

Environmental Product Declaration

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

Thermal Insulation Products

Low density range from Saint-Eloy-les-Mines, FR

from

ROCKWOOL® Italia S.p.A.

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

General information

Programme information

Programme:	The International EPD® System
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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 1.2.5, UN CPC 37990
c-PCR-005 Thermal insulation products (EN 16783: 2017) Version: 2019-12-20

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

Life Cycle Assessment (LCA)

LCA accountability: Nikolaos Emmanouil (nikolaos.emmanouil@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 (valentina.bisinella@rockwool.com)

Third-party verification: Bureau Veritas Italia S.p.A is an approved certification body accountable for third-party verification. Bureau Veritas Italia S.p.A. is accredited to the validation and verification of environmental claims activity in accordance with ISO/IEC 17029:2019 and EN ISO 14065:2020.

Third-party verifier is accredited by: Accredia, accreditation number VV n° 00031.

*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 must:

- 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 equivalent system boundaries and descriptions of data;
- apply equivalent data quality requirements, methods of data collection, and allocation methods;
- apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors);
- have equivalent content declarations;
- be valid at the time of comparison.

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



Company information

Owner of the EPD
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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 9001, ISO 14001, ISO 50001, ISO 45001, all referred to the production site.

Name and location of production site
ROCKWOOL FRANCE S.A.S., 111 rue du Château des Rentiers, 75013 Paris (FR) at the production site located in Saint Eloy les Mines, Z.I. Puits du Manoir, 63700 (FR).



Product information

Product name

This EPD is covering numerous ROCKWOOL products, destined to Italian market.
This EPD is intended to be available to ROCKWOOL Italia S.p.A. customers and can also be used in other markets that receive products from the factory in Saint Eloy les Mines, excluded France due to different EPD requirements.
The reference product name is Rockmur Kraft (>40 mm).

Product Name	Weight (kg/m²,R=1m²K/W)
Rockmur Kraft* (> 40 mm)	1,1
305654*	1,7
dB Rock	1,7
Deltarock	1,7
Fieltro 128 - Rocklim 128*	0,9
Jetrock 2	1,1
Le Flocon 2	1,9
Le Flocon 3	1,9
Mb Rock	1,7
Mb Rock Pro	1,4
Rockbardage (Solape Simétrico)	1,7
Rockbardage nu	1,7
Rockbardage nu Energy	1,7
Rockbardage nu Evolution	1,7
Rockbardage Reno	1,7
Rockcalm	1,5
Rockcomble Evolution	1,7
Rockcomble Flex	1,7
Rockcomble kraft*	1,1
Rockcomble nu	1,1
Rockfacade	1,3
Rockfon Plafolaine Feu*	1,1
Rockglace*	1,4
Rockin L	2,0
Rockmur kraft* (≤ 40 mm)	1,4
Rockmur nu (> 40 mm)	1,1
Rockmur nu (≤ 40 mm)	1,4
Rockplus kraft*	1,7
Rockplus nu	1,7

Product Name	Weight (kg/m^2,R=1m^{2}K/W)
Rocksilence	1,7
Rockspot	1,4
Roulrock alu*	0,9
Roulrock kraft perforé*	0,9
Roulrock kraft*	0,9
Sorock	1,7
Souface Alu*	1,7
Toitrock kraft*	0,9
Torock	1,4

* Products available with optional facings. For facings information, contact ufficio.tecnico@rockwool.it

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 (MW) products – Specification
- EN 14064-1:2010 Thermal insulation products for buildings – In-situ formed loose-fill mineral wool (MW) products – Part 1: Specification for the loose-fill products before installation.

Note: Product Le Flocon 2 is not covered by a product standard.

Product characteristics

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.it 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.

Product description
This EPD documents the potential environmental impacts of 1m^2 of ROCKWOOL stone wool insulation with a thermal resistance (R-value) equal to 1 m^{2}K/W. 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.

