



# Environmental Product Declaration

of multiple products, based on a representative product,  
in accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

## **Thermal Insulation Products Low density range from Caparroso, ES**

from  
**ROCKWOOL A/S**

Programme:

Programme operator:

EPD registration number:

Version date:

Valid until:

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

EPD International AB

EPD-IES- 0024136:003

2026-01-22

2031-01-22

*An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see [www.environdec.com](http://www.environdec.com)*

# General information

## Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	www.environdec.com
<b>E-mail:</b>	support@environdec.com

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

### Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR):

Construction products, PCR 2019:14, Version 2.0.1, UN CPC 37990

c-PCR-005 Thermal insulation products (EN 16783: 2024) Version: 1.0.0, 2025-04-08

PCR review was conducted by: The Technical Committee of the International EPD® System

### Life Cycle Assessment (LCA)

LCA practitioners:

Alberto Oñoro, ROCKWOOL A/S (alberto.onoro@rockwool.com)

Martyna Nowacka, ROCKWOOL A/S (martyna.nowacka@rockwool.com)

Paulina Klein, ROCKWOOL A/S (paulina.klein@rockwool.com)

### Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006 via:  
**EPD verification by EPD Process Certification\* without a pre-verified LCA/EPD tool**

Internal auditor: Valentina Bisinella, ROCKWOOL A/S (valentina.bisinella@rockwool.com)

Third-party verifier: Bureau Veritas Italia S.p.A is an approved certification body accountable for third-party verification, accreditation number: VV n° 0009 by Accredia.

\*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.

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes  No

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they shall:

- be based on the same PCR (including the same version number) or fully aligned PCRs or versions of PCRs;
- cover products with identical functions, technical performances, and use (e.g. identical declared/functional units);
- have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant);
- apply identical impact assessment methods (including the same version of characterisation factors); and
- be valid at the time of comparison.

For further information about comparability, see EN 15804 and ISO 14025.

## Information about EPD owner

### Owner of the EPD

ROCKWOOL A/S  
Hovedgaden 584C  
DK-2640 Hedehusene  
Denmark

### Contact

Anna Manyes, ROCKWOOL Peninsular S.A.U.  
Ctra. Zaragoza, Km. 53,5 N121.  
31380 Caparrosa, Navarra, Spain  
asistencia.tecnica@rockwool.com

### Description of the organisation

ROCKWOOL A/S is the holding company representing the ROCKWOOL Group. With approx. 12,000 colleagues in 40 countries and sales in more than 120, we are the world leader in stone wool products, from building insulation to acoustic ceilings, external cladding systems to horticultural solutions, engineered fibres for industrial use to insulation for the process industry and marine & offshore.

At the ROCKWOOL Group, we are committed to enriching the lives of everyone who experiences our products and services, and to helping customers and communities tackle many of today's biggest sustainability and development challenges including energy consumption, noise pollution, fire resilience, water scarcity, urban flooding and more. Our product range reflects the diversity of the world's needs, while supporting our stakeholders in reducing their own carbon footprint.

### Product-related or management system-related certifications

ISO 14001, ISO 9001, ISO 50001, all referred to the production site.

# Product information

## Product name

This EPD covers a range of ROCKWOOL products, destined to the European market. The products are factory made thermal insulation products as defined in EN 16783:2024. This includes areas of application such as ceiling, roof, floor, wall, and perimeter.

For this EPD the reference product is "**Fixrock Eco**" panel, and the EPD includes products with densities ranging from 28 to 65 kg/m<sup>3</sup>. The Functional Unit is 1 m<sup>2</sup> of *Fixrock Eco* with a thickness of 37 mm and a density of 28 kg/m<sup>3</sup> for an R<sub>D</sub> = 1 m<sup>2</sup>·K/W.

Product Name	Weight (kg/m <sup>2</sup> , R=1m <sup>2</sup> K/W)
Fixrock Eco	1,04
Fixrock Eco Alu <sup>1</sup>	1,04
Fixrock Eco Kraft <sup>1</sup>	1,04
Fixrock Plus	1,65
Fixrock Plus Alu	1,65
Fixrock Plus Kraft <sup>1</sup>	1,65
Lusorock Fachada	1,75
Panel 203	1,04
Panel 211.652 <sup>1</sup>	1,76
Panel 213	1,44
Panel 221.652 <sup>1</sup>	2,20
Rockband	1,40
Rockband VN	1,40
Rockbardage	1,65
Rockbardage (solape derecho)	1,65
Rockbardage VN	1,65
Rockdry Plus	1,65
Rocktop Plus	1,65
Rocktop Plus vn <sup>2</sup>	1,65
Sonorock Eco	1,08
Sonorock Eco Alu <sup>1</sup>	1,08
Sonorock Kraft	1,08
Sonorock Plus	1,65
Sonorock Plus Alu <sup>1</sup>	1,65
Sonorock Plus Kraft <sup>1</sup>	1,65

<sup>1</sup> Products available with optional facings. For facings information, contact [asistencia.tecnica@rockwool.com](mailto:asistencia.tecnica@rockwool.com)

<b>Product Name</b>	<b>Weight (kg/m<sup>2</sup>, R=1m<sup>2</sup>K/W)</b>
Sonrock Plus vn <sup>1</sup>	1,65
Ventirock Duo	1,73
Ventirock Duo VN <sup>1</sup>	1,73
Ventirock Eco	1,58
Ventirock Energy	2,08

### Product identification

The product standards that apply are:

- EN 13162:2012+A1:2015 Thermal insulation products for buildings – Factory made mineral wool (MW) products – Specification;
- EN 14303:2009+A1:2013: Thermal insulation products for building equipment and industrial installations. Factory made mineral wool products.

### Product description



ROCKWOOL stone wool thermal insulation is a durable and firesafe insulation material that can be used to insulate against heat, cold, fire, vibrations, and noise. ROCKWOOL stone wool is made primarily from abundantly available volcanic rock, an increasing proportion of recycled ROCKWOOL stone wool material and a cured resin binder. Other materials utilised in the production of ROCKWOOL stone wool are wastes, by-products from other industries.

Stone wool is available with different densities and thermal conductivities, and it is used in many applications of everyday life, ranging from roofs, loft, walls, floors, to fire prevention solutions and HVAC systems. The products covered by this declaration are for building insulation application, in particular for roofs and façades. The faced and unfaced synthetic resin-bonded stone wool materials described in this declaration are produced in the form of slabs for use in building applications in the density range from 28 up to 65 kg/m<sup>3</sup>.

ROCKWOOL stone wool is a non-combustible material that does not react to fire. Stone wool's built-in fire protection is natural and not dependent on flame retardants. Stone wool withstands temperatures exceeding 1000 degrees Celsius, and retains its fire performance throughout its lifetime.

