epd-norway
Global Program Operator

# Environmental Product Declaration

In accordance with ISO14025:2006 and EN15804:2012+A2:2019

## CLIMPIPE Section Alu2

The Norwegian
EPD Foundation

**Owner of the declaration:**
Saint-Gobain Sweden AB, Isover

**Product name:**
CLIMPIPE Section Alu2

**Functional unit:**
1 m of product with a thermal resistance of 1 K.m$^2$.K/W and a thickness of 33 mm and inner diameter of 15 mm, with a reference service life of 60 years.

**Product category /PCR:**
Core PCR EN 15804 :2012+A2:2019
**NPCR 012:**2022 Part B for thermal insulation products

**Program holder and publisher:**
The Norwegian EPD foundation

**Declaration number:**
NEPD-

**Registration number:**
NEPD-

**Version 1**

**Issue date:**

18.06.2025

**Valid to:**

18.06.2030

# General information

## Product:
CLIMPIPE Section Alu2

## Program operator:
The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Tlf: +47 23 08 80 00
e-mail: post@epd-norge.no

## Declaration number:
NEPD-11381-11380

## This declaration is based on Product Category Rules:
Core PCR EN 15804 :2012+A2:2019
NPCR 012:2022 Part B for thermal insulation products

## Statement of liability:
The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

## Declared unit:
1 m of mineral wool insulation with alu-facing

## Functional unit:
1 m of product with a thermal resistance of 1 $K.m^2.K/W$, a thickness of 30 mm and inner diameter of 15 mm, with a reference service life of 60 years

## Verification:
Independent verification of the declaration and data, according to ISO14025:2010

internal ☐ external X

Martin Erlandsson, CarbonZero
Independent verifier approved by EPD Norway

## Owner of the declaration:
Saint-Gobain Sweden AB, ISOVER
Contact person: David Overton Holm
e-mail: UDKGEN-Nordic-PM-TI@saint-gobain.com

## Manufacturer:
Saint-Gobain Sweden AB, ISOVER

## Place of production:
Storgatan 29, 267 73 Billesholm, Sweden

## Management system:
ISO 9001 (Certificate no. SE008631)
ISO 14001 (Certificate no. SE008526)
ISO 50001 (Certificate no. SE0085516)

## Organisation no:
556241-2592

## Valid from:
18.06.2025

## Valid to:
18.06.2030

## Year of study:
2023

## Comparability:
EPD of construction products may not be able to compare if they do not comply with EN 15804 and are seen in a building context.

## The EPD has been worked out by:
Päivi Pesu (Saint-Gobain Nordic) and Saint-Gobain LCA central team

Approved

Manager of EPD Norway

# Product

## Product description:

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 linear meter of Climpipe Section Alu2 with a thermal resistance of 1 K.m$^2$.K/W, a thickness of 33 mm and inner diameter of 15 mm. To calculate the impact of the range of commercial thicknesses and inner diameters, see table under Additional technical information section.

This EPD applies for one specific product from one single plant of Saint-Gobain Sweden.

Climpipe Section Alu2 is non-combustible glass wool pipe section for insulation of hot and cold pipes. The product is easy and fast to install thanks to its low weight together with a tape that tacks directly.

GTINs and more information: www.isover.se/produkter/climpipe-section-alu2

UN CPC CODE: 37990 Non-metallic mineral products n.e.c. (including mineral wool, expanded mineral materials, worked mica, articles of mica, non-electrical articles of graphite or other carbon and articles of peat)

## Product specification:

Description of the main components and/or materials for 1 linear meter of Climpipe Section Alu2 with a thermal resistance of 1 m$^2$.K/W, and a thickness of 33 mm and inner diameter of 15 mm.

| Materials | Weight (%) |
|---|---|
| Mineral materials | 25 – 40 |
| Recycled glass (external cullet) | 50 – 70 |
| Binder | 5 – 10 |
| Facing & tape | 5 - 10 |
| **Sum** | **100** |
| **Packaging** | **Weight (kg)** |
| Cardboard | 0,03 |
| LDPE | 0,02 |
| Wooden pallet | 0,06 |
| Other packaging | <0,001 |

## Technical data:

For a thickness of 33 mm and inner diameter of 15 mm.

| Parameter | Value | Unit |
|---|---|---|
| Thermal resistance | 1 | m²·K/W |
| Thermal conductivity | 0,033 | W/(m·K) |
| Reaction to fire | $A2_L$-s1,d0 | |
| Density | 75 | kg/m3 |
| Weight of product | 0,41 | kg/m |
| Material used for the installation* | none | - |

*) Adhesive tape is included in product to cover longitudinal opening.

## Market:

The product is manufactured and sold in Sweden. It can also be distributed to, and sold in, other countries in the Nordics, the Baltic countries, UK and Ireland.

