# ENVIRONMENTAL PRODUCT DECLARATION (EPD)

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

**URSA GLASSWOOL**
EPD of multiple products, based on a representative product *(representative product **URSA GOLD 35**)*
150 mm
R= 4.25 $m^2$·K/W

List of all covered products on Annex I


Owner: URSA INSULATION S.A

Programme: The International EPD® System,
www.environdec.com
Programme operator: EPD International AB
EPD registration number: EPD-IES-0002844:001
Publication date: 2025-02-24
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ECO PLATFORM EPD VERIFIED

EPD®
THE INTERNATIONAL EPD® SYSTEM

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

# General information

**EPD Owner:** URSA Insulation. Paseo de Recoletos 3, 28004 Madrid (Spain)

**Programme used:** The International EPD® System. www.environdec.com info@environdec.com

**EPD prepared by:** Silvia Herranz (URSA Insulation)

**Contact:** silvia.herranz@etexgroup.com

**Date of issue:** 2025-02-24

**Valid:** 2030-02-23

| | |
|---|---|
| **Programme:** | The International EPD® System |
| **Address:** | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm, Sweden |
| **Website:** | www.environdec.com |
| **E-mail:** | info@environdec.com |
| CEN standard EN 15804+A2 serves as the Core Product Category Rules (PCR) | |
| Product Category Rules (PCR): *PCR 2019:14. Construction products (EN 15804+A2) Version 1.3.4. PCR 2019:14-c-PCR-005 c-PCR-005 Thermal Insulation products (EN 16783) (2024-05-03)* | |
| PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members.<br>Review chair: Claudia A. Peña. The review panel may be contacted via the Secretariat info@environdec.com | |
| Independent third-party verification of the declaration and data, according to ISO 14025:2006:<br>☐ EPD process certification* ☒ EPD verification<br>*For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI. | |
| Third-party verifier: Itxaso Trabudua, IK Ingeniería S.L.<br>Approved by: The International EPD® System | |
| Procedure for follow-up of data during EPD validity involves third party verifier:<br>☒ 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 programs, or not compliant with EN 15804, 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 characterization factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

# Company information

**Owner of the EPD**: URSA Insulation S.A.

**Contact:** Silvia Herranz (Sustainability & Technical Manager) (silvia.herranz@etexgroup.com)

**Description of the organization:** URSA is a company dedicated to the production and commercialization of thermal and acoustic insulation materials aimed at sustainability and energy efficiency in buildings. It is currently one of the largest manufacturers in Europe of mineral wool and extruded polystyrene (XPS), two totally complementary insulation materials that contribute to the thermal and acoustic insulation of buildings. There are 11 factories throughout Europe and the headquarters are in Spain.

URSA manufactures products for thermal and acoustic insulation that is used in buildings, building equipment and industrial installations following European standards:

- EN 13162:2012+A1:2015 Thermal insulation products for buildings - Factory made mineral wool (MW) products – Specification.
- EN 14303:2015 Thermal insulation products for building equipment and industrial installations - Factory made mineral wool (MW) products – Specification.
- EN 14064-1:2018 Thermal insulation products for buildings - In-situ formed loose-fill mineral wool (MW) products - Part 1: Specification for the loose-fill products before installation.
- EN 14064-2:2010 Thermal insulation products for buildings - In-situ formed loose-fill mineral wool (MW) products - Part 2: Specification for the installed products.

**Product-related or management system-related certifications:** Dabrowa plant is covered by EPD process certification system, are certified ISO 9001, ISO 14001, ISO 45001 (Certificate Registration No. AC090 100/0254/997/2012, AC090 104/0254/997/2012, AC090 126/0254/997/2012 respectively).

**Name and location of production site(s):** Dabrowa, Armii Krajowej 12, 42-520 Dąbrowa Górnicza, Poland.

# Product information

**Product name:** *URSA GLASSWOOL GOLD 35.* URSA GLASSWOOL mineral wool panel in accordance with the EN 13162 standard, non-hydrophilic, without facing. Supplied in roll and panel format.