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 General Building Insulation (GBI), roofs, façades and HVAC. The faced and unfaced synthetic resin-bonded stone wool materials described in this declaration are produced in the form of slabs, loose wool or rolls for use in building applications in the density range from 23 up to 55 kg/m^3.

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.

The insulation properties of stone wool are 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.

The packaging is included in the assessment.

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)

Geographical scope
This EPD is intended to be available to ROCKWOOL Italia S.p.A. customers.
This EPD can also be used in other markets that receive products from the factory in Saint Eloy les Mines, excluded France due to different EPD requirements.

For modules A1 and A2 European data was considered, for the manufacturing module A3 specific data from France was used. For the rest of the modules, after the manufacturing stage, Italian data was considered.

LCA information

Functional unit / declared unit	1m^2 of ROCKWOOL stone wool insulation with a thermal resistance (R-value) equal to 1 m^{2}K/W
Density of reference product	32 kg/m^3
Thickness of reference product	35 mm
Scope	Cradle to Grave
Reference service life	60 years
Energy used for manufacturing process	French electricity residual mix and non-renewable energy materials

Functional unit / declared unit

This EPD documents the potential environmental impacts of 1m^2 of ROCKWOOL® stone wool insulation with a thermal resistance (R-value) equal to 1 m^{2}K/W.

A product of 32 kg/m^3 density and a notional thickness of 35 mm thick 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 60 years reference service life or as long as the insulation is part of the building.

Time representativeness

Plant production data for the complete year 2022.

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

The data which is used to carry out the LCA calculations contains >90% specific data and below 10% generic data.

Database and LCA software used

The LCA model, the data aggregation and environmental impacts are calculated with the software LCA for Expert (GaBi) 10.7 and its content version 2023.1.

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

Description of system boundaries

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.

Modules A1, A2 and A3 are be 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	776 km
Type of vehicle used for transport	Truck Euro 6 (20-26 t / 17,3 t payload)
Truck capacity utilisation (including 30% empty returns)	0,3

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 Italian market (EUROSTAT 2020).

Parameter	Value
Auxiliaries	0
Water consumption	0
Electricity consumption	0
Other energy carriers	0
Material loss	2%
Cardboard and paper packaging	86% recycling, 7% incineration, 7% landfill
Plastic Packaging	44% recycling, 45% incineration, 12% landfill
Wood packaging	47% recycling, 3% incineration, 50% landfill

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.

For the use-stage **B1-B7**, the impacts in stages B2-87 are zero.
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 (87) during use of the building related to the building fabric.