---

<sup>1</sup> Products available with optional facings. For facings information, contact [asistencia.tecnica@rockwool.com](mailto:asistencia.tecnica@rockwool.com)

The insulation properties of stone wool is primarily achieved by the immobile air within in the open structure of the product. Therefore, the declared insulation property will remain constant for the declared lifetime of the product. This also allows the product to absorb noise and sound and contribute to a better indoor acoustic climate.

ROCKWOOL stone wool fibres are proven to be safe to manufacture, install and live with. Health and safety installation instructions shall always be followed. ROCKWOOL stone wool fibres comply with the European REACH regulation and do not have any health-related classifications. ROCKWOOL insulation products do not contain flame retardants and blowing agents, and are proven not to have a negative impact on the indoor environment.

Specific characteristics and additional functionalities shall be taken into account when applying the EPDs in the building context:

- Most ROCKWOOL stone wool material is classified as non-combustible (Euroclass A1), the best reaction to fire class according to EN13501-1.
- ROCKWOOL stone wool products are often applied because of their acoustic properties. For example, a well-constructed wall using ROCKWOOL stone wool insulation can help comply with acoustic regulation requirements in average building typologies.
- ROCKWOOL stone wool products are durable without any ageing of the thermal performance. They are dimensional stable and both water repellent and moisture resistant.

More specific product information can be found on [www.rockwool.com](http://www.rockwool.com) or through the local ROCKWOOL sales organizations. Guidance on safe and effective installation could be provided through the local organization.

ROCKWOOL stone wool is endlessly recyclable, meaning that it can be recycled again and again without degrading its quality.

ROCKWOOL stone wool waste is classified as non-hazardous. ROCKWOOL insulation waste is covered by the non-hazardous entry (17 06 04) in the List of Wastes of the European Waste Catalogue.

**Name and location of production site**

ROCKWOOL Peninsular S.A.U., Carretera Zaragoza, Km. 53, 5 N-121, 31380 Caparroso, Navarra, Spain

**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).

## Content declaration

The weight of the reference product **Fixrock Eco** is 1.04 kg/m<sup>2</sup>, with R<sub>D</sub> = 1 m<sup>2</sup>K/W (see Functional Unit). The materials in the table below represent the quantities needed to produce the Functional Unit. The percentage of binder in the final ROCKWOOL products is on average 0-6%.

Product components	Weight %	Pre-consumer material Weight %	Post-consumer material Weight %	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Stones	32	0	0	0	0
Briquettes	54	43	0,2	0	0
Recovered metallurgical slags	7,7	7,7	0	0	0
Binder	5,7	0	0	1,3	5,2E-03
Mineral oil	<1	0	0	0	0
Total	100	51	0	1,3	5,2E-03

The mass and the content of packaging is:

Packaging materials	Weight (kg/kg declared unit)	Weight % (versus the product)	Pre-consumer material Weight %	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Wooden pallet	5,8E-02	90	0	5,8	2,7E-02
Cardboard/paper	2,4E-04	<1	0	<1	1,1E-04
Plastic film	6,2E-03	10	0	0	0
Total	6,5E-02	100	0	5,8	2,7E-02

# LCA information

<b>Functional unit</b>	1m <sup>2</sup> of ROCKWOOL stone wool insulation with a thermal resistance (R-value) equal to 1 m <sup>2</sup> K/W
<b>Density of reference product</b>	28 kg/m <sup>3</sup>
<b>Thickness of reference product</b>	37 mm
<b>Scope</b>	Cradle to Grave and Module D (A + B + C + D)
<b>Reference service life</b>	≥ 65 years

The intended use of the EPD is to communicate quantified environmental impacts of construction products for application in the assessment of the environmental performance of buildings. The packaging is included in the assessment.

## Geographical scope

This EPD is intended to be available to the customers of ROCKWOOL Peninsular S.A.U that receive products produced in the factory of Caparros, Spain, and utilize these products in Europe. For modules A1 and A2 European data was considered, specific to the geographical location when possible. For the manufacturing module A3 specific data from Spain was used. For the rest of the modules, after the manufacturing stage, European data was considered.

## Functional unit

This EPD documents the potential environmental impacts of 1m<sup>2</sup> of ROCKWOOL® stone wool insulation with a thermal resistance (R-value) equal to 1 m<sup>2</sup>K/W during its Reference Service Life (RSL). A product of 28 kg/m<sup>3</sup> density and a nominal thickness of 37 mm fulfils the declared unit specification and provides a base dataset from which product specific data can be calculated.

## Reference service life

ROCKWOOL stone wool thermal insulation products are extremely durable and provide effective performance for the lifetime of a building or host structure, with no need to be replaced. The thermal, fire-resistance, and acoustic performance of ROCKWOOL stone wool products, when correctly installed, remains the same during the reference service life or as long as the insulation is part of the building. The RSL is at least 65 years, or as long as the lifetime of the building.

## Description of the production process

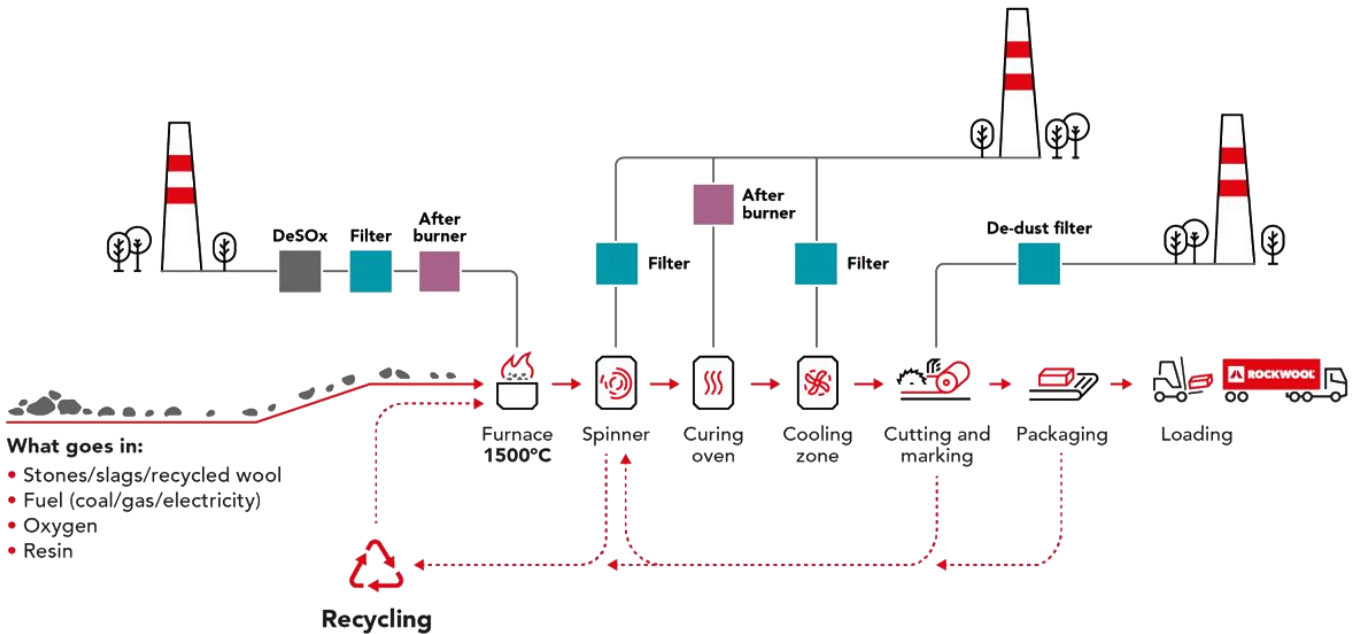
Raw material, mainly volcanic rocks, are melted at around 1500 °C. The molten rock is channelled onto high-speed spinners, injecting air to create the fibres.