## Reference service life, product:

The reference service life of the product is similar to the service life of the building.

## Reference service life, building:

60 years.

## Additional technical information

This EPD® includes a range of thicknesses and inner diameters by applying a conversion factor. All the results of this EPD® refer to Climpipe Section Alu2 with a thickness of 33 mm and inner diameter of 15 mm, for a functional unit of 1 meter with a thermal resistance of 1 m² K/W.

To convert the results of indicators GWP-total, GWP-IOBC/GHG and GWP-fossil of modules A1-A3 and A-C to other thicknesses and inner diameters, the results expressed in this EPD must be multiplied by its corresponding conversion factor in the table below.

Conversion to mass (kg) to convert the results per 1kg of product is 2,43.

| Product | | Conversion factor | | | |
|---|---|---|---|---|---|
| Inner diameter mm | Thickness mm | GWP-IOBC / GWP-GHG & GWP-fossil | | GWP-total | |
| | | A1-A3 | A-C | A1-A3 | A-C |
| 15-35 | 20-25 | 1,0 | 1,1 | 1,0 | 1,1 |
| 15-35 | 30-40 | 1,8 | 1,8 | 1,7 | 1,8 |
| 15-35 | 50-60 | 2,8 | 3,0 | 2,4 | 3,0 |
| 15-35 | 80-120 | 4,5 | 4,8 | 3,5 | 4,8 |
| 42-70 | 20-25 | 1,6 | 1,6 | 1,3 | 1,6 |
| 42-70 | 30-40 | 2,5 | 2,7 | 2,1 | 2,7 |
| 42-70 | 50-60 | 3,9 | 4,1 | 3,2 | 4,1 |
| 42-70 | 80-120 | 9,4 | 9,4 | 8,9 | 9,5 |
| 76-114 | 20-25 | 2,5 | 2,8 | 1,7 | 2,8 |
| 76-114 | 30-40 | 3,5 | 3,7 | 2,9 | 3,7 |
| 76-114 | 50-60 | 5,3 | 5,7 | 4,0 | 5,8 |
| 76-114 | 80-120 | 11,6 | 11,6 | 10,5 | 11,7 |
| 133-273 | 20-25 | 5,1 | 5,4 | 2,4 | 5,4 |
| 133-273 | 30-40 | 4,5 | 4,6 | 3,4 | 4,6 |
| 133-273 | 50-60 | 7,9 | 8,1 | 6,2 | 8,2 |
| 133-273 | 80-120 | 16,8 | 16,7 | 14,4 | 16,9 |

# LCA: Calculation rules

| Parameter | Value / Description |
|---|---|
| **Type of EPD** | Cradle to grave and module D |
| **Functional unit** | Providing a thermal insulation on 1 meter of product with a thermal resistance of 1 K.m$^2$.K/W, a thickness of 33 mm and inner diameter of 15 mm, with a reference service life of 60 years |
| **System boundaries** | Cradle to grave and module D (A + B + C + D) |
| **Reference service life (RSL)** | The Reference Service Life (RSL) of the insulation product is 60 years, provided that the product is installed correct into the building. 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** | All data is available, no cut-off rules has been applied.<br>In the case that there is not enough information, the process energy and materials representing less than 1% of the whole energy and mass used can be excluded (if they do not cause significant impacts). The addition of all the inputs and outputs excluded cannot be bigger than the 5% of the whole mass and energy used, as well of the emissions to environment occurred.<br>Flows related to human activities such as employee transport are excluded.<br>The construction of plants, production of machines and transportation systems are excluded since the related flows are supposed to be negligible compared to the production of the building product when compared at these systems lifetime level. |
| **Allocations** | Allocation has been avoided when possible and when not possible a mass allocation has been applied.<br>The polluter pays and the modularity principles as well have been followed. |
| **Geographical coverage And time period** | Scope: Sweden, Nordic & Baltic countries, UK and Ireland,<br>Data is collected from 1 production site located in Sweden.<br>Data collected for the year 2023 |
| **Background data source** | The databases Sphera 2023.2 and ecoinvent v.3.9.1 |
| **Software** | Sphera LCA for experts (GaBi) 10 |