**Product identification:** this EPD describes the environmental impacts for glass wool family products manufactured in Dabrowa's plant. The reference product is URSA GOLD 35, and the thickness of 150 mm has been selected, taking into account its representativeness in market sales.

| Thickness (mm) | R -Value ($m^2 \cdot K/W$) | Weight, $kg/m^2$ |
|---|---|---|
| 40 | 1.10 | 0.760 |
| 50 | 1.40 | 0.950 |
| 60 | 1.70 | 1.140 |
| 80 | 2.25 | 1.520 |
| 100 | 2.85 | 1.900 |
| 120 | 3.40 | 2.280 |
| 140 | 4.00 | 2.660 |
| **150 (Declared product)** | **4.25** | **2.850** |
| 160 | 4.55 | 3.040 |
| 180 | 5.10 | 3.420 |
| 200 | 5.70 | 3.800 |
| 220 | 6.25 | 4.180 |
| 240 | 6.85 | 4.560 |
| 250 | 7.10 | 4.750 |

**Product description:** URSA manufactures glass wool using natural and plentiful raw materials (sand) or recycled materials (Cullet) in a fusion and fiber formation process. The products obtained are presented in the form of a "mineral wool mattress" composed of a flexible airy structure or loose flakes.

Thanks to their intertwined structure, mineral wools (glass wool or stone wool) are porous materials which trap air, thus providing an insulation solution. The porous and elastic structure of the mineral wool also absorbs aerial noise, impact sounds and enables acoustic correction inside buildings and premises. Finally, as they are based on naturally incombustible minerals, mineral wools are incombustible and do not propagate fire.

Insulation with mineral wool (glass wool) is used in buildings and in industrial installations. It ensures a high level of comfort, reduces energy costs, reduces carbon dioxide emissions ($CO_2$), prevents heat

loss through sloping roofs, walls, ceilings, pipes, and boilers, reduces sound pollution and protects houses and industrial installations from risk of fire.

The following table gathers all the main technical information for the representative product. The service life of this glass wool product was established at 50 years.

| Technical data and physical characteristics | | | |
|---|---|---|---|
| **Parameters** | **Unit** | **Test** | **Value** |
| **Thickness** | mm | | 40-250 (150 for the reference product) |
| **R-value** | m²·K/W | | 1.10-7.10 |
| **Thermal Conductivity** | W/(m.K) | EN 12667<br>EN 12939 | 0.035 |
| **Fire reaction** | Euroclase | EN 13501-1 | A1 |
| **Air Flow resistivity** | | EN 29053 | AFr5 |
| **Thickness tolerance** | | EN 823 | T2 |
| **Water vapour transmission (μ)** | | EN 12086 | MU1 |
| **Reference standard to declare the efficacy of the product** | EN 13162 | | |
| **Designation code CE** | DP34 MW-EN 13162-T2-MU1-AFr5 | | |
| **Application** | Thermal insulation in Building | | |

**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 pear)

**Geographical scope:** The product is manufactured in Poland. The product is marketed mainly in Europe.

# LCA Information

**Functional unit:** "Perform a thermal insulation function on 1 $m^2$ of wall by ensuring the thermal resistance of R = 4.25 K.$m^2$. W-1", include thickness 150 mm."

The thermal resistances of all the products covered by the EPD are between 1.30 and 5.70 ($m^2$·K/W) and weigh between 1 to 4,4 kg/$m^2$.

The variability of the products, as the EPD covers a complete Glass Wool family from Dabrowa's plant, and it is stated on the data quality requirements with a range of -52%+49% for the GWP-GHG indicator. The rest of the indicator's variability is detailed below for the worst- and best-case scenarios. The variability is wide due to the fact that all the glass wool family products from the plant are being considered.

| | A-C | |
|---|---|---|
| Indicator | WORST CASE | BEST CASE |
| GWP-fossil | 58% | -56% |
| GWP-biogenic | 120% | -74% |
| GWP-luluc | 85% | -70% |
| GWP-total | 29% | -64% |
| ODP | 78% | -73% |
| AP | 51% | -48% |
| EP-freshwater | 78% | -74% |
| EP- marine | 65% | -61% |
| EP-terrestrial | 40% | -38% |
| POCP | 14% | -13% |
| ADP-minerals&metals | 82% | -82% |
| ADP-fossil | 80% | -78% |
| WDP | 80% | -76% |