A binder is added to hold the wool strands together, along with a water-repellent oil.

The fibres are then collected and layered on large conveyor belt-type machinery, where the layers are compressed and sent onward to where the wool and binder are cured and later cooled, before being sent to cutting and packaging and then shipping to customers.

**Legend:**

- Movement of raw materials and wool
- Exhaust from different parts of the production process
- ⋯ Recycling of wool waste



\*The above graphic is an illustrative representation only.

**EPD system boundary**

The EPD is “cradle to grave and module D” (A + B + C + D).

**Description of system boundary**

The LCA is performed as a “cradle-to-grave” study, addressing all life cycle stages identified in the EN 15804+A2. All major raw materials, energy, electricity use, and waste are included for all life cycle modules. Use stage B1-7 modules are considered but are not relevant, as there are no activities and no significant environmental impact in the use stage.

The product stage **A1-A3** includes:

- Provision of preliminary products and energy and relevant upstream processes;
- Transporting the raw materials and preliminary materials to the plant;
- Production process in the plant including energy inputs and emissions;
- Electricity consumption;
- Waste processing up to the end-of-waste state or disposal of waste residues, during the production stage;
- Production of packaging;
- Manufacturing of products and co-product.

In the product system under assessment, the slags, alumina, and ashes are considered by-products from the steel and coal fired electricity production respectively with the application of economic allocation, so their environmental impact is accounted for.

Recycled stone wool comes free of environmental burden, as it enters the product system as waste. Recycled fuels also come free of environmental burden, but their transport to the factory is accounted for.

During the melting of raw materials pig iron is created in the cupola furnace. Pig iron is a co-product, which is subsequently sold to the market and economic allocation is applied.

The climate impact (in kg CO<sub>2</sub>-eq/kWh using the GWP-GHG indicator) of electricity or biogas purchased in the manufacturing process in A3 are 0,039 kg CO<sub>2</sub>-eq/kWh for the Biomass Renewable Energy Certificates and 0,014 kg CO<sub>2</sub>-eq/kWh for the Wind Power Renewable Energy Certificates.

Modules A1, A2 and A3 are declared as an aggregated Module A1-3

The Construction Stage **A4-A5** includes:

- A4 transport to the building site
- A5 installation to the building

The transport in A4 is modelled by volume, as the most conservative approach. The default vehicle is the truck, and all the values are based on annual average delivery data.

Parameter	Value
Average transport distance	495 km
Type of vehicle used for transport	Truck Euro 6 (20-26 t / 17,3 t payload)
Truck capacity utilisation (including 30% empty returns)	0,64

In A5 the default installation is assumed to be manual, therefore, no energy consumption or ancillary equipment is needed.

The product waste from installation is assumed to be 2% and according to the modularity principle of EN 15804 its impacts are fully allocated to A5. The A5 stage includes also waste processing up to the end-of-waste state or disposal of final residues during the construction process stage and impacts and aspects related to product losses during installation.

The waste management scenario for packaging materials has been adjusted to represent waste management shares for recycling and incineration, specific to the European market (EUROSTAT 2020).

Finally, the A5 module also includes the corresponding end-of-life considerations for packaging. The credits from heat and electricity recovery from incineration, or material recycling from module A5 are attributed to module D.

Parameter	Value
Auxiliaries	0
Water consumption	0
Electricity consumption	0
Other energy carriers	0
Material loss	2%
Cardboard and paper packaging	83% recycling, 9% incineration, 9% landfill
Plastic Packaging	40% recycling, 37% incineration, 23% landfill
Wood packaging	32% recycling, <1% incineration, 38% landfill

In the use-stage **B1-B7**, ROCKWOOL stone wool insulation products do not require maintenance (B2), repair (B3), replacement (B4), or refurbishment (B5) during use in standard conditions. They do not use energy (B6) or water (B7) during use of the building related to the building fabric.

The End-of-life stage **C1-C4** includes:

- C1 de-construction, demolition;
- C2 transport to waste processing
- C3 waste processing for reuse, recovery and/or recycling
- C4 disposal

These stages also include provision and all transport, provision of all materials, products and related energy and water use. Energy required for deconstruction is assumed for C1. The scenario applied for module C2 can be seen in the table below.

Parameter	Value
Average transport distance to landfill	50 km
Type of vehicle used for transport	Truck Euro 6 (20-26 t / 17,3 t payload)
Truck capacity utilisation (including 30% empty returns)	0,5

We provide three End-of-Life scenarios:

- Baseline, with 3% recycling and 97% landfill;
- 100% recycling;
- 100% landfill.

The data used to model the End-of-Life scenarios is provided in the table below, based on PCR 2019:14, version 2.0.1.

Process in C1	Energy carrier	Quantity (kWh/tonne)
Demolition/deconstruction of steel, wood, and other materials	Diesel	1,1
Process in C3	Energy carrier	Quantity (kWh/tonne)
Loading and unloading at sorting facility	Diesel	1,8
Mechanical sorting	Electricity	2,2
Crushing, cutting, shredding	Diesel	1,5
Treatment of materials	Diesel	0,8

Module **D** includes reuse, recovery and/or recycling potentials expressed as net impacts and benefits. Here the credits for the packaging disposal in A5 and the recycling potential of ROCKWOOL material in C are considered.

### Time representativeness

Plant production data for the complete year 2023 (average over 12 months).

The products considered in this EPD are produced in one single manufacturing plant; therefore, variations issue for sites is not relevant.

**Database and LCA software used**

The LCA model, the data aggregation and environmental impacts are calculated with the software LCA for Expert (GaBi) 10.9.0.20 and its content version 2023.2.

The impact assessment models and characterization factors used are those indicated in EN 15804:2012+A2:2019.

**Modelling of infrastructure/capital goods**

Infrastructure and capital goods are in principle not included in the scope of this EPD. Infrastructure and capital goods already present in the background data used for the LCA calculations, and infrastructure involved in the generation of electricity under the control of the EPD owner are included.