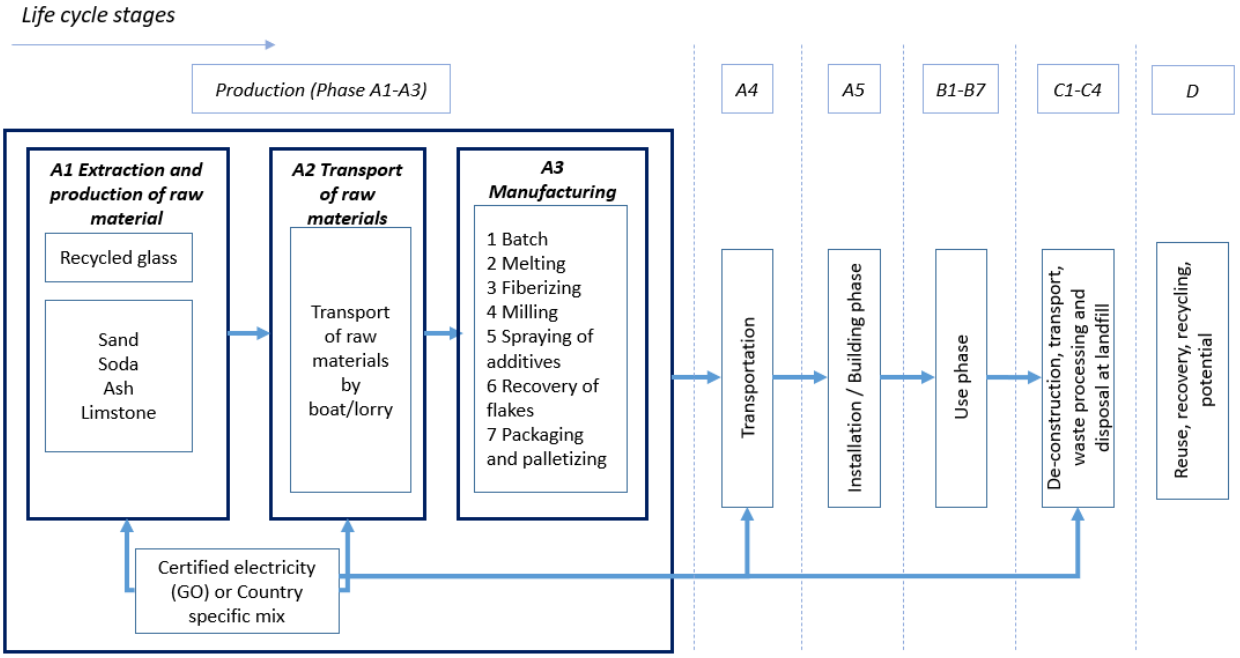
# LCA: Scenarios and additional technical information

The following stages and modules have been included for this product.

## System boundaries (X=included, MND=module not declared)

| Product stage | | | Assembly stage | | Use stage | | | | | | | End of life stage | | | | Benefits & loads beyond system boundary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Raw materials | Transport | Manufacturing | Transport | Assembly | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

## System boundary:



## Product stage (A1-A3)

**A1, Raw materials supply**
This module includes the extraction and transformation of raw materials.

**A2, Transport to the manufacturer**
This module includes the transportation of raw materials and packaging materials to the manufacturing site. The modelling includes road, ship and/or train transportations.

**A3, Manufacturing**
This module includes the manufacturing of products (fusion, fiberizing, etc.) and the manufacturing of packaging materials. The processing of any waste arising from this stage is also included.

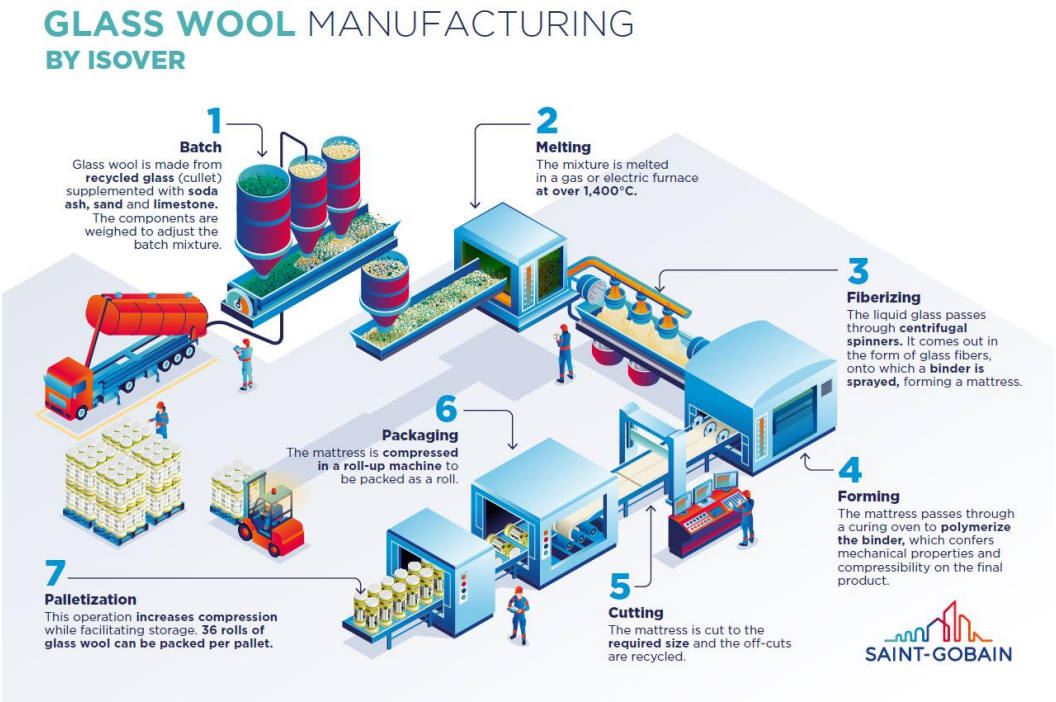
During the manufacturing process, electricity based on 100% renewable electricity bought with Guarantee of Origin (GO) has been used. The amount of electricity purchases with GO's correspond to 100% of the electricity consumed at the manufacturing site, leaving 0% to be covered by Swedish national grid mix.

