® owner:** Saint-Gobain Finland Oy



## Programme and product information

**Manufacturer:** Saint-Gobain Finland Oy, Strömberginkuja 2 (PO Box 70), FI-00380 Helsinki

**Production plant(s):** Isover Forssa, Finland

**Management system-related certification:** DS/EN ISO 9001, DS/EN ISO 14001

**Owner of the declaration:** Saint-Gobain Finland Oy

**EPD® prepared by:** Saint-Gobain Finland Oy, Päivi Pesu (Paivi.Pesu@saint-gobain.com) & Saint-Gobain LCA central team, Patricia Jimenez Diaz ([Patricia.JimenezDiaz@saint-gobain.com](mailto:Patricia.JimenezDiaz@saint-gobain.com))

**Geographical scope of the EPD®:** Finland

### Programme information

**PROGRAMME:** The International EPD® System

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

**Product category rules (PCR):** PCR 2019:14 Construction Products, version 1.2.5

**Complementary PCR:** c-PCR-005 Thermal Insulation Products (EN 16783:2017), ver. 2019-12-20

**PCR review was conducted by:** The Technical Committee of the International EPD® System. See [www.environdec.com/TC](http://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](http://www.environdec.com/contact).

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

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 of 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 must be based on the same PCR (including the same version number) 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 description and description of use

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 m<sup>2</sup> of mineral wool with a thermal resistance of 1 K.m<sup>2</sup>.W<sup>-1</sup> of ISOVER SeaComfort Roll G220. ISOVER SeaComfort Roll G220 is a soft glass wool mat, faced with a white glass fabric laminate and packed in rolls. Its main application is as thermal insulation of decks and bulkheads. ISOVER SeaComfort Roll G220 has very high compressibility and can be compressed to 1/4 of its nominal volume. It is treated with water-repulsion substance. The insulating material is non-organic and chemically neutral and does not contain corrosive agents.

The production site of Saint-Gobain Isover 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 mat" consisting of a soft and airy structure.

On Earth, naturally, the best insulator is dry immobile air at 10°C: its thermal conductivity factor, expressed in  $\lambda$ , is 0.025 W/(m.K) (watts per meter Kelvin degree). The thermal conductivity of mineral wool is close to immobile air as its lambda varies from 0,030 W/(m.K) for the most efficient to 0,045 W/(m.K) to the least.

With its entangled structure, mineral wool is a porous material that traps the air, making it one of the best insulating materials. The porous and elastic structure of the wool also absorbs noise in the air, knocks and offers acoustic correction inside premises. Mineral wool containing incombustible materials does not fuel fire or propagate flames. 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 (CO<sub>2</sub>) 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 construction.

### Technical data/physical characteristics (for a thickness of 37 mm):

Thermal resistance of the Product: 1,0 K.m<sup>2</sup>.W<sup>-1</sup>

The thermal conductivity of the mineral wool is: 0,037 W/(m.K)

Reaction to fire: MED/3.13

Density: 16 kg/m<sup>3</sup>

UN CPC CODE: 37990

GTIN: 6416923091935

## Declaration of the main product components and/or materials

Description of the main components and/or materials for 1 m<sup>2</sup> of mineral wool with a thermal resistance of 1,0 K.m<sup>2</sup>.W<sup>-1</sup> for the calculation of the EPD®:

| PARAMETER                                | VALUE                             |
|--|-----------------------------------|
| Quantity for 1 m <sup>2</sup> of product | 807 g of finished product         |
| Thickness                                | 37 mm                             |
| Facing                                   | glass fabric 215 g/m <sup>2</sup> |
| Product used for the Installation        | none                              |

Content declaration:

| Product components  | Weight range (%)                          | Post-consumer material weight (%) of product | Pre-consumer material weight (%) of product    | Renewable material weight (%) of product   |
|---------------------|---|--|--|--|
| <b>SC Roll G220</b> | <b>100</b>                                |  |  |  |
| Mineral materials   | 5 – 20                                    | 0  | 0  | 0  |
| Recycled glass      | 59 – 63                                   | 100  | 0  | 0  |
| Binder              | 2 - 10                                    | 0  | 0  | unknown                                    |
| Additives           | 0 - 1                                     | 0  | 0  | unknown                                    |
| Facing              | 21  | 0  | 0  | 0  |
| Packaging materials | Weight (kg) per m <sup>2</sup> of product | Weight (%) vs the product                    | Post-consumer material weight (%) of component | Renewable material weight (%) of component |
| Wooden pallet       | 0,039                                     | 4,9  | 0  | 98,5                                       |
| Others              | <0,001                                    | 0,0  | unknown  | unknown                                    |
| Polyethylene        | 0,010                                     | 1,3  | 0  | 0  |