**Allocation**

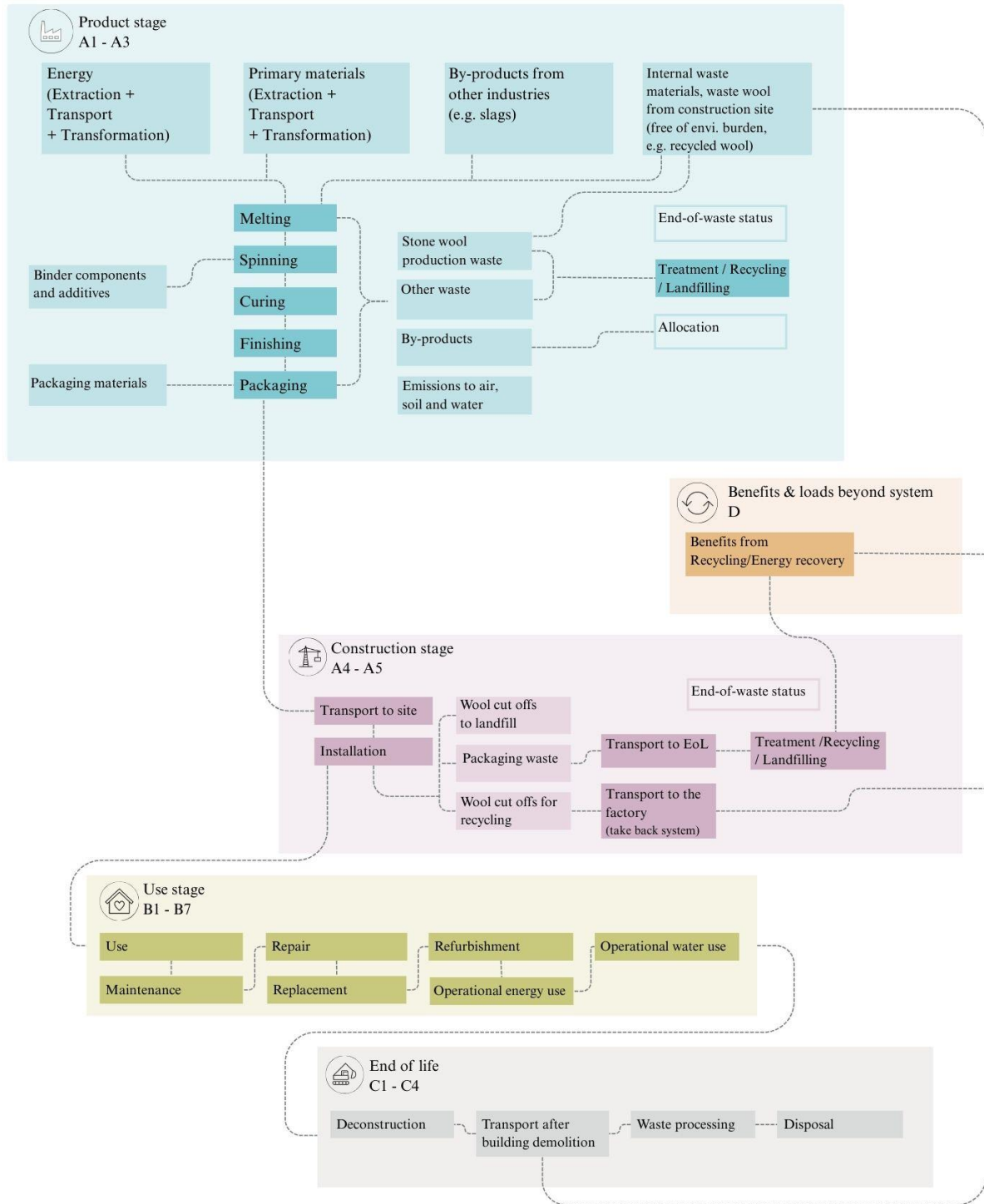
The allocation is made in accordance with the provisions of EN 15804+A2.

Production activities, electricity and energy consumption and waste generation are allocated equally among all products from the production site through mass allocation. The environmental impact of co-products coming for example from the steel and electricity plants (e.g. slags, alumina and ashes entering the system as inputs to the manufacturing) is accounted for and economic allocation is applied. Besides stone wool, pig iron is produced during the melting process of raw materials and sold. The iron is considered to be a co-product. Iron as a co-product is allocated by economic value. This is in line with EN15804+A2.

**Cut-off criteria**

All major raw materials and all the essential energy are included. All hazardous materials and substances are considered in the inventory. Data sets within the system boundary are complete and fulfil criteria for the exclusion of inputs and output criteria. All data, materials and energy consumptions have been specified according to the production data and have been considered within the inventory analysis.

## Process flow diagram



## Data quality assessment

The quality of the data of this specific EPD is assessed as very good and appropriate.

Primary data are collected consistently from production site in Caparros, in the reference year 2023 and represents stabilized production over 12 months.

Generic data is from LCA FE (GaBi) version 10.9.0.20, database content 2023.2

The total share of primary data contributing to the declared GWP-GHG results of modules A1-A3 is provided in the table below. The share for modules A1-A3 is 97,5% of the total A1-A3; primary data, specific from the EPD owner, and secondary data (e.g. based on assumptions or other sources) contribution to the A1-A3 can be found below:

<b>Process</b>	<b>Source type</b>	<b>Source</b>	<b>Reference year</b>	<b>Data category</b>	<b>Share of primary data, of GWP-GHG results for A1-A3</b>
<b>Generation of electricity used in manufacturing of product</b>	Collected Data, Database	EPD Owner, Sphera.	2023	Primary data	1,3%
<b>Thermal Energy</b>	Collected Data, Database	EPD Owner, Sphera.	2023	Primary data	50,0%
<b>Emissions Specific</b>	Collected Data, Database	EPD Owner, Sphera.	2023	Primary data	16%
<b>Production of Binder</b>	Collected Data, Database	EPD Owner, Sphera.	2023	Primary data, secondary data	8%
<b>Mining of Stones and Production/extraction of melting Materials</b>	Collected Data, Database	EPD Owner, Sphera.	2023	Primary data, secondary data	9%
<b>Production of energy Materials for thermal Energy</b>	Collected Data, Database	EPD Owner, Sphera.	2023	Primary data, secondary data	11%
<b>Transport of Raw Materials</b>	Collected Data, Database	EPD Owner, Sphera.	2023	Primary data, secondary data	1,7%
<b>Total share of primary data, of GWP-GHG results for A1-A3</b>					<b>97,5%</b>

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories

	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
<b>Module</b>	<b>A1</b>	<b>A2</b>	<b>A3</b>	<b>A4</b>	<b>A5</b>	<b>B1</b>	<b>B2</b>	<b>B3</b>	<b>B4</b>	<b>B5</b>	<b>B6</b>	<b>B7</b>	<b>C1</b>	<b>C2</b>	<b>C3</b>	<b>C4</b>	<b>D</b>
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	ES	ES	ES	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU
Share of primary data	>90%																
Variation - products	>10%																
Variation - sites	0%																

# Results of the environmental performance indicators

The results are calculated for the Functional Unit of 1 m<sup>2</sup> of **reference product** with density of 28 kg/m<sup>3</sup> and thickness 37 mm for R=1 m<sup>2</sup>K/W.