During the manufacturing process, biogas bought with Guarantee of Origin (GO) has been used. The amount of biogas purchases with GO's correspond to 72% of the gas consumed at the manufacturing site, leaving the rest 28% as location-based gas mix.

## Guarantees of origin of energy used in the manufacturing phase

| Parameter | Consumption covered (%) | Value, GWP total | Description |
|---|---|---|---|
| Electricity mix (GO's) | 100% | 0,00458 kg $CO_2$ eq. / kWh | 100% Nuclear power – RER from Sphera |
| Gas mix (GO's) | 72% | 0,0573 kg $CO_2$ eq. / kWh | 100% Biogas – RER from Sphera |

## Manufacturing process flow diagram



**Manufacturing in detail:**

Glass wool is made from high-temperature molten glass that is blown away using centrifugal force to form fine cotton-like fibers. Then, a binder is sprayed on the material to form it, and the product is heated in an oven. Hereafter, the product is applied the facing, cut to size and packed.

## Construction process stage (A4-A5)

**A4, Transport from production place to 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 / Description |
|---|---|
| Fuel type and consumption of vehicle or vehicle type used for transport e.g., long distance truck, boat, etc. | Freight truck, maximum load weight of 27 t and consumption of 0,38 liters diesel per km.<br>Real 4 t load. |
| Distance | 325 km by truck,<br>140 km by rail |
| Capacity utilization (including empty returns) | 11% in weight (100% in volume)<br>30% empty returns |

**A5, Installation in the building**

This module includes the installation of the product manually and no additional accessories, nor energy are considered.

| Parameter | Value / Description |
|---|---|
| Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type) | 2% for product<br>100% for packaging |
| 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) | Product waste: 0,008 kg, 100% landfill<br>Cardboard: 0,03 kg, 50% recycling + 50% energy recovery<br>LDPE: 0,02 kg, 90% energy recovery + 10% recycling<br>Wooden pallet: 0,06 kg, 50% recycling + 50% energy recovery<br>Other packaging: <0,001 kg, 100% landfill |
| Distance to waste treatment facilities | 50 km to landfill by truck<br>50 km to recycling by truck<br>50 km to incineration with energy recovery by truck |
| Direct emissions to ambient air, soil, and water | None |

The transport of waste is modelled as in C2.

## Use stage (B1-B7)

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 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.

## End of Life stage (C1-C4)

This stage includes the following modules:
- **C1:** The de-construction and/or dismantling of the product takes part of the demolition of the entire building. In the case of this product, the environmental impact is assumed to be very small and can be neglected.
- **C2:** Transport to waste processing.
- **C3:** Waste processing for reuse, recovery and/or recycling.
- **C4:** Waste disposal, including physical pre-treatment and site management.

| Parameter | Value / Description |
|---|---|
| Energy for demolition | none |
| Collection process specified by type | The entire product 0,41 kg is 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 | 0,41 kg of product is landfilled |
| Assumption for scenario development (e.g., transportation) | The waste going to landfill is transported by truck with 24 t payload, consuming 0,38 liters diesel per km.<br>Transport distance to landfill: 50 km |

## Benefits and loads beyond the system boundaries (D)

Reuse, recycling and/or incineration with energy recovery is considered for the packaging. There is inclusion of secondary materials in the packaging. Therefore, benefits or loads reported on stage D are due to packaging.

# LCA: Results

As specified in EN 15804:2012+A2:2019/AC:2021 and the Product Category Rules, the environmental impacts are declared and reported using the baseline characterization factors from the ILCD. Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant. Characterization factors of EN15804 are based on EF 3.1.

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.

The results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity, noncancer and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets, in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological and geographical representativeness. Caution should be taken when using the results of these indicators for decision-making purposes.

Since this EPD includes module C, we strongly advise not to use the results of modules A1-A3 without considering the results of module C.