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 calculation information

|  |   |
|--|---|
| <b>TYPE OF EPD</b>                           | Cradle to grave and module D  |
| <b>FUNCTIONAL UNIT</b>                       | Providing a thermal insulation on 1 m <sup>2</sup> of product with a thermal resistance of 1 K.m <sup>2</sup> .W <sup>-1</sup> during 50 years  |
| <b>SYSTEM BOUNDARIES</b>                     | Cradle to grave + Module D = A + B + C +D   |
| <b>REFERENCE SERVICE LIFE (RSL)</b>          | 50 years  |
| <b>CUT-OFF RULES</b>                         | 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.<br>Transportation in-site is excluded<br>The construction of plants, production of machines and transportation systems are excluded |
| <b>ALLOCATIONS</b>                           | Allocation criteria are based on mass.<br>The polluter pays and modularity principles have been followed.   |
| <b>GEOGRAPHICAL COVERAGE AND TIME PERIOD</b> | Scope: Finland<br>Data is collected from Forssa plant located in Finland<br>Data collected for the year 2022<br>Cradle to grave study   |
| <b>BACKGROUND DATA SOURCE</b>                | The databases GaBi 2022 and ecoinvent v.3.6   |
| <b>SOFTWARE</b>                              | GaBi 10   |

## LCA scope

| System boundaries (X=included. MND=module not declared) |                     |           |               |                            |                           |           |             |        |             |               |                        |                       |                            |           |                  |          |   |
|---|---------------------|-----------|---------------|----------------------------|---------------------------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|---|
|   | PRODUCT STAGE       |           |               | CONSTRUCTION PROCESS STAGE |                           | USE STAGE |             |        |             |               |                        |                       | END OF LIFE STAGE          |           |                  |          | BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY |
|   | Raw material supply | Transport | Manufacturing | Transport                  | Construction installation | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential            |
| 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            | Nordics                    | Nordics                   | -         | -           | -      | -           | -             | -                      | -                     | RER                        | RER       | RER              | RER      | RER   |
| Specific data used                                      | > 47% GWP-GHG       |           |               |                            |                           |           |             |        |             |               |                        |                       |                            |           |                  |          |   |
| Variation products                                      | 0%                  |           |               |                            |                           |           |             |        |             |               |                        |                       |                            |           |                  |          |   |
| 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 are also used as input.

### A2, Transport to the manufacturer

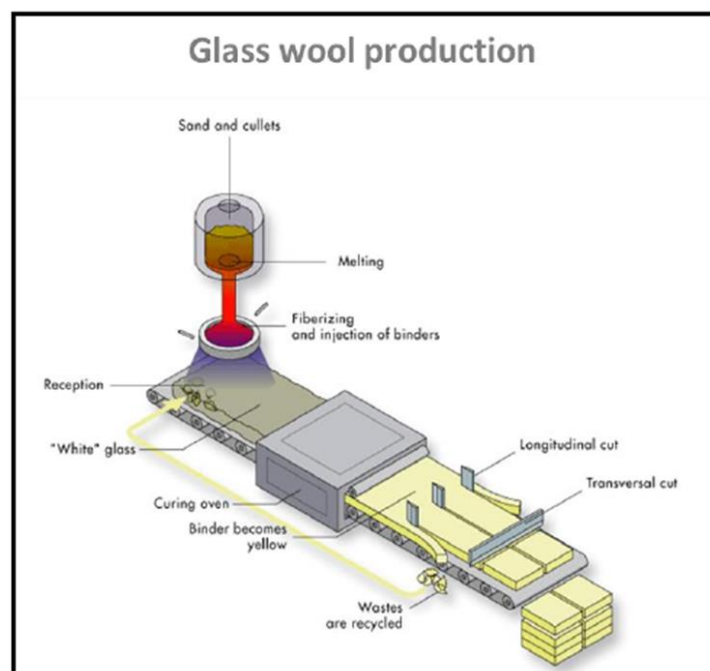
The raw materials are transported to the manufacturing site. In our case, the modeling include: road, sea and rail (average values) of each raw material.