Scaling factors can be used to calculate results for other products included in this EPD, by multiplying the scaling factor with the respective results per impact category and module.

## Core Environmental Impact indicators according to EN 15804

### Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP-total	kg CO <sub>2</sub> eq.	9,30E-01	5,40E-02	1,33E-01	0,00E+00	2,94E-05	3,30E-03	2,55E-05	3,43E-02	-5,07E-02
GWP-fossil	kg CO <sub>2</sub> eq.	1,05E+00	5,35E-02	3,33E-02	0,00E+00	4,61E-05	3,27E-03	2,72E-05	1,50E-02	-1,83E-02
GWP-biogenic	kg CO <sub>2</sub> eq.	-1,18E-01	0,00E+00	9,94E-02	0,00E+00	1,98E-05	0,00E+00	5,93E-04	1,92E-02	-3,23E-02
GWP-LULUC	kg CO <sub>2</sub> eq.	5,73E-04	4,95E-04	2,62E-05	0,00E+00	3,07E-06	3,03E-05	3,46E-07	4,90E-05	-1,98E-05
ODP	kg CFC 11 eq.	1,76E-09	4,68E-15	7,39E-11	0,00E+00	2,90E-17	2,86E-16	4,10E-16	8,72E-17	-2,67E-14
AP	mol H <sup>+</sup> eq.	4,60E-03	6,56E-05	1,14E-04	0,00E+00	2,10E-07	4,12E-06	7,06E-08	1,09E-04	-6,14E-05
EP-freshwater	kg P eq.	1,04E-05	1,95E-07	3,09E-07	0,00E+00	1,21E-09	1,19E-08	2,18E-10	2,67E-08	-1,14E-07
EP-marine	kg N eq.	6,84E-04	2,25E-05	3,21E-05	0,00E+00	4,32E-08	1,43E-06	1,61E-08	2,81E-05	-2,05E-05
EP-terrestrial	mol N eq.	6,09E-03	2,71E-04	2,05E-04	0,00E+00	5,78E-07	1,72E-05	1,82E-07	3,09E-04	-2,12E-04
POCP	kg NMVOC eq.	1,77E-03	5,65E-05	6,95E-05	0,00E+00	1,62E-07	3,55E-06	4,82E-08	8,53E-05	-6,00E-05
ADP-minerals&metals*	kg Sb eq.	2,39E-07	3,47E-09	3,75E-09	0,00E+00	2,15E-11	2,12E-10	5,82E-12	1,46E-09	-2,40E-09
ADP-fossil*	MJ	9,25E+00	7,27E-01	2,54E-01	0,00E+00	4,51E-03	4,44E-02	9,69E-04	2,06E-01	-3,80E-01
WDP*	m <sup>3</sup>	1,01E-01	6,16E-04	6,39E-03	0,00E+00	3,82E-06	3,77E-05	5,34E-06	1,63E-03	-5,98E-03

### 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. 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. The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).*

## Additional mandatory and voluntary impact category indicators

### Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP- GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	1,05E+00	5,40E-02	3,33E-02	0,00E+00	4,91E-05	3,30E-03	2,76E-05	1,51E-02	-1,84E-02

<sup>1</sup>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 CO<sub>2</sub> is set to zero.

## Resource use indicators

### Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ	2,82E+00	5,15E-02	3,58E-01	0,00E+00	3,19E-04	3,15E-03	3,13E-04	2,74E-02	-5,45E-01
PERM	MJ	1,31E+00	0,00E+00	-2,92E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	4,13E+00	5,15E-02	6,67E-02	0,00E+00	3,19E-04	3,15E-03	3,13E-04	2,74E-02	-5,45E-01
PENRE	MJ	8,72E+00	7,29E-01	3,36E-01	0,00E+00	4,52E-03	4,45E-02	9,70E-04	2,06E-01	-5,45E-01
PENRM	MJ	5,27E-01	0,00E+00	-9,25E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	9,25E+00	7,29E-01	2,44E-01	0,00E+00	4,52E-03	4,45E-02	9,70E-04	2,06E-01	-5,45E-01
SM	kg	2,28E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,80E-02
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
NRSF	MJ	9,32E-01	0,00E+00	1,86E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m <sup>3</sup>	3,32E-03	5,67E-05	1,72E-04	0,00E+00	3,52E-07	3,46E-06	2,63E-07	5,01E-05	-1,32E-04

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

Note: Option C, according to EPD International Construction Product PCR 2.0.1 (Annex 3) was used to separate the use of primary energy into energy used as raw material and energy used as energy carrier.

## Waste indicators

### Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	2,72E-07	2,69E-12	5,45E-09	0,00E+00	1,67E-14	1,64E-13	-3,45E-14	2,14E-11	-1,47E-11
Non-hazardous waste disposed	kg	8,40E-02	1,05E-04	3,73E-02	0,00E+00	6,52E-07	6,42E-06	4,13E-07	1,00E+00	-2,99E-03
Radioactive waste disposed	kg	6,97E-05	9,43E-07	3,92E-06	0,00E+00	5,85E-09	5,76E-08	7,45E-08	2,12E-06	-5,11E-06

## Output flow indicators

### Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	2,21E-02	0,00E+00	0,00E+00	0,00E+00	2,80E-02	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	2,04E-02	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	6,49E-02	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	1,37E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

## Additional impact categories and indicators

### Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PM	Disease incidence	4,50E-08	4,43E-10	1,09E-09	0,00E+00	1,50E-12	2,79E-11	3,97E-13	1,35E-09	-4,60E-09
IRP	kBq U235 eq.	1,28E-02	1,36E-04	5,74E-04	0,00E+00	8,44E-07	8,32E-06	1,23E-05	2,23E-04	-7,42E-04
ETP - fw	CTUe	1,89E+00	5,12E-01	1,06E-01	0,00E+00	3,18E-03	3,13E-02	1,29E-04	1,18E-01	-3,36E-02
HTP - c	CTUh	5,48E-10	1,03E-11	1,33E-11	0,00E+00	6,40E-14	6,30E-13	6,83E-15	1,70E-11	-7,18E-12
HTP - nc	CTUh	4,42E-09	4,56E-10	3,16E-10	0,00E+00	2,83E-12	2,79E-11	1,09E-13	1,80E-09	-1,45E-10
SQP	-	2,87E+01	3,04E-01	5,89E-01	0,00E+00	1,88E-03	1,85E-02	1,82E-04	4,25E-02	-6,28E+00

#### Acronyms

PM= Particulate matter emissions; IRP= Ionising radiation, human health; ETP-fw= Ecotoxicity (freshwater); ETP-c= Human toxicity, cancer effects; HTP-nc= Human toxicity, non-cancer effects; SQP= Land use related impacts / soil quality

## Additional LCA results

In addition to the most probable scenario, results from the corresponding 100% scenarios are added in this section.