**Reference service life:** 50 years.

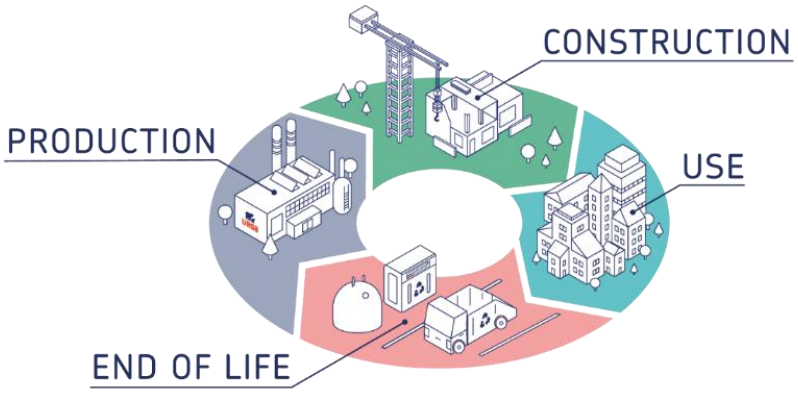
The choice of a 50-year-old RSL is based on the provisions included in the document prepared by CEN TC 88 "Thermal insulation products — Product category rules (PCR) for factory made and in-situ formed products for preparing environmental product declarations — Complementary element » System boundaries, scenarios, and modelling assumptions.

**Time representativeness:** Plant production data for the complete year 2023.

**Database(s) and LCA software used**: ECOINVENT 3.10, 15804+A2_IA v4.1, OPENLCA 2.4.0 (2023). EF 3.1

**Description of system boundaries:** this LCA report considers the scope '**c) Cradle to grave and module D (A + B + C + D)'.** defined in the PCR 2019:14-c-PCR-005 Thermal Insulation products (EN

16783) (2024-05-03). The analysis covers the full life cycle of the glass wool products, from the extraction of raw materials to the final disposal.




## Product stage A1-A3

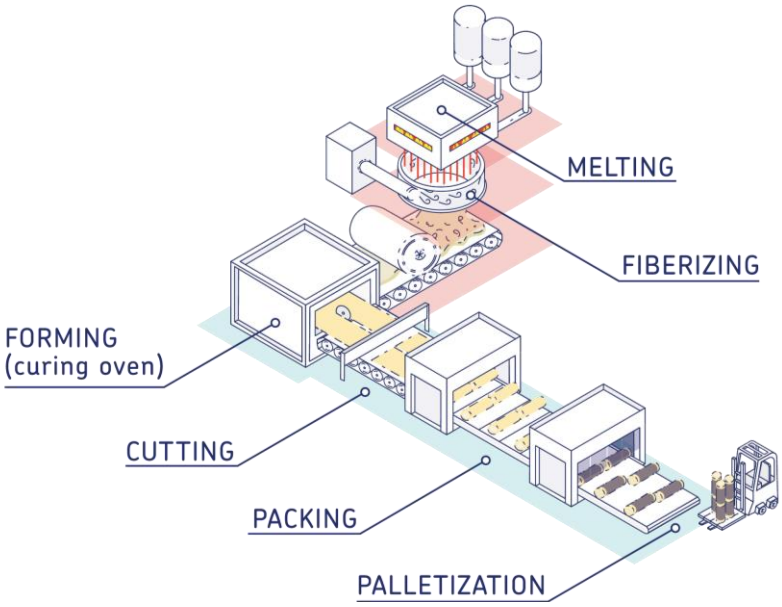
The production phase of mineral wool products is divided into three modules: raw materials supply (A1), raw materials transport (A2) and manufacture (A3).

**A1 Raw materials supply:** this module considers the supply and processing of all raw materials and the energies they produce prior to the manufacturing process. In particular, it covers the supply of raw materials for manufacturing binding and glass fibers. In addition to these raw materials, recycled materials (cullet) are used in the process.

**A2 Raw materials supply transport:** this stage takes into account the transportation from the suppliers to the manufacturing plant (Dabrowa plant (Poland)). In the case of several suppliers an average value has been adopted, that is representative.

**A3 Manufacturing:** Glass wool manufacture includes stages of fusion and fiber formation (see diagram of manufacturing process). Furthermore, production of packaging is considered during this phase.
Regarding the electricity modelling, only green electricity has been considered with the relevant documentation on Guarantees of Origin. The main characteristics of Dabrowa's electricity mix are:
- The amount of electricity (in kWh) is covered.
- The time periods for issue and validity of the contract: 2023-01-01 do 2023-12-31. Contract until 2029.
- The energy comes 50% from solar and 50% from wind energy.