Results refer to a functional unit of 1 linear meter of insulation product with thermal resistance of 1 $K.m^2.K/W$ for a thickness of 33 mm and inner diameter 15 mm. To obtain results with different commercial thicknesses and diameters, see Additional technical information section (p.4).

## Core environmental impact indicators

| Environmental indicators | PRODUCT STAGE | CONSTRUCTION STAGE | | USE STAGE | | | | | | | END OF LIFE STAGE | | | | BENEFITS AND LOADS BEYOND THE LIFE CYCLE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 (total) [kg CO2 eq.] | 6,62E-01 | 3,38E-02 | 2,02E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,12E-04 | 0 | 1,47E-03 | -7,26E-02 |
| Climate Change (fossil) [kg CO2 eq.] | 7,54E-01 | 3,34E-02 | 6,53E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,10E-04 | 0 | 9,01E-04 | -7,37E-02 |
| Climate Change (biogenic) [kg CO2 eq.] | -9,25E-02 | 8,94E-05 | 1,37E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,62E-07 | 0 | 5,71E-04 | 1,01E-03 |
| Climate Change (land use change) [kg CO2 eq.] | 8,55E-04 | 3,09E-04 | 2,26E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,93E-06 | 0 | 2,71E-06 | 4,44E-05 |
| Ozone depletion [kg CFC-11 eq.] | 1,24E-07 | 9,00E-12 | 2,23E-09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,72E-17 | 0 | 8,29E-13 | -1,47E-09 |
| Acidification terrestrial and freshwater [Mole of H+ eq.] | 5,05E-03 | 4,90E-05 | 1,21E-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,66E-07 | 0 | 6,29E-06 | -3,08E-04 |
| Eutrophication freshwater [kg P eq.] | 9,93E-05 | 5,79E-07 | 2,04E-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,63E-10 | 0 | 7,01E-09 | -2,91E-05 |
| Eutrophication marine [kg N eq.] | 1,08E-03 | 1,79E-05 | 2,97E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,31E-08 | 0 | 2,11E-06 | -4,22E-05 |
| Eutrophication terrestrial [Mole of N eq.] | 1,52E-02 | 2,07E-04 | 3,98E-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,09E-06 | 0 | 1,79E-05 | -6,15E-04 |
| Photochemical ozone formation - human health [kg NMVOC eq.] | 2,69E-03 | 4,35E-05 | 7,85E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,33E-07 | 0 | 4,93E-06 | -2,12E-04 |
| Resource use, mineral and metals [kg Sb eq.][1] | 1,70E-05 | 3,15E-09 | 3,12E-07 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,38E-11 | 0 | 8,57E-11 | -2,91E-08 |
| Resource use, energy carriers [MJ][1] | 3,02E+01 | 4,65E-01 | 5,94E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,84E-03 | 0 | 1,19E-02 | -9,86E-01 |
| Water deprivation potential [m³ world equiv.][1] | 3,45E-01 | 7,60E-04 | 1,88E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,52E-06 | 0 | 1,06E-04 | -7,86E-03 |

Reading example: 9,0 E-03 = 9,0*10-3 = 0,009

[1] 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 experienced with the indicator.

## Resource use

| Resources Use indicators | PRODUCT STAGE | CONSTRUCTION STAGE | | USE STAGE | | | | | | | END OF LIFE STAGE | | | | BENEFITS AND LOADS BEYOND THE LIFE CYCLE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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] [2] | 1,04E+01 | 3,42E-02 | 1,92E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,07E-04 | 0 | 1,89E-03 | -4,20E-01 |
| Primary energy resources used as raw materials (PERM) [MJ] [2] | 1,38E+00 | 0 | -9,58E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total use of renewable primary energy resources (PERT) [MJ] [2] | 1,18E+01 | 3,42E-02 | -7,66E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,07E-04 | 0 | 1,89E-03 | -4,20E-01 |
| Use of non-renewable primary energy (PENRE) [MJ] [2] | 2,85E+01 | 4,66E-01 | 5,65E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,86E-03 | 0 | 1,19E-02 | -9,86E-01 |
| Non-renewable primary energy resources used as raw materials (PENRM) [MJ] [2] | 1,90E+00 | 0 | -3,25E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total use of non-renewable primary energy resources (PENRT) [MJ] [2] | 3,04E+01 | 4,66E-01 | 2,41E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,86E-03 | 0 | 1,19E-02 | -9,86E-01 |
| Input of secondary material (SM) [kg] | 2,49E-01 | 0 | 4,42E-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Use of renewable secondary fuels (RSF) [MJ] | 1,86E-29 | 0 | 3,31E-31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Use of non-renewable secondary fuels (NRSF) [MJ] | 2,18E-28 | 0 | 3,88E-30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Use of net fresh water (FW) [m3] | 1,03E-02 | 4,40E-05 | 4,83E-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,27E-07 | 0 | 3,17E-06 | -1,83E-04 |

[2] For this study, both the product and its packaging energy content is considered in the indicators "use of renewable primary energy resources used as raw materials" (PERM) and "use of non-renewable primary energy resources used as raw materials" (PENRM). PERM and PENRM are reported as negative values when materials are reused, recycled, or recovered for energy, but not when they are landfilled.