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

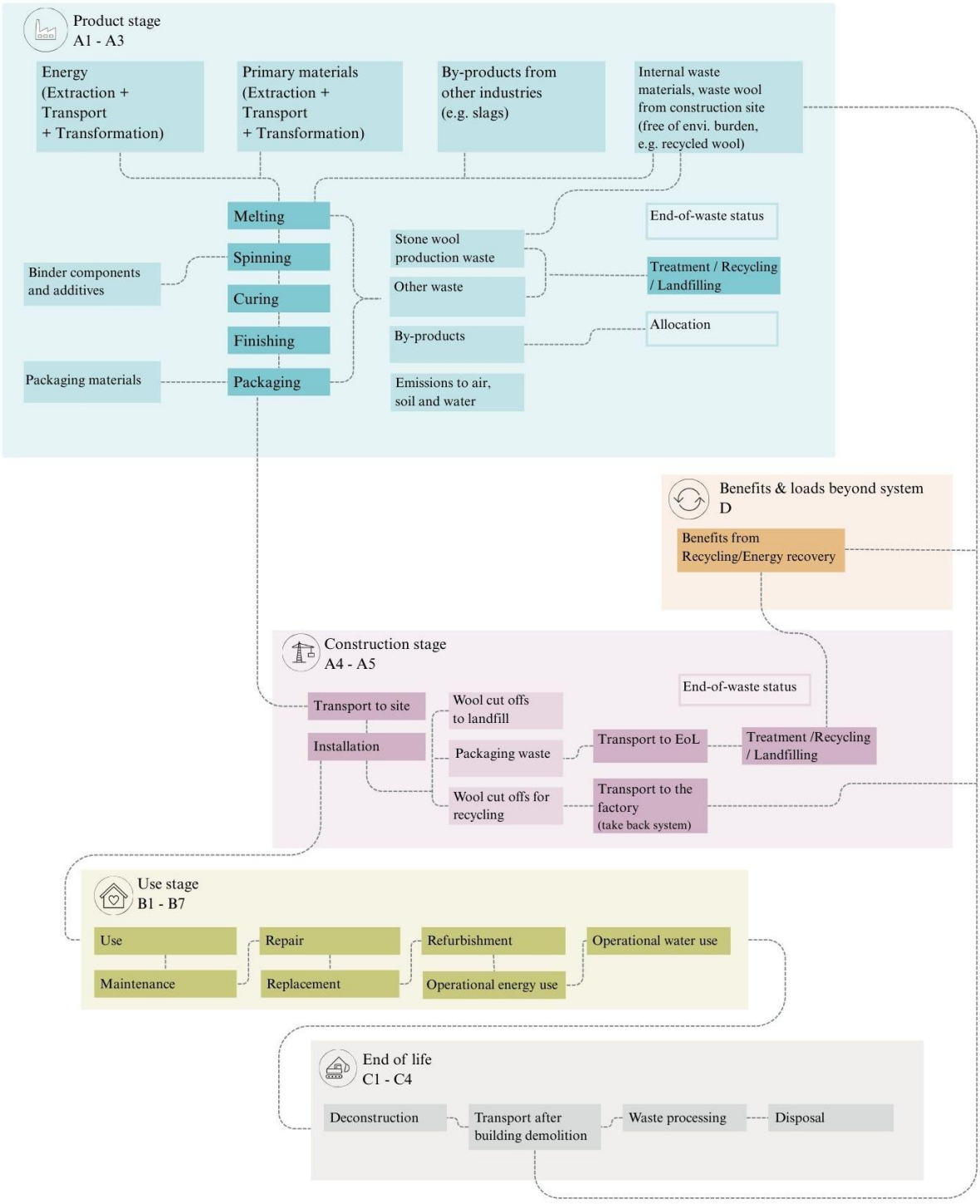
- C1 de-construction, demolition;
- C2 transport to waste processing
- C3 waste processing for reuse, recovery and/or recycling
- C4 disposal

These stages also include provision and all transport, provision of all materials, products and related energy and water use. Manual deconstruction is assumed for C1, therefore no impacts are assigned. The scenario applied for module C2 can be seen in the table below. For module C4 a scenario of 100% landfill is assumed.

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

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.

Below a schematic representation of the system boundaries is shown.