Besides, in relation to the contribution to the environmental impacts of the product, the production of 1 kWh of electricity consumed by the average production in Dabrowa in 2023 generated 0.06068 kg of $CO_2$ eq. emissions.




## A4-A5 Construction phase

The construction phase is divided into two modules: transport to the construction site (A4) and installation in the building (A5).

### A4 Transport

This module includes transport from factory to site. Weighted average value of Europe, being the majority market is Poland. The transport is calculated based on a scenario that includes the following parameters:

| Parameter | Value |
|---|---|
| Type of fuel and consumption of the vehicle or type of vehicle used for the transport for example, long distance lorry, boat, etc. | The vehicle runs on diesel, its emission standard is classified as EURO5 and it falls under the truck size class of 7.5 to 16 metric tons |
| Average distance to site | Lorry: 460 km |
| Use of capacity (including returning empty) | 100 % volume capacity |
| Density of transported product | 412.50-58.50 $m^2$ per pallet and 22 pallets per lorry Density of product )=19 $kg/m^3$ |
| Coefficient of use of volume capacity | >1 (products compressed in the packaging) |

**A5 Installation:** this module includes the waste products created during manual installation of the mineral wool in the building, supplementary production required to compensate losses and treatment of site waste. The scenarios used for the quantity of waste generated during the installation and the treatment of the site waste are as follows:

| Parameter | Value |
|---|---|
| Ancillary inputs for installation (specified by material) | No ancillary inputs |
| Use of water | No water used |
| Use of other resources | No other resources |
| Quantitative description of the type of energy (regional mix) and consumption during the installation process | No energy required |
| Waste produced on the construction site prior to waste treatment generated by installation of the product (specified by type) | 2 % of glass wool |
| Materials (specified by type) produced by waste treatment on the construction site, for example collection with a view to recycling, recovery of energy, disposal (specified by channel) | All glass wool waste, its packaging and waste deriving from excess production for installation are considered as disposed of in landfill 69-243 gr/UF |
| Transport to landfill | 50 km |
| Direct emissions to atmosphere, soil and water | No emissions to be considered |

## B1-B7 Phase of use

The use phase is considered, but its impact is zero due to the type of functionality of the glass wool products. No technical operation is required during the useful phase until the end of service life. Thus, mineral wool does not have any impact during this phase and also permits potential energy savings during its lifetimes.

## C1-C4 End of life phase

This phase includes the different modules of the end of service life as follows: C1, deconstruction, demolition; C2, transport to waste treatment; C3, waste treatment with a view to their reuse, recovery and/or recycling; C4, disposal.

**Deconstruction, demolition:** Deconstruction and /or dismantling of the insulation products is part of the demolition work of an entire building. In our case the environmental impact is. Not significant and it's below the cut-off rules

**Transport to waste treatment site:** The use of the model for transport is considered (see A4, transport to the construction site) at a distance of 50 km.

**Waste treatment with a view to reuse, recovery, and/or recycling:** The product is considered for landfill without reuse, recovery and/or recycling.

**Disposal:** Glass wool should be installed in a storage facility for non-inert and non-hazardous waste

| Parameter | Value |
|---|---|
| Collection procedure specified by type | 0.760-4.750 kg of glass wool (collected with mixed construction waste) |
| Recovery system specified by type | No reuse, no recycling, no energy recovery |
| Disposal specified by type | 0.760-4.750 kg of glass wool kept in storage facility for non-inert and non-hazardous waste |
| Hypotheses for creating scenarios (for example transport) | 100% Landfill |

## D Benefit and charge (refer to standard)

This module considers the hypothetical stage where potential glass and pallet leftovers and its possibilities to be recycled.

**Allocation procedures:** The allocation procedure used for the LCI is physical, based on the mass (kg of production).

Regarding the pre-consumer material, part of the external cullet, an economic allocation shall be done as it is stated on PCR 2019:14 v1.3.4 section 4.5.5 Guidance on the allocation of scrap. The external cullet for Poland has two suppliers and glass comes from two different sectors (car windows and medical glass).

Applying the allocation rules with estimated prices from existing companies in the market the economic allocation is less than 1%. Due to this low value and following standard EN 15804+A2, no impact will be applied to the pre-consumer cullet and the economic allocation will be negligible.