The results are calculated for the Functional Unit of 1m<sup>2</sup> of **reference product** with density of 28 kg/m<sup>3</sup> and thickness 37 mm for R=1 m<sup>2</sup>K/W.

Scaling factors can be used to calculate results for other products included in this EPD, by multiplying the scaling factor with the respective results per impact category and module.

### 100% scenarios

#### Core Environmental Impact indicators according to EN 15804

Indicator	Unit	C1	100% RECYCLING					100% LANDFILL			
			C2.1	C3.1	C4.1	D.1	C2.2	C3.2	C4.2	D.2	
GWP-total	kg CO <sub>2</sub> eq.	2,94E-05	8,47E-03	8,51E-04	0,00E+00	-5,65E-02	3,14E-03	0,00E+00	3,54E-02	-5,06E-02	
GWP-fossil	kg CO <sub>2</sub> eq.	4,61E-05	8,39E-03	9,07E-04	0,00E+00	-2,40E-02	3,11E-03	0,00E+00	1,55E-02	-1,82E-02	
GWP-biogenic	kg CO <sub>2</sub> eq.	1,98E-05	0,00E+00	1,98E-02	0,00E+00	-3,23E-02	0,00E+00	0,00E+00	1,98E-02	-3,23E-02	
GWP-LULUC	kg CO <sub>2</sub> eq.	3,07E-06	7,78E-05	1,15E-05	0,00E+00	-4,25E-05	2,88E-05	0,00E+00	5,05E-05	-1,92E-05	
ODP	kg CFC 11 eq.	2,90E-17	7,36E-16	1,37E-14	0,00E+00	-3,43E-14	2,72E-16	0,00E+00	8,99E-17	-3,00E-14	
AP	mol H <sup>+</sup> eq.	2,10E-07	1,06E-05	2,35E-06	0,00E+00	-1,09E-04	3,92E-06	0,00E+00	1,12E-04	-6,03E-05	
EP-freshwater	kg P eq.	1,21E-09	3,07E-08	7,25E-09	0,00E+00	-1,63E-07	1,13E-08	0,00E+00	2,75E-08	-1,13E-07	
EP-marine	kg N eq.	4,32E-08	3,66E-06	5,37E-07	0,00E+00	-4,02E-05	1,36E-06	0,00E+00	2,89E-05	-1,99E-05	
EP-terrestrial	mol N eq.	5,78E-07	4,41E-05	6,08E-06	0,00E+00	-4,35E-04	1,64E-05	0,00E+00	3,19E-04	-2,06E-04	
POCP	kg NMVOC eq.	1,62E-07	9,12E-06	1,61E-06	0,00E+00	-1,16E-04	3,38E-06	0,00E+00	8,79E-05	-5,83E-05	
ADP-minerals&metals*	kg Sb eq.	2,15E-11	5,45E-10	1,94E-10	0,00E+00	-3,54E-09	2,02E-10	0,00E+00	1,50E-09	-2,37E-09	
ADP-fossil*	MJ	4,51E-03	1,14E-01	3,23E-02	0,00E+00	-4,44E-01	4,23E-02	0,00E+00	2,13E-01	-3,78E-01	
WDP*	m <sup>3</sup>	3,82E-06	9,68E-05	1,78E-04	0,00E+00	-5,70E-03	3,58E-05	0,00E+00	1,68E-03	-5,63E-03	

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. 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. The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).*

## Resource use indicators

		Results per declared unit								
		100 % RECYCLING					100% LANDFILL			
Indicator	Unit	C1	C2.1	C3.1	C4.1	D.1	C2.2	C3.2	C4.2	D.2
PERE	MJ	3,19E-04	8,08E-03	1,04E-02	0,00E+00	-5,53E-01	2,99E-03	0,00E+00	2,83E-02	-5,45E-01
PERM	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
PERT	MJ	3,19E-04	8,08E-03	1,04E-02	0,00E+00	-5,53E-01	2,99E-03	0,00E+00	2,83E-02	-5,45E-01
PENRE	MJ	4,52E-03	1,14E-01	3,23E-02	0,00E+00	-4,44E-01	4,24E-02	0,00E+00	2,13E-01	-3,78E-01
PENRM	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
PENRT	MJ	4,52E-03	1,14E-01	3,23E-02	0,00E+00	-4,44E-01	4,24E-02	0,00E+00	2,13E-01	-3,78E-01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,53E-01	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
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
FW	m <sup>3</sup>	3,52E-07	8,90E-06	8,78E-06	0,00E+00	-1,36E-04	3,29E-06	0,00E+00	5,16E-05	-1,30E-04

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

Note: Option C, according to EPD International Construction Product PCR 2.0.1 (Annex 3) was used to separate the use of primary energy into energy used as raw material and energy used as energy carrier.

## Waste indicators

		Results per declared unit								
		100% RECYCLING					100% LANDFILL			
Indicator	Unit	C1	C2.1	C3.1	C4.1	D.1	C2.2	C3.2	C4.2	D.2
Hazardous waste disposed	kg	1,67E-14	4,24E-13	-1,15E-12	0,00E+00	-2,48E-09	1,56E-13	0,00E+00	2,21E-11	5,93E-11
Non-hazardous waste disposed	kg	6,52E-07	1,65E-05	1,38E-05	0,00E+00	-9,80E-02	6,11E-06	0,00E+00	1,04E+00	-1,25E-04
Radioactive waste disposed	kg	5,85E-09	1,48E-07	2,48E-06	0,00E+00	-4,65E-06	5,48E-08	0,00E+00	2,18E-06	-5,34E-06

## Output flow indicators

		Results per declared unit								
		100% RECYCLING					100% LANDFILL			
Indicator	Unit	C1	C2.1	C3.1	C4.1	D.1	C2.2	C3.2	C4.2	D.2
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
Material for recycling	kg	0,00E+00	0,00E+00	9,32E-01	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
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
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

## Additional impact categories and indicators

### Results per declared unit

Indicator	Unit	C1	100% RECYCLING				100% LANDFILL			
			C2.1	C3.1	C4.1	D.1	C2.2	C3.2	C4.2	D.2
PM	Disease incidence	1,50E-12	7,15E-11	1,32E-11	0,00E+00	-5,48E-09	2,65E-11	0,00E+00	1,39E-09	-4,58E-09
IRP	kBq U235 eq.	8,44E-07	2,13E-05	4,09E-04	0,00E+00	-5,79E-04	7,92E-06	0,00E+00	2,30E-04	-8,85E-04
ETP - fw	CTUe	3,18E-03	8,04E-02	4,30E-03	0,00E+00	-7,84E-02	2,97E-02	0,00E+00	1,21E-01	-3,40E-02
HTP - c	CTUh	6,40E-14	1,62E-12	2,28E-13	0,00E+00	-9,30E-12	6,00E-13	0,00E+00	1,76E-11	-7,09E-12
HTP - nc	CTUh	2,83E-12	7,16E-11	3,63E-12	0,00E+00	-3,33E-10	2,65E-11	0,00E+00	1,86E-09	-1,41E-10
SQP	-	1,88E-03	4,77E-02	6,07E-03	0,00E+00	-6,32E+00	1,76E-02	0,00E+00	4,38E-02	-6,28E+00