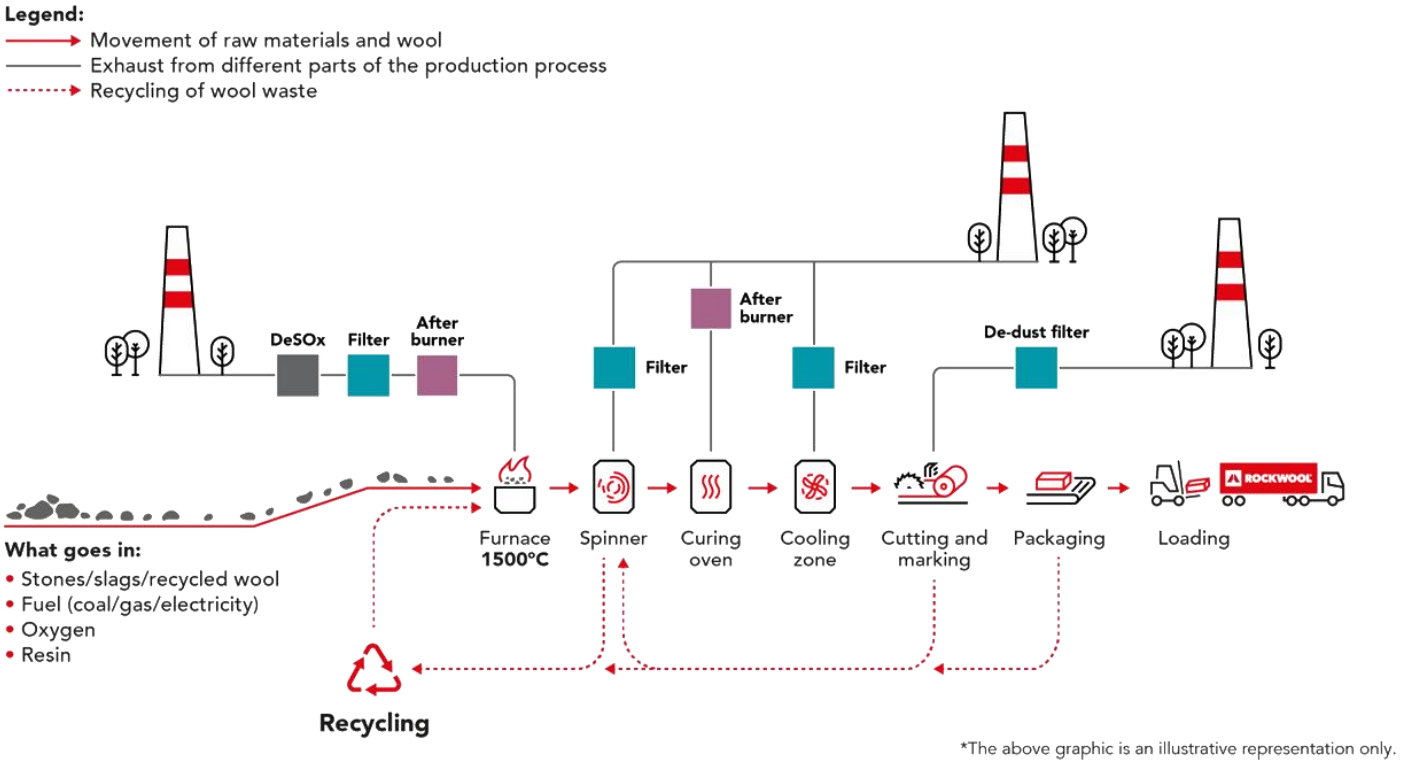

Product stage
A1 - A3
Energy (Extraction + Transport + Transformation)
Primary materials (Extraction + Transport + Transformation)
By-products from other industries (e.g. slags)
Internal waste materials, waste wool from construction site (free of envi. burden, e.g. recycled wool)
Melting
Spinning
Curing
Finishing
Packaging
Binder components and additives
Packaging materials
Stone wool production waste
Other waste
By-products
Emissions to air, soil and water
End-of-waste status
Treatment / Recycling / Landfilling
Allocation
Benefits & loads beyond system
D
Benefits from Recycling/Energy recovery
Construction stage
A4 - A5
Transport to site
Installation
Wool cut offs to landfill
Packaging waste
Wool cut offs for recycling
End-of-waste status
Transport to EoL
Treatment /Recycling / Landfilling
Transport to the factory (take back system)
Use stage
B1 - B7
Use
Maintenance
Repair
Replacement
Refurbishment
Operational energy use
Operational water use
End of life
C1 - C4
Deconstruction
Transport after building demolition
Waste processing
Disposal

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.



*The above graphic is an illustrative representation only.

Data quality
The quality of the data of this specific EPD is assessed as good and appropriate.
Primary data are collected consistently from production site in Saint Eloy les Mines, France, in the reference year 2022 and represent stabilized production.
Generic data is from LCA FE (GaBi) version 10.7, database content 2023.1

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.