*Table – Economic allocation for window glass*

| Glass: windows | Source | Year | Economic allocation |
|---|---|---|---|
| Primary glass | External source | 2025 | 99,51% |
| Recycled glass | Internal source | 2023 | **0,49%** |

*Table – Economic allocation for medical glass*

| Glass: medical | Source | Source | Economic allocation |
|---|---|---|---|
| Primary glass | External source | 2025 | 99,61% |
| Recycled glass | Internal source | 2023 | **0,39%** |

### Hypotheses and considerations:

The LCA study has been developed using the Ecoinvent v3.10 database and the software OpenLCA v2.4.0. The main hypothesis of the study are listed below:

- The production data used on the LCI analysis corresponds to 2023.
- The report gathers 49 references and the LCA has been developed with the reference product GLASSWOOL GOLD 35, the most sold product.
- For module C2, a distance of 50 km has been considered for transport between the place of generation of waste and its treatment point. (Product Environmental Footprint, PEF).
- The recycling rates defined on the Annex C of the PEF (Product Environmental Footprint) have been used for the calculation of the material for recycling.

**Cut-off rules:**

In the case that there is not enough information, the energy process and materials According to PCR 2019:14 Construction Products v1.3.4 and EN 15804:2012+A2:2019/AC:2021, at least 95% of all mass and energy inputs and outputs of the central system have been included in the analysis.

The infrastructure and capital goods have been excluded from the LCA. Besides, the following flows are excluded from the system boundaries, given their relatively low contribution to the impacts of the production system:

- Lighting, heating and cleaning of workshops,
- the administrative department,
- transportation of employees,
- the manufacture of the production tool and transport systems (machines, trucks, etc.),
- the maintenance of the factory infrastructure has not been considered,
- diffuse emissions of particulate matter during transport and storage of raw materials, & long-term emissions.

## Additional Information

**EUCEB:**

Mineral wool fibers have been exempted from carcinogenic classification according to: Regulation on classification and labelling of substances and mixtures Regulation (EC) n° 1272/2008 and its last update Regulation (EU) nº 2021/643. They have in fact successfully passed the tests established by this Regulation and their biopersistance is lower than the values defined in note « Q » of this text. This exemption is certified by the European CErtification Board (EUCEB - www.euceb.org).

The EUCEB certifies that fibers conform to note « Q » of the Regulation (EC) n° 1272/2008. The EUCEB guarantees that the exemption tests have been executed in conformance with European protocols, that industrial entities have control procedures in place during manufacture of the products, and that third parties inspect and approve the results.

The industrial entities in respect of EUCEB undertake as follows:

- To provide a test report compiled by a EUCEB recognized laboratory providing proof that the fibers satisfy one of the four exemption conditions established in note « Q » of Regulation (EC) n° 1272/2008,
- Twice yearly, to undergo production inspection by an independent third party recognized by EUCEB (sample taking and conformance with initial chemical analysis),
- To set up internal control procedures in each factory.

The products with this certification are recognizable as they have the EUCEB logo affixed to their packaging

**REACH:**

**Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).**

The glass wool products (rolls and boards) manufactured by URSA are defined as “articles” according to the article 3 (3) of EC Regulation 1907/2006 (REACH). Articles, whose functionality is more determinate by the shape, surface or design given in their production process, than by its chemical composition.

There, according to Art. 2 of EC Regulation 1907/2006 (REACH) our articles are excluded from the EC Regulation 1907/2006 (REACH).

Our products do not contain Substances of Very High Concern (SVHC) in a higher concentration than 0,1 % by weight according to the last update of the candidate list know at the date this document was issued.

ECHA-European Chemicals Agency regularly published an update SHVC list. The validity of this statement is therefore of ECHA new publications.

**Circular Economy:**

**Recycled Glass Content:**

According to ISO 14021:

1) Recycled Content is a Proportion, by mass, of recycled material in a product. *Only pre-consumer and post-consumer materials shall be considered as recycled content, consistent with the following use of terms,*

Pre-consumer material: Material diverted from waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.

Post-consumer material: Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. This includes returns of materials from the distribution chain.

2) Recovered material: Material that would have otherwise been disposed of a waste or used for energy recovery but has instead been collected and recovered as a material input, in lieu of new primary material, for a recycling or a manufacturing process.