### A3, Manufacturing

This module includes the manufacturing of the product and packaging. Specifically, it covers the manufacturing of glass, binder, 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

System diagram:



## A4-A5, Construction process stage

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

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

| PARAMETER   | VALUE   |
|---|---|
| <b>Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.</b> | Freight truck, maximum load weight of 27 t and consumption of 0,38 liters per km        |
| <b>Distance</b>   | 180 km  |
| <b>Capacity utilisation (including empty returns)</b>   | 100% of the capacity in volume<br>25% of the capacity in weight<br>30% of empty returns |
| <b>Bulk density of transported products*</b>  | 61 kg/m <sup>3</sup>  |

\* Bulk mass / most common truck of 110 m<sup>3</sup> volume

**A5, Installation in the construction:** this module includes:

No additional accessory was taken into account for the implementation phase insulation product.

No energy is needed to install the product (manual installation without tool)

The following parameters has been used to model the waste handling of product and packaging generated on the construction site.

| PARAMETER  | VALUE/DESCRIPTION   |
|--|---|
| <b>Wastage of materials on the construction site before waste processing, generated by the product's installation (specified by type)</b>  | 2 %   |
| <b>Distance</b>  | 25 km to landfill by truck  |
| <b>Output materials (specified by type) as results of waste processing at the construction site e.g. of collection for recycling, for energy recovering, disposal (specified by route)</b> | Pallet: 0,039 kg recycled<br>PE & others: 0,010 kg landfilled<br>Product loss: 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

The product has a reference service life of 50 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 construction. In our case, the environmental impact is assumed to be lesser than 1% of the total environmental impacts and can be neglected.

### C2, Transport to waste processing

The model use for the transportation (see A4, transportation to the construction site) is applied.

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

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

### C4, Disposal

The mineral wool 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.<br>0,807 kg 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.<br>0,807 kg of mineral wool are landfilled  |
| Assumptions for scenario development (e.g. transportation) | The product alongside the mixed construction waste from demolishing is landfilled.<br>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. Packaging materials are not considered. Hence, no recycling benefits are reported on stage D.














## 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. Characterization factors of EF 3.0 has been used in the calculation. Specific data has been supplied by the plant, and generic data come from GABI and ecoinvent databases.

The estimated impact results are only relative statements which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.











All the results refer to a functional unit of 1 m<sup>2</sup> of mineral wool with thermal resistance of 1 m<sup>2</sup>.K.W<sup>-1</sup> for a thickness of 37 mm which is not a commercial thickness. To obtain results of commercial thicknesses see “Additional information”.

## Environmental Impacts

| Environmental indicators   | 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 |
|  Climate Change [kg CO2 eq.]  | 4,49E-01      | 9,12E-03           | 7,02E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,23E-03     | 0                   | 1,44E-02    | 0                            |
|  Climate Change (fossil) [kg CO2 eq.]                                     | 4,66E-01      | 8,89E-03           | 1,14E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,20E-03     | 0                   | 1,26E-02    | 0                            |
|  Climate Change (biogenic) [kg CO2 eq.]                                   | -1,77E-02     | 2,23E-04           | 5,88E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 3,02E-05     | 0                   | 1,75E-03    | 0                            |
|  Climate Change (land use change) [kg CO2 eq.]                            | 2,70E-04      | 5,20E-07           | 6,21E-06        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 7,03E-08     | 0                   | 3,64E-05    | 0                            |
|  Ozone depletion [kg CFC-11 eq.]  | 4,04E-07      | 1,31E-18           | 8,12E-09        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,78E-19     | 0                   | 4,68E-17    | 0                            |
|  Acidification terrestrial and freshwater [Mole of H+ eq.]                | 3,82E-03      | 5,25E-05           | 8,08E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 7,10E-06     | 0                   | 9,07E-05    | 0                            |
|  Eutrophication freshwater [kg P eq.]                                     | 4,81E-05      | 1,71E-09           | 9,81E-07        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 2,31E-10     | 0                   | 2,17E-08    | 0                            |
|  Eutrophication marine [kg N eq.]   | 1,23E-03      | 2,60E-05           | 3,07E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 3,51E-06     | 0                   | 2,33E-05    | 0                            |
|  Eutrophication terrestrial [Mole of N eq.]                               | 1,37E-02      | 2,85E-04           | 2,91E-04        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 3,86E-05     | 0                   | 2,56E-04    | 0                            |
|  Photochemical ozone formation - human health [kg NMVOC eq.]            | 3,43E-03      | 4,88E-05           | 7,31E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 6,59E-06     | 0                   | 7,07E-05    | 0                            |
|  Resource use, mineral and metals [kg Sb eq.] <sup>1</sup>              | 3,06E-06      | 1,07E-10           | 6,23E-08        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,44E-11     | 0                   | 1,13E-09    | 0                            |
|  Resource use, energy carriers [MJ] <sup>1</sup>                        | 7,40E+00      | 1,23E-01           | 1,58E-01        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,66E-02     | 0                   | 1,66E-01    | 0                            |
|  Water deprivation potential [m <sup>3</sup> world equiv.] <sup>1</sup> | 1,08E-01      | 8,67E-06           | 2,30E-03        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,17E-06     | 0                   | 1,32E-03    | 0                            |