Acronyms PM= Particulate matter emissions; IRP= Ionising radiation, human health; ETP-fw= Ecotoxicity (freshwater); ETP-c= Human toxicity, cancer effects; HTP-nc= Human toxicity, non-cancer effects; SQP= Land use related impacts / soil quality

# Additional environmental information

## Circularity of ROCKWOOL stone wool

ROCKWOOL stone wool is based on stone, one of the most abundant raw materials on the planet<sup>3</sup>. Although stone is plentiful, it is still important to minimise the use of natural resources. This is especially true in the construction sector, which produces one-third of all waste globally<sup>4</sup>, much of which ends up in landfill.

The vast majority of ROCKWOOL products can be easily removed when a building is renovated or demolished and recycled back into new products - without losing performance.

By recycling stone wool, the consumption of primary materials is reduced and replaced by recycled wool, and the waste going to landfill is also reduced.

ROCKWOOL Peninsular is progressively implementing the Rockcycle® service to take back and recycle stone wool cuts and reuse wood pallets. For more information, please visit <https://www.rockwool.com/es/documentacion-y-herramientas/servicios/rockcycle/>



## Durability of ROCKWOOL stone wool

ROCKWOOL stone wool is durable, and it keeps its shape and thermal performance during the lifecycle of the building and is resistant to both corrosion and mould. Its performance is unaffected by weather, humidity, or temperature changes - and needs no technical supervision or maintenance throughout the building's lifetime.

The thermal, fire-resistance, and acoustic performance of ROCKWOOL stone wool products, when correctly installed, remains the same during the life time of the building.<sup>5</sup>

<sup>3</sup> TW Dahl, et al. (2011), *International Geology Review (Volume 53 Numbers 7-8, June-July 2011) 'The human impact on natural rock reserves using basalt, anorthosite, and carbonates as raw materials in insulation products', p. 901*

<sup>4</sup> <https://www.bbc.com/future/article/20211215-the-buildings-made-from-rubbish>

<sup>5</sup> FIW, Durability Project Mineral Wool(2016), p.29, Chapter 7 "Conclusions and Outlook" + EN 13162 "Thermal insulation products for buildings - Factory made mineral wool (MW) products -Specification", paragraph 4.2.7 "Durability characteristics"



Tests from old construction sites show that ROCKWOOL stone wool insulation products have retained their insulation characteristics and properties for more than **65 years**.<sup>6</sup>

### **Disassemblability of ROCKWOOL stone wool**

ROCKWOOL stone wool products are engineered for easy disassembly, facilitating their removal and re-use or recycling at the end of a building's life.

The key aspects of the disassembly process are:

- **Modular design:** ROCKWOOL stone wool is produced in modular formats, such as slabs, panels, or rolls. This modularity means that each piece can be easily removed without the need for extensive demolition work.
- **Durability:** The durability of ROCKWOOL stone wool ensures that it maintains its shape and structural properties, even after long-term use, aiding in the disassembly process.
- **Accessible placement:** stone wool is usually placed in accessible locations within building structures, such as between studs in walls, above ceilings, or under floors. This accessibility means that the insulation can be reached and removed without major structural alterations.

The removal of stone wool products can be made using different techniques, depending on the type of installation:

- **Mechanical Fasteners:** Insulation secured with screws, clips, or other mechanical fasteners can be easily unfastened.
- **Friction Fittings:** Insulation that relies on friction to stay in place can be pulled out by hand or with the aid of simple tools.
- **Sectional Removal:** Modular stone wool slabs or panels can be removed section by section. This method minimizes damage to the insulation, preserving its integrity for potential reuse.

To guarantee the complete recyclability of stone wool, separation from other materials must be ensured by:

- **Material Segregation:** During the disassembly, insulation is separated from other building materials, such as wood, metal, or drywall.
- **Contaminant Removal:** Any contaminants, such as debris, or residual adhesives, are cleaned off to ensure the stone wool is in a suitable condition for recycling.

By designing products that are easy to disassemble, ROCKWOOL not only facilitates the recycling and reuse of insulation materials but also contributes to the broader goals of reducing construction waste and promoting circular economy principles.

The disassembly process can ensure that the benefits of ROCKWOOL stone wool extend well beyond the building reference service life.

### **Safety of ROCKWOOL stone wool and information regarding its disposal**

ROCKWOOL stone wool fibres are proven to be safe to manufacture, install and live with. They comply with the European REACH regulation and do not have any health-related classifications.

ROCKWOOL insulation products do not contain flame retardants and blowing agents, and are proven not to have a negative impact on the indoor environment.

---

<sup>6</sup> Recent studies (Testing done at Danish Technical Institute (DTI) in 2023; FIW, Durability Project Mineral Wool (2016), Chapter 4.3 "Roof insulation" Gentofte (Denmark), p. 14) have shown that if we compare the thermal property (lambda value) of our products after more than 65 years of service, the value is still the same. ROCKWOOL products have no aging effect and deliver a constant performance without suffering degradation.

ROCKWOOL stone wool does not contain SVHC or CMR substances (Carcinogen, Mutagen, Reprotoxic) under REACH >0,1%. The products do not contain CLP classified substances >0,1%.

The non-hazardous nature of ROCKWOOL stone wool products leads, as regards their disposal, to the attribution of the European Waste Catalog code (EWC) 17 06 04. Compliance with Note Q is guaranteed through the Euceb certificate.

## Scaling factors and variability of results

The scaling factors presented in the table below can be used to estimate the environmental performance indicators for each product in the product group from the LCA results obtained for the representative product. Some of the products included in this EPD can be delivered with optional facing (e.g. *Fixrock Eco Alu*). For additional information regarding facings, contact [asistencia.tecnica@rockwool.com](mailto:asistencia.tecnica@rockwool.com).

$$\text{Environmental impact per m}^2 \text{ product X, unfaced} = \text{Environmental impact per m}^2 \text{ reference product} \times \text{Scaling factor}$$

The variability of results between products included in this EPD, as reflected on the Scaling Factors, can reach up to 2,12 times the Functional Unit of the Reference product, equivalent to 112%.