For the Dabrowa plant, in the year 2023, the values are:

***Minimum 70% Recycled Glass Content, a mix of pre-consumer and post-consumer recycled material.***

*Certificate nº. SCS-RC-20328.*

***European Waste Codes***

Waste glass wool in the module A5 and C will be classified according to the European Waste Codes:

17 06 04 insulation materials other than those mentioned in 17 06 01 and 17 06 03

## Data quality requirements:

The data collection has considered 1 year (2023), following “Data quality level and criteria of the UN Environment Global Guidance on LCA database development” annex E, EN 15804+A2. It is quantified that all the data gathered for the LCA has a medium level of quality (3.8 out of 5), having a range of ‘very poor’ (1), poor (29, medium (3), good (4) and very good (5).

The Ecoinvent 3.10 and EuGeos' 15804+A2_IA v4.1 databases have been used to choose the most representative processes, considering that the data is representative of technological development, regionalized data and as current as possible. These data have been treated in the OpenLCA 2.4.0 software for LCA modeling and the calculation of environmental impact categories, complying with the quality requirements established in the PCR.

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

| | Phases and modules of life cycle taken into account | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Production phase** | **Construction phase** | | **Use phase** | | | | | | | **End of life phase** | | | | **D Benefits and loads beyond the limits of the system** |
| Module | A1 / A2 / A3 | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Energy use | B7 Use of water | C1 Deconstruction / demolition | C2 Transport | C3 Waste treatment | C4 Removal | |
| Module declared | x | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Geography | Poland | Poland | Global | Global | Global | Global | Global | Global | Global | Global | Global | Global | Global | Global | Global |
| Specific data used | 17% | >90% GWP | >90% GWP | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation -Products | -52%/+49% | No variability | No variability | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation - Sites | 0% | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

# Content information

The content of the information gathered on the following table refers to the representative product GLASWOOL GOLD 35.

| Product components | Weight, kg/m$^2$ | Pre-consumer material, weight-% | Post-consumer material, weight-% | Biogenic material, weight-% and kg C/kg |
|---|---|---|---|---|
| **Glass wool** | 2.850 (90-100%) | 85% | 15% | 0 |
| **Binder** | 0-10% | - | - | 0 |

| Packaging components | Weight, kg/m2 | Weight-% (versus the product) | Weight biogenic carbon, kg C/kg |
|---|---|---|---|
| **Plastic Packaging** | 0.017 | - | - |
| **Wood Pallet** | 0.157 | - | 0.288 |
| **TOTAL** | 0.174 | 6 | - |

# Results of the environmental performance indicators

The following tables gather the environmental impacts. Estimated impact results are only relative statements that do not indicate impact category endpoints, exceeding threshold values, safety margins, or risks.

## Potential environmental impact – mandatory indicators according to EN 15804

The use of the results of modules A1-A3 (A1-A5 for services) without considering the results of module C.