<sup>1</sup> The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

## Resources Use


| Resources Use indicators   | PRODUCT STAGE | CONSTRUCTION STAGE |                 | USE STAGE |                |           |                |                  |                           |                          | END OF LIFE STAGE              |              |                     | D 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 |
|  Use of renewable primary energy (PERE) [MJ]  | 4,55E+00      | 2,98E-03           | 9,15E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 4,02E-04     | 0                   | 2,17E-02                     | 0                            |
|  Primary energy resources used as raw materials (PERM) [MJ]                             | 7,06E-01      | 0                  | -7,06E-01       | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0                            | 0                            |
|  Total use of renewable primary energy resources (PERT) [MJ]                            | 5,26E+00      | 2,98E-03           | -6,14E-01       | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 4,02E-04     | 0                   | 2,17E-02                     | 0                            |
|  Use of non-renewable primary energy (PENRE) [MJ]                                       | 6,55E+00      | 1,23E-01           | 1,41E-01        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,66E-02     | 0                   | 1,66E-01                     | 0                            |
|  Non-renewable primary energy resources used as raw materials (PENRM) [MJ] <sup>2</sup> | 8,58E-01      | 0                  | 1,72E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0                            | 0                            |
|  Total use of non-renewable primary energy resources (PENRT) [MJ]                      | 7,40E+00      | 1,23E-01           | 1,58E-01        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,66E-02     | 0                   | 1,66E-01                     | 0                            |
|  Input of secondary material (SM) [kg]  | 4,82E-01      | 0                  | 9,65E-03        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0                            | 0                            |
|  Use of renewable secondary fuels (RSF) [MJ]  | 2,22E-23      | 0                  | 4,45E-25        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0                            | 0                            |
|  Use of non-renewable secondary fuels (NRSF) [MJ]                                     | 2,61E-22      | 0                  | 5,23E-24        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0                            | 0                            |
|  Use of net fresh water (FW) [m3]   | 2,61E-03      | 5,41E-07           | 5,59E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 7,31E-08     | 0                   | 4,18E-05                     | 0                            |

<sup>2</sup> Energy stored in the product is not balanced out when the product is landfilled in the end-of-life.

## Waste Category & Output flows


| Waste Category & Output Flows   | PRODUCT STAGE | CONSTRUCTION STAGE |                 | USE STAGE |                |           |                |                  |                           |                          | END OF LIFE STAGE              |              |                     |             | D 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 |
|  Hazardous waste disposed (HWD) [kg]       | 1,37E-09      | 7,93E-12           | 7,97E-11        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,07E-12     | 0                   | 2,53E-09    | 0                            |
|  Non-hazardous waste disposed (NHWD) [kg]  | 3,36E-02      | 2,49E-06           | 1,78E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 3,37E-07     | 0                   | 8,34E-01    | 0                            |
|  Radioactive waste disposed (RWD) [kg]     | 5,78E-05      | 1,40E-07           | 1,20E-06        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,89E-08     | 0                   | 1,88E-06    | 0                            |
|  Components for re-use (CRU) [kg]          | 0             | 0                  | 0               | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                            |
|  Materials for Recycling (MFR) [kg]       | 4,22E-03      | 0                  | 3,90E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                            |
|  Material for Energy Recovery (MER) [kg] | 0             | 0                  | 0               | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                            |
|  Exported electrical energy (EEE) [MJ]   | 0             | 0                  | 0               | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                            |
|  Exported thermal energy (EET) [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 21930:2017)

|  | 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 |
| <b>Environmental indicators</b>  |               |                    |              |                 |        |                |           |                |                  |                           |                          |                                |              |                     |                           |                              |
|  GWP-GHG / GWP-IOBC [kg CO2 eq.] <sup>3</sup> | 4,66E-01      | 8,89E-03           | 1,14E-02     | 0               | 0      | 0              | 0         | 0              | 0                | 0                         | 0                        | 1,20E-03                       | 0            | 1,26E-02            | 0                         |                              |

<sup>3</sup> The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

## Information on biogenic carbon content

|   |   | PRODUCT STAGE       |
|---|---|---------------------|
| <b>Biogenic Carbon Content</b>  |   | <b>A1 / A2 / A3</b> |
|  | Biogenic carbon content in product [kg]   | 4,76E-04            |
|  | Biogenic carbon content in packaging [kg] | 1,61E-02            |

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

The biogenic carbon content in the product mainly comes from the binder and additives.  
The biogenic carbon content in the packaging mainly comes from the wooden pallet.