## End of life – Waste & output flow

| Waste Category & Output Flows | PRODUCT STAGE | CONSTRUCTION STAGE | | USE STAGE | | | | | | | END OF LIFE STAGE | | | | BENEFITS AND LOADS BEYOND THE LIFE CYCLE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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] | 6,13E-05 | 1,46E-08 | 1,23E-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,84E-15 | 0 | 1,02E-09 | -3,02E-06 |
| Non-hazardous waste disposed (NHWD) [kg] | 2,16E-01 | 2,27E-04 | 1,52E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,35E-07 | 0 | 5,85E-02 | -4,04E-02 |
| Radioactive waste disposed (RWD) [kg] | 6,53E-03 | 6,69E-07 | 1,17E-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,34E-09 | 0 | 1,32E-07 | -1,66E-06 |
| Components for re-use (CRU) [kg] | 0 | 0 | 2,91E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Materials for Recycling (MFR) [kg] | 2,65E-03 | 0 | 4,68E-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 | 2,03E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exported thermal energy (EET) [MJ] | 0 | 0 | 3,63E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Additional environmental impact indicators required for construction products

| | PRODUCT STAGE | CONSTRUCTION STAGE | | USE STAGE | | | | | | | END OF LIFE STAGE | | | | BENEFITS AND LOADS BEYOND THE LIFE CYCLE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Environmental indicators** | 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-IOBC / GWP-GHG [kg CO2 eq.][2] | 8,12E-01 | 3,38E-02 | 6,68E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,13E-04 | 0 | 9,36E-04 | -7,25E-02 |

## Information describing the biogenic carbon content at the factory gate

| | PRODUCT STAGE |
|---|---|
| **Biogenic Carbon Content** | **A1 / A2 / A3** |
| Biogenic carbon content in product [kg] | 2,44E-03 |
| Biogenic carbon content in packaging [kg] | 3,69E-02 |

*Note: 1kg biogenic carbon is equivalent to 44/12 kg $CO_2$.*

The product contains biogenic carbon due to paper in the covering tape. Packaging contains biogenic carbon due to wooden pallet and cardboard.

[2] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake, emissions and biogenic carbon stored in the product.

# Additional requirements

## Energy information in the manufacturing phase

Market-based approach is used in the manufacturing phase (A3) for electricity and gas that are covered by GOs. The approach for the remaining quantity of electricity and gas is location-based mixes.

The table below presents the location-based mix for electricity:

| Type of information | Description |
|---|---|
| **Share of residual mix** | 0% |
| **Residual mix** | National production mix, Sweden |
| **Type of dataset** | Cradle to gate from Sphera |
| **Source** | Dataset Sphera SE: Electricity grid mix |
| **CO2 emission kg CO2 eq. / kWh** | 0,0616 kg CO2 eq. / kWh – Climate Change – total indicator |

*Note: Amount of electricity in the core process is not reported as it is business sensitive and therefore confidential.*

The table below presents the location-based mix for gas:

| Type of information | Description |
|---|---|
| **Share of residual mix** | 28% |
| **Location based conservative mix** | Natural gas |
| **Type of dataset** | Cradle to gate from Sphera |
| **Source** | Dataset Sphera: Thermal energy from natural gas, RER |
| **CO2 emission kg CO2 eq. / kWh** | 0,2415 kg CO2 eq. / kWh – Climate Change – total indicator |

*Note: Amount of energy in the core process is not reported as it is business sensitive and therefore confidential.*

## Hazardous substances

At the date of issue of this declaration, there is no “Substance of Very High Concern” (SVHC) in concentration above 0,1% by weight, and neither do their packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals).

There are no substances of the Norwegian List of Priority Substances in concentration above 0,1% by weight, and neither do their packaging.