**Results per functional or declared unit for the representative product GOLD 35**

| | | Production phase | Construction phase | | Use phase | | | | | | | End of life phase | | | | D Benefits and loads beyond the limits of the system |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | A1 / A2 / A3 | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Energy use | B7 Use of water | C1 Deconstruction / demolition | C2 Transport | C3 Waste treatment | C4 Removal | |
| GWP-fossil | kg CO2 eq. | 1.34E+00 | 3.15E-01 | 2.87E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.03E-02 | 0.00E+00 | 1.47E-02 | -1.49E-01 |
| GWP-biogenic | kg CO2 eq. | 1.06E-01 | 4.76E-03 | 2.95E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.55E-04 | 0.00E+00 | 2.83E-04 | -9.24E-03 |
| GWP-luluc | kg CO2 eq. | 9.52E-04 | 9.91E-05 | 1.61E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.23E-06 | 0.00E+00 | 1.39E-05 | -2.50E-04 |
| GWP-total | kg CO2 eq. | 1.45E+00 | 3.20E-01 | 3.23E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.04E-02 | 0.00E+00 | 1.50E-02 | -1.58E-01 |
| ODP | kg CFC 11 eq. | 2.19E-07 | 6.29E-09 | 5.39E-09 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.05E-10 | 0.00E+00 | 6.07E-09 | -1.11E-08 |
| AP | mol H+ eq. | 8.32E-03 | 9.42E-04 | 1.86E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.07E-05 | 0.00E+00 | 1.41E-04 | -1.07E-03 |
| EP-freshwater | kg P eq. | 3.49E-04 | 2.06E-05 | 6.85E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.72E-07 | 0.00E+00 | 1.37E-06 | -5.79E-05 |
| EP-marine | kg N eq. | 1.26E-03 | 3.16E-04 | 3.37E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.03E-05 | 0.00E+00 | 4.91E-05 | -1.90E-04 |
| EP-terrestrial | mol N eq. | 2.58E-02 | 3.44E-03 | 5.95E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.12E-04 | 0.00E+00 | 5.37E-04 | -3.06E-03 |
| POCP | kg NMVOC eq. | 2.78E-02 | 1.49E-03 | 5.78E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.85E-05 | 0.00E+00 | 1.56E-04 | -5.61E-04 |
| ADP-minerals&metals* | kg Sb eq. | 2.10E-04 | 1.03E-06 | 4.21E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.36E-08 | 0.00E+00 | 8.83E-09 | -2.22E-06 |
| ADP-fossil* | MJ, net calorific value | 7.56E+00 | 4.39E+00 | 1.46E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.43E-01 | 0.00E+00 | 2.46E-02 | -1.05E+00 |
| WDP* | m3 world eq. deprived | 9.67E-01 | 2.11E-02 | 1.87E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.87E-04 | 0.00E+00 | 1.30E-03 | -6.41E-02 |
| Acronyms | GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption | | | | | | | | | | | | | | | |

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

## Potential environmental impact – additional mandatory and voluntary indicators

**Results per functional or declared unit for the representative product GOLD 35**

| | | Production phase | Construction phase | | Use phase | | | | | | | End of life phase | | | | D Benefits and loads beyond the limits of the system |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | A1 / A2 / A3 | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Energy use | B7 Use of water | C1 Deconstruction / demolition | C2 Transport | C3 Waste treatment | C4 Removal | |
| GWP-GHG[1] | kg CO2 eq. | 1.36E+00 | 3.16E-01 | 3.10E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.03E-02 | 0.00E+00 | 1.47E-02 | -1.50E-01 |

## Use of resources

**Results per functional or declared unit for the representative product GOLD 35**

| | | Production phase | Construction phase | | Use phase | | | | | | | End of life phase | | | | D Benefits and loads beyond the limits of the system |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | A1 / A2 / A3 | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Energy use | B7 Use of water | C1 Deconstruction / demolition | C2 Transport | C3 Waste treatment | C4 Removal | |
| PERE | MJ | 3.21E+00 | 8.48E-02 | 8.46E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.76E-03 | 0.00E+00 | 2.42E-03 | -1.41E-01 |
| PERM | MJ | 1.01E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PERT | MJ | 4.23E+00 | 8.48E-02 | 8.46E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.76E-03 | 0.00E+00 | 2.42E-03 | -1.41E-01 |
| PENRE | MJ | 7.00E+00 | 4.39E+00 | 1.46E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.43E-01 | 0.00E+00 | 2.47E-02 | -1.05E+00 |
| PENRM | MJ. | 5.58E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PENRT | MJ | 7.56E+00 | 4.39E+00 | 1.46E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.43E-01 | 0.00E+00 | 2.47E-02 | -1.05E+00 |
| SM | kg | 2.35E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| RSF | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| NRSF | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW | $m^3$ | 2.29E-02 | 5.96E-04 | 5.06E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.94E-05 | 0.00E+00 | 4.48E-04 | -1.86E-03 |

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO2 is set to zero.

## Results per functional or declared unit for the representative product GOLD 35

| | | Production phase | Construction phase | | Use phase | | | | | | | End of life phase | | | | D Benefits and loads beyond the limits of the system |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | A1 / A2 / A3 | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Energy use | B7 Use of water | C1 Deconstruction / demolition | C2 Transport | C3 Waste treatment | C4 Removal | |
| Acronyms | PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water | | | | | | | | | | | | | | | |