	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	EU	EU	FR	IT	IT	IT	IT	IT	IT	IT	IT	IT	IT	IT	IT	IT	IT
Specific data used		>90%															
Variation – products		>10%															
Variation – sites		0%															

Content information

Product components	Weight %	Pre-consumer material Weight %	Post-consumer material Weight %
Stone wool	62%	0	0
Recovered metallurgical slags	33%	100%	0
Binder	5%	0	0
Mineral oil	<1%	0	0
Total	100%	100%	0

Packaging materials	Weight (kg)	Weight % (versus the product)
Wooden pallet	0,0606	88%
Cardboard/paper	0,0006	1%
Plastic film	0,0078	11%
Total	0,0690	100%

The materials in the table above represent the quantities needed to produce the declared unit.
The percentage of binder in the final ROCKWOOL products is on average 0-5%.

Results of the environmental performance indicators

The results are calculated for the declared product of 1m^2 Rockmur Kraft with density of 32 kg/m^3 and thickness 35mm for R=1 m^{2}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_2 eq.	9,31E-01	1,47E-01	1,68E-01	0,00E+00	0,00E+00	3,38E-03	0,00E+00	3,61E-02	-7,59E-02
GWP-fossil	kg CO_2 eq.	1,06E+00	1,45E-01	4,08E-02	0,00E+00	0,00E+00	3,39E-03	0,00E+00	1,69E-02	-2,22E-02
GWP-biogenic	kg CO_2 eq.	-1,28E-01	0,00E+00	1,27E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,92E-02	-5,36E-02
GWP-LULUC	kg CO_2 eq.	6,15E-04	1,33E-03	4,37E-05	0,00E+00	0,00E+00	3,11E-05	0,00E+00	4,97E-05	-2,90E-05
ODP	kg CFC 11 eq.	1,16E-09	1,26E-14	2,75E-11	0,00E+00	0,00E+00	2,95E-16	0,00E+00	6,57E-17	-1,52E-13
AP	mol H^+ eq.	8,23E-03	1,89E-04	1,90E-04	0,00E+00	0,00E+00	4,23E-06	0,00E+00	1,21E-04	-6,75E-05
EP-freshwater	kg P eq.	7,18E-06	5,24E-07	2,88E-07	0,00E+00	0,00E+00	1,22E-08	0,00E+00	2,84E-08	-6,33E-08
EP-marine	kg N eq.	8,46E-04	6,63E-05	4,23E-05	0,00E+00	0,00E+00	1,47E-06	0,00E+00	3,14E-05	-2,03E-05
EP-terrestrial	mol N eq.	2,36E-02	7,98E-04	5,69E-04	0,00E+00	0,00E+00	1,77E-05	0,00E+00	3,44E-04	-2,22E-04
POCP	kg NMVOC eq.	1,89E-03	1,63E-04	8,27E-05	0,00E+00	0,00E+00	3,65E-06	0,00E+00	9,49E-05	-6,26E-05
ADP-minerals&metals*	kg Sb eq.	1,38E-07	9,28E-09	3,29E-09	0,00E+00	0,00E+00	2,17E-10	0,00E+00	1,60E-09	-2,26E-09
ADP-fossil*	MJ	1,49E+01	1,96E+00	4,02E-01	0,00E+00	0,00E+00	4,57E-02	0,00E+00	2,25E-01	-4,64E-01
WDP*	m^3	1,00E-01	1,66E-03	4,03E-03	0,00E+00	0,00E+00	3,88E-05	0,00E+00	1,81E-03	-7,34E-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[1]	kg CO_2 eq.	1,06E+00	1,47E-01	4,08E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