## Additional information

### Electricity information

| TYPE OF INFORMATION  | DESCRIPTION   |
|--|---|
| <b>Location</b>  | Representative of electricity purchased by Saint-Gobain Finland Oy                        |
| <b>Geographical representativeness description</b>         | Split of energy sources in Finland: - Hydro: 100 %  |
| <b>Reference year</b>                                      | 2022 - 2023   |
| <b>Type of dataset</b>                                     | Cradle to gate  |
| <b>Source</b>  | Gabi 2022 and ecoinvent 3.6 databases<br>Guarantee of Origin certificates (GOs) 2021-2023 |
| <b>CO<sub>2</sub> emission kg CO<sub>2</sub> eq. / kWh</b> | 0,0045  |

### Influence of particular thicknesses

This EPD® includes the range of thicknesses between 37 mm and 50 mm by applying a multiplication factor. All the results of this EPD refer to the reference thickness of 37 mm (value of R=1 m<sup>2</sup>\*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. Multiplication factors of thicknesses not listed below can be interpolated using below values. Also, a conversion to kg product is given.

| PRODUCT       |                | MULTIPLICATION FACTOR | CONVERSION TO KG                                 |
|---------------|----------------|-----------------------|--|
| GTIN          | THICKNESS (mm) | GWP-GHG               | GWP-GHG, kgCO <sub>2</sub> eq/kg product (A1-A3) |
| Declared unit | 37             | 1                     | 0,578  |
| 6416923091935 | 50             | 1,29                  | 0,592  |

## Environmental impacts according to EN 15804:2012 + A1

The following tables presents results of ISOVER SeaComfort Roll G220 according to EN 15804+A1.

| Environmental impacts   | PRODUCT STAGE | CONSTRUCTION STAGE |                 | USE STAGE |                |           |                |                  |                           |                          | END OF LIFE STAGE              |              |                     | REUSE, RECOVER Y, RECYCLI NG |                              |
|---|---------------|--------------------|-----------------|-----------|----------------|-----------|----------------|------------------|---------------------------|--------------------------|--------------------------------|--------------|---------------------|------------------------------|------------------------------|
|   | 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 Potential (GWP) [kg CO <sub>2</sub> eq.] <sup>4</sup>            | 4,76E-01      | 8,79E-03           | 1,12E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,19E-03     | 0                   | 1,24E-02                     | 0                            |
| Ozone depletion (ODP) [kg CFC 11eq.]  | 5,31E-07      | 1,75E-18           | 1,07E-08        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 2,37E-19     | 0                   | 6,24E-17                     | 0                            |
| Acidification potential (AP) [kg SO <sub>2</sub> eq.]                           | 2,91E-03      | 3,60E-05           | 6,15E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 4,86E-06     | 0                   | 7,28E-05                     | 0                            |
| Eutrophication potential (EP) [kg (PO <sub>4</sub> ) <sub>3</sub> -eq.]         | 9,59E-04      | 8,90E-06           | 2,00E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,20E-06     | 0                   | 8,20E-06                     | 0                            |
| Photochemical ozone creation (POCP) - [kg Ethylene eq.]                         | 2,00E-04      | 1,09E-06           | 4,40E-06        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,47E-07     | 0                   | 5,87E-06                     | 0                            |
| Abiotic depletion potential for non-fossil resources (ADP-elements) [kg Sb eq.] | 3,80E-05      | 1,11E-10           | 7,61E-07        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,50E-11     | 0                   | 4,38E-09                     | 0                            |
| Abiotic depletion potential for fossil resources (ADP-fossil fuels) [MJ]        | 6,93E+00      | 1,23E-01           | 1,48E-01        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 1,66E-02     | 0                   | 1,61E-01                     | 0                            |

<sup>4</sup> The indicator excludes biogenic carbon and is almost equal to the indicator GWP-GHG.

## Differences versus previous versions

This is the first version of the EPD.

## 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. General programme instructions for the International EPD® System, version 4.0 (2021-03-29).
5. Construction Products PCR 2019:14, version 1.2.5, The International EPD® System
6. EN 15804:2012+A2:2019/AC:2021 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
7. Thermal insulation products (EN 16783:2017) – Complementary Product category rules (c-PCR) to PCR 2019:14, version 2019:20.
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](http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp)
9. The underlying LCA study, LCA report for Saint-Gobain Finland Oy, October 2023, version 2.