# Waste production and output flows

## Waste production

## Results per functional or declared unit for the representative product GOLD 35

| | | Production phase | Construction phase | | Use phase | | | | | | | End of life phase | | | | D Benefits and loads beyond the limits of the system |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | A1 / A2 / A3 | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Energy use | B7 Use of water | C1 Deconstruction / demolition | C2 Transport | C3 Waste treatment | C4 Removal | |
| Hazardous waste disposed | kg | 5.98E-03 | 3.88E-03 | 9.52E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.26E-04 | 0.00E+00 | 6.32E-07 | -1.67E-06 |
| Non-hazardous waste disposed | kg | 4.56E-01 | 4.91E-02 | 7.12E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.60E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Radioactive waste disposed | kg | 5.11E-05 | 1.68E-06 | 1.47E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.48E-08 | 0.00E+00 | 2.75E-06 | -5.02E-06 |

## Output flows

**Results per functional or declared unit for the representative product GOLD 35**

| | | Production phase | Construction phase | | Use phase | | | | | | | End of life phase | | | | D Benefits and loads beyond the limits of the system |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | A1 / A2 / A3 | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Energy use | B7 Use of water | C1 Deconstruction / demolition | C2 Transport | C3 Waste treatment | C4 Removal | |
| Components for re-use | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Material for recycling | kg | 1.60E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for energy recovery | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy, electricity | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy, thermal | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

# References


- ISO 14040:2006 Environmental management — Life cycle assessment — Principles and framework

- ISO 14044:2006 Environmental management — Life cycle assessment — Requirements and guidelines

- UNE-EN ISO 14020:2002 -Environmental labels and declarations - General principles. (ISO 14020:2000)

- UNE-EN ISO 14025:2006 - Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

- EN 15804:2012+A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

- EN 16783:2024 Thermal insulation products. Environmental Product

- PCR 2019:14. Construction products (EN 15804+A2) Version 1.3.4. PCR 2019:14

- c-PCR-005 c-PCR-005 Thermal Insulation products (EN 16783) (2024-05-03)

- General Programme Instructions of the International EPD® System. Version 4.

- LCA Report (Version 4 – 30.01.2024)

# Annex I: list of products covered by the EPD

| GLASSWOOL FAMILY REFERENCES | |
|---|---|
| 1 | URSA PLATINUM 32 |
| 2 | URSA TEP |
| 3 | URSA AMBER 33 |
| 4 | URSA SILENTIO 33 |
| 5 | URSA VENTO 34 |
| 6 | URSA PROFILO 35 |
| **7** | **URSA GOLD 35** |
| 8 | URSA FERMTERM 35 |
| 9 | URSA FRAMEWOOL 35 |
| 10 | URSA TRS-TAP-HCS 22 |
| 11 | URSA OPTIMUM 37 |
| 12 | URSA PROFILO 37 |
| 13 | URSA MODULO 37 |
| 14 | URSA SILENTIO 37 |
| 15 | URSA SILENTIO 38 |
| 16 | URSA SILVER 39 |
| 17 | URSA FERMOTERM 39 |
| 18 | URSA FRAMEWOOL 39 |
| 19 | URSA PROFILO 39 |
| 20 | URSA CRISTAL 40 |
| 21 | URSA PRACTIC 42 |
| 22 | URSA DF 45 |
| 23 | URSA PROFESJONALNA 34 |
| 24 | STANDARDOWA 38 |
| 25 | URSA BUDOWLANA 44 |
| 26 | URSA ULTRA 33 |
| 27 | URSA PREMIUM 35 |
| 28 | URSA KOMFORT 40 |
| 29 | URSA STANDARD |
| 30 | URSA HOME 33 |
| 31 | URSA HOME 37 |
| 32 | URSA HOME 39 |
| 33 | URSA HOME 40 |
| 34 | URSA ESSENTIA ROLL |

| | |
|---|---|
| 35 | URSA HOMEWALL |
| 36 | URSA GRANULO |
| 37 | URSA THERMO 35 |
| 38 | URSA THERMO ULTRA 33 |
| 39 | URSA MULTISKIVA 37 |
| 40 | URSA NORPLATTE 37 |
| 41 | URSA MATA 35 |
| 42 | URSA I-BJELKE 35 |
| 43 | URSA MATA 37 |
| 44 | URSA MATA 34 |
| 45 | URSA TAPE 22 |
| 46 | URSA MULTISKIVA 37 |
| 47 | URSA MULTISKIVA 35 |
| 48 | URSA NORPLATTE 37 |
| 49 | URSA ROLL 37 |