Product Name	Scaling factor	Variability of the results compared to the Functional Unit
Fixrock Eco	1,00	
Fixrock Eco Alu <sup>2</sup>	1,00	0%
Fixrock Eco Kraft <sup>2</sup>	1,00	0%
Fixrock Plus	1,59	59%
Fixrock Plus Alu <sup>2</sup>	1,59	59%
Fixrock Plus Kraft <sup>2</sup>	1,59	59%
Lusorock Fachada	1,69	69%
Panel 203	1,00	0%
Panel 211.652 <sup>2</sup>	1,70	70%
Panel 213	1,39	39%
Panel 221.652 <sup>2</sup>	2,12	112%
Rockband	1,35	35%
Rockband VN	1,35	35%

<sup>2</sup> Products available with optional facings. For facings information, contact [asistencia.tecnica@rockwool.com](mailto:asistencia.tecnica@rockwool.com)

<b>Product Name</b>	<b>Scaling factor</b>	<b>Variability of the results compared to the Functional Unit</b>
Rockbardage	1,59	59%
Rockbardage (solape derecho)	1,59	59%
Rockbardage VN	1,59	59%
Rockdry Plus	1,59	59%
Rocktop Plus	1,59	59%
Rocktop Plus vn <sup>2</sup>	1,59	59%
Sonorock Eco	1,04	4%
Sonorock Eco Alu <sup>2</sup>	1,04	4%
Sonorock Kraft <sup>2</sup>	1,04	4%
Sonorock Plus	1,59	59%
Sonorock Plus Alu <sup>2</sup>	1,59	59%
Sonorock Plus Kraft <sup>2</sup>	1,59	59%
Sonorock Plus vn <sup>2</sup>	1,59	59%
Ventirock Duo	1,67	67%
Ventirock Duo VN <sup>2</sup>	1,67	67%
Ventirock Eco	1,52	52%
Ventirock Energy	2,01	101%

---

<sup>2</sup> Products available with optional facings. For facings information, contact [asistencia.tecnica@rockwool.com](mailto:asistencia.tecnica@rockwool.com)

# Version history

Original version of the EPD published: 2025-12-18

Revision 1, 2026-01-07

Differences versus the previously published version: amended additional results section.

Revision 2, 2026-01-22

Scaling factors added in the additional environmental information section. Additional information on facings was removed.

## Abbreviations

Abbreviation	Definition
<b>General Abbreviations</b>	
CEN	European Committee for Standardization
Ecoinvent	Background LCA database referenced (Ecoinvent v3.10)
EN	European Norm (Standard)
EPD	Environmental Product Declaration
GaBi	LCA software (LCA for Expert (GaBi) version referenced)
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
LCA FE	LCA For Experts (software/database name)
PCR	Product Category Rules
<b>Environmental Impact Indicators (EN 15804)</b>	
ADP-fossil	Abiotic depletion for fossil resources potential
ADP-minerals&metals	Abiotic depletion potential for non-fossil resources
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
ETP-c	Human toxicity, cancer effects
ETP-fw	Ecotoxicity (freshwater)
FW	Use of net fresh water
GWP-biogenic	Global Warming Potential biogenic
GWP-fossil	Global Warming Potential fossil fuels
GWP-GHG	Global Warming Potential - Greenhouse gas
GWP-luluc	Global Warming Potential land use and land use change
HTP-c	Human toxicity, cancer effects
HTP-nc	Human toxicity, non-cancer effects

<b>Abbreviation</b>	<b>Definition</b>
IRP	Ionising radiation, human health
ODP	Depletion potential of the stratospheric ozone layer
PM	Particulate matter emissions
POCP	Formation potential of tropospheric ozone
SQP	Land use related impacts / soil quality
WDP	Water (user) deprivation potential, deprivation-weighted water consumption
<b>Resource Use Indicators</b>	
NRSF	Use of non-renewable secondary fuels
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
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
RSF	Use of renewable secondary fuels
SM	Use of secondary material
<b>Lifecycle Stages / Modules</b>	
A1	Raw material supply
A2	Transport
A3	Manufacturing
A4	Transport to site
A5	Construction / Installation
B1	Use
B2	Maintenance
B3	Repair
B4	Replacement
B5	Refurbishment
B6	Operational energy use
B7	Operational water use
C1	Deconstruction / Demolition
C2	Transport to waste processing
C3	Waste processing
C4	Disposal
D	Reuse-Recovery-Recycling potential
<b>Other Relevant Terms</b>	
CLP	Classification, Labelling and Packaging Regulation
CMR	Carcinogen, Mutagen, Reprotoxic
CTUe	Comparative Toxic Unit for ecosystems
CTUh	Comparative Toxic Unit for humans
EU / ES	Geographical region codes

<b>Abbreviation</b>	<b>Definition</b>
EUROSTAT	Data source used for packaging waste shares
EWC	European Waste Catalogue
FAV	Artificial Glass Fibres
HVAC	Heating, Ventilation and Air Conditioning
kBq U235 eq.	kilobecquerel Uranium-235 equivalent
kg	Kilogram
kg C	kilogram of Carbon
kg CFC 11 eq.	kilogram CFC-11 equivalent
kg CO <sub>2</sub> eq.	kilogram Carbon Dioxide equivalent
kg N eq.	kilogram Nitrogen equivalent
kg NMVOC eq.	kilogram Non-Methane Volatile Organic Compounds equivalent
kg P eq.	kilogram Phosphorus equivalent
kg Sb eq.	kilogram Antimony equivalent
kWh	Kilowatt-hour
m <sup>2</sup>	Square meter
m <sup>3</sup>	Cubic meter
m <sup>2</sup> K/W	Meter Squared Kelvin per Watt
MJ	Mega Joules
MW	Mineral wool
n.e.c.	not elsewhere classified
Note Q	Regulatory note referenced regarding EWC classification
R <sub>b</sub>	Thermal resistance (R-value)
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RSL	Reference Service Life
SVHC	Substances of Very High Concern

# References

## **International EPD® System**

General Programme Instructions of the International EPD® System. Version 5.0.1

PCR 2019:14, Version 2.0.1, UN CPC 37990

c-PCR-005 Thermal insulation products (EN 16783: 2024) Version 1.0.0, 2025-04-08

## **LCA FE**

LCA For Experts: Sphera Solutions GmbH: LCA FE, Version 10.9.0.20, life cycle inventory data documentation content version 2023.2

## **EN 16783**

EN 16783:2024. Thermal insulation products - Product category rules (PCR) for factory made and in-situ formed products for preparing environmental product declarations.

## **ISO 21930**

ISO 21930:2017. Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services

## **ISO 14021**

ISO 14021:2016. Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling)

## **ISO 14025**

DIN EN ISO 14025:2011. Environmental labels and declarations – Type III environmental declarations – Principles and procedures

## **EN 15804**

EN 15804:2012+A2 2019/AC:2021 Sustainability of construction works – Environmental Product Declarations – Core rules for the product category of construction products.

**ROCKWOOL A/S**  
Hovedgaden 584C  
DK-2640 Hedehusene  
Denmark