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

## Carbon footprint

The GWP-IOBC result can be found under “Additional environmental impact indicators required for construction products”

# Additional information

## Transport to other countries

The main results of stage A4 declared refer to Sweden. As the product is exported to other countries, additional sets of results for each country have been provided.

| Country | Transport and distance |
|---|---|
| Norway | Truck (575 km) |
| Denmark | Truck (310 km) |
| Finland | Truck (955 km), Ship (125 km) |
| Iceland | Truck (75 km), ship (2289 km) |
| Estonia | Truck (819 km), ship (405 km) |
| Latvia | Truck (478 km), ship (405 km) |
| Lithuania | Truck (508 km), ship (405 km) |
| UK | Truck (120 km), ship (1224 km) |
| Ireland | Truck (612 km), ship (1334 km) |

| A4 Transport | Norway | Denmark | Finland | Iceland | Estonia | Latvia | Lithuania | UK | Ireland |
|---|---|---|---|---|---|---|---|---|---|
| **Environmental indicators** | | | | | | | | | |
| **Climate Change (total) [kg $CO_2$ eq.]** | 5,86E-02 | 3,16E-02 | 9,79E-02 | 1,81E-02 | 8,53E-02 | 5,06E-02 | 5,36E-02 | 1,78E-02 | 6,85E-02 |
| **Climate Change (fossil) [kg $CO_2$ eq.]** | 5,79E-02 | 3,12E-02 | 9,68E-02 | 1,80E-02 | 8,44E-02 | 5,00E-02 | 5,30E-02 | 1,77E-02 | 6,77E-02 |
| **Climate Change (biogenic) [kg $CO_2$ eq.]** | 1,53E-04 | 8,23E-05 | 2,54E-04 | 2,82E-05 | 2,19E-04 | 1,28E-04 | 1,36E-04 | 3,63E-05 | 1,67E-04 |
| **Climate Change (land use change) [kg $CO_2$ eq.]** | 5,42E-04 | 2,92E-04 | 9,00E-04 | 7,09E-05 | 7,72E-04 | 4,51E-04 | 4,79E-04 | 1,13E-04 | 5,77E-04 |
| **Ozone depletion [kg CFC-11 eq.]** | 5,12E-15 | 2,76E-15 | 8,55E-15 | 1,38E-15 | 7,42E-15 | 4,39E-15 | 4,65E-15 | 1,45E-15 | 5,87E-15 |
| **Acidification terrestrial and freshwater [Mole of H+ eq.]** | 7,90E-05 | 4,26E-05 | 1,51E-04 | 3,76E-04 | 1,77E-04 | 1,30E-04 | 1,34E-04 | 2,12E-04 | 2,97E-04 |
| **Eutrophication freshwater [kg P eq.]** | 2,13E-07 | 1,15E-07 | 3,55E-07 | 3,02E-08 | 3,04E-07 | 1,78E-07 | 1,89E-07 | 4,58E-08 | 2,29E-07 |
| **Eutrophication marine [kg N eq.]** | 2,93E-05 | 1,58E-05 | 5,33E-05 | 8,98E-05 | 5,69E-05 | 3,96E-05 | 4,11E-05 | 5,21E-05 | 8,13E-05 |
| **Eutrophication terrestrial [Mole of N eq.]** | 3,40E-04 | 1,84E-04 | 6,17E-04 | 9,86E-04 | 6,52E-04 | 4,50E-04 | 4,67E-04 | 5,75E-04 | 9,11E-04 |
| **Photochemical ozone formation - human health [kg NMVOC eq.]** | 7,00E-05 | 3,78E-05 | 1,30E-04 | 2,54E-04 | 1,43E-04 | 1,02E-04 | 1,05E-04 | 1,46E-04 | 2,17E-04 |
| **Resource use, mineral and metals [kg Sb eq.]** | 3,80E-09 | 2,05E-09 | 6,32E-09 | 5,91E-10 | 5,43E-09 | 3,18E-09 | 3,38E-09 | 8,44E-10 | 4,10E-09 |
| **Resource use, energy carriers [MJ]** | 7,96E-01 | 4,29E-01 | 1,33E+00 | 2,31E-01 | 1,16E+00 | 6,84E-01 | 7,26E-01 | 2,34E-01 | 9,21E-01 |
| **Water deprivation potential [$m^3$ world equiv.]** | 6,75E-04 | 3,64E-04 | 1,12E-03 | 1,05E-04 | 9,64E-04 | 5,64E-04 | 5,99E-04 | 1,50E-04 | 7,28E-04 |
| **Resource Use Indicators** | | | | | | | | | |
| **Use of renewable primary energy (PERE) [MJ]** | 5,63E-02 | 3,04E-02 | 9,36E-02 | 7,90E-03 | 8,03E-02 | 4,69E-02 | 4,99E-02 | 1,21E-02 | 6,03E-02 |
| **Use of renewable primary energy resources used as raw materials (PERM) [MJ]** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total use of renewable primary energy resources (PERT) [MJ]** | 5,63E-02 | 3,04E-02 | 9,36E-02 | 7,90E-03 | 8,03E-02 | 4,69E-02 | 4,99E-02 | 1,21E-02 | 6,03E-02 |
| **Use of non-renewable primary energy (PENRE) [MJ]** | 7,98E-01 | 4,30E-01 | 1,33E+00 | 2,32E-01 | 1,16E+00 | 6,86E-01 | 7,28E-01 | 2,35E-01 | 9,24E-01 |
| **Non-renewable primary energy resources used as raw materials (PENRM) [MJ]** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total use of non-renewable primary energy resources (PENRT) [MJ]** | 7,98E-01 | 4,30E-01 | 1,33E+00 | 2,32E-01 | 1,16E+00 | 6,86E-01 | 7,28E-01 | 2,35E-01 | 9,24E-01 |
| **Input of secondary material (SM) [kg]** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Use of renewable secondary fuels (RSF) [MJ]** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Use of non-renewable secondary fuels (NRSF) [MJ]** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Use of net fresh water (FW) [$m^3$]** | 6,21E-05 | 3,35E-05 | 1,03E-04 | 8,83E-06 | 8,85E-05 | 5,17E-05 | 5,50E-05 | 1,33E-05 | 6,65E-05 |
| **Waste category & Output flows** | | | | | | | | | |
| **Hazardous waste disposed (HWD) [kg]** | 2,95E-12 | 1,59E-12 | 4,93E-12 | 7,87E-13 | 4,28E-12 | 2,53E-12 | 2,68E-12 | 8,31E-13 | 3,38E-12 |
| **Non-hazardous waste disposed (NHWD) [kg]** | 1,15E-04 | 6,20E-05 | 1,92E-04 | 2,67E-05 | 1,66E-04 | 9,77E-05 | 1,04E-04 | 3,02E-05 | 1,29E-04 |
| **Radioactive waste disposed (RWD) [kg]** | 1,03E-06 | 5,56E-07 | 1,72E-06 | 2,85E-07 | 1,50E-06 | 8,84E-07 | 9,38E-07 | 2,96E-07 | 1,19E-06 |
| **Components for re-use (CRU) [kg]** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Materials for Recycling (MFR) [kg]** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Material for Energy Recovery (MER) [kg]** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Exported electrical energy (EEE) [MJ]** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Exported thermal energy (EET) [MJ]** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Additional Indicator** | | | | | | | | | |
| **GWP-GHG / GWP-IOBC [kg $CO_2$ eq.]** | 5,86E-02 | 3,16E-02 | 9,80E-02 | 1,81E-02 | 8,54E-02 | 5,06E-02 | 5,37E-02 | 1,78E-02 | 6,85E-02 |

# Bibliography


| | |
|---|---|
| ISO 14025:2010 | Environmental labels and declarations - Type III environmental declarations - Principles and procedures |
| ISO 14044:2006 | Environmental management - Life cycle assessment - Requirements and guidelines |
| EN 15804:2012+A2:2019 | Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products |
| ISO 21930:2017 | Sustainability in building construction - Environmental declaration of building products |
| GPI EPD Norge | General Program Instructions for the Norwegian EPD Foundation version 3:2019 update 25.05.2023 |
| NPCR Part A | NPCR for Construction products and services (version 2.0) |
| NPCR 010:2022 Part B | NPCR for thermal insulation products |
| | European Chemical Agency, Candidate List of substances of very high concern for Authorization. https://echa.europa.eu/candidate-list-table |
| | Norwegian List of Priority Substances, Den norske prioritetslista. https://www.miljodirektoratet.no/chemicallist/61 |
| | Project report for the verification of the Environmental Product Declaration of insulation products, Saint-Gobain Sweden AB Isover (Pipe), version 1 (June 2025). |



| | | | |
|---|---|---|---|
| epd-norway Global Program Operator | **Program Operator** | tlf | +47 23 08 80 00 |
| | The Norwegian EPD Foundation | | |
| | Post Box 5250 Majorstuen, 0303 Oslo | e-post: | post@epd-norge.no |
| | Norway | web | www.epd-norge.no |
| epd-norway Global Program Operator | **Publisher** | tlf | +47 23 08 80 00 |
| | The Norwegian EPD Foundation | | |
| | Post Box 5250 Majorstuen, 0303 Oslo | e-post: | post@epd-norge.no |
| | Norway | web | www.epd-norge.no |
| ISOVER SAINT-GOBAIN | **Owner of the declaration** | | |
| | Saint-Gobain Sweden AB, ISOVER | e-mail | Ola.Indborg@Saint-Gobain.com |
| | | web | https://www.isover.se/ |
| SAINT-GOBAIN | **Author of the life cycle assessment** | | |
| | Päivi Pesu | e-mail | EPDNordic@saint-gobain.com |
| | Saint-Gobain Nordic & Baltic | | |
| | | web | https://www.saint-gobain.com |
| ECO PLATFORM EPD VERIFIED | ECO Platform | web | www.eco-platform.org |
| | ECO Portal | web | ECO Portal |