[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 CO_2 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	8,60E-01	1,38E-01	5,17E-02	0,00E+00	0,00E+00	3,24E-03	0,00E+00	3,02E-02	-6,84E-01
PERM	MJ	1,37E+00	0,00E+00	-9,22E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,23E+00	1,38E-01	4,25E-02	0,00E+00	0,00E+00	3,24E-03	0,00E+00	3,02E-02	-6,84E-01
PENRE	MJ	1,46E+01	1,96E+00	3,87E-01	0,00E+00	0,00E+00	4,58E-02	0,00E+00	2,25E-01	-4,64E-01
PENRM	MJ	3,77E-01	0,00E+00	7,55E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,49E+01	1,96E+00	3,94E-01	0,00E+00	0,00E+00	4,58E-02	0,00E+00	2,25E-01	-4,64E-01
SM	kg	2,95E-03	0,00E+00	5,91E-05	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
NRSF	MJ	4,66E-01	0,00E+00	9,31E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	4,69E-03	1,52E-04	1,53E-04	0,00E+00	0,00E+00	3,56E-06	0,00E+00	5,54E-05	-1,91E-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

Waste indicators

Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	2,54E-07	7,25E-12	5,25E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	7,40E-02	2,83E-04	4,54E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	1,89E-03	2,53E-06	4,08E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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	3,66E-02	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	5,12E-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	5,84E-02	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	2,37E-07	1,27E-09	4,98E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
IRP*	kBq U235 eq.	4,85E-01	3,66E-04	1,02E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ETP – fw**	CTUe	5,45E+00	1,36E+00	2,18E-01	4,03E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
HTP – c**	CTUh	7,86E-10	2,78E-11	1,87E-11	2,96E-15	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
HTP – nc**	CTUh	6,25E-09	1,48E-09	4,29E-10	3,66E-17	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
SQP**	-	2,36E+01	8,16E-01	5,05E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+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									

**Disclaimer: IRP: This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.*

***Disclaimer: ETP-fw, HTP-nc, HTP-c, SQP: The results of these 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.*

Biogenic Carbon content

Results per declared unit

Indicator	Unit	Value
Biogenic carbon content in product	Kg C	5,23E-03
Biogenic carbon content in packaging	Kg C	3,05E-02

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

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[1]. 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[2], 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.



[1] 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
[2] https://www.bbc.com/future/article/20211215-the-buildings-made-from-rubbish

Recycled, recovered and by-product content for Italian CAM

Recycled, recovered and by-product content are expressed quantitatively as a percentage, calculated as shown below.

$$X\,(\%) = \frac{A}{P} \times 100$$

Where:

X is the recycled/recovered/by-product content, expressed as a percentage;

A is the mass of recycled/recovered/by-product material;

P is the mass of product.

Recycled content	Recovered content	External by-product content	Internal by-product content
9%	0%	26%	0%

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 lifetime of the building.[3]

Tests from old construction sites show that ROCKWOOL stone wool insulation products have retained their insulation characteristics and properties for more than **65 years**.[4]

[3] 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"

[4] 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.

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.
- **Non-adhesive installation:** Typically, stone wool products are installed using mechanical fasteners, friction fittings, or dry construction methods rather than adhesives. This installation method ensures that the insulation can be removed easily and quickly.
- **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.

In order 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.

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 (CER – Catalogo Europeo dei Rifiuti) code 17 06 04. Compliance with Note Q must be verified with an evaluation of the documentation relating to the source material of the waste.

If there is no documentary analysis that certifies that the product complies with Note Q, the waste is classified as a precaution with the code EWC 17 06 03.

In Italy, in 2016 the document "Artificial Glass Fibres (FAV) – Guidelines for the application of the legislation relating to the risks of exposure and prevention measures for the protection of health" was approved. The document contains in-depth information regarding the identity and properties of artificial vitreous fibres, their classification according to the regulatory aspects in force, in addition to the indications operational for the implementation and disposal and management of waste containing FAV. The national legislation on hazard classification derives from this document.

According to the current Italian regulation, the waste consisting of mineral wool can be disposed of in landfills for non-hazardous waste, regardless of their classification as dangerous or non-hazardous. The waste is directly within the landfill in dedicated cells, made with the same criteria used for inert waste. Dispose the packaging materials in accordance with local regulations.

For more information visit https://www.rockwool.com/it/download-strumenti/approfondimento-salute-e-sicurezza/

More details about ROCKWOOL's environmental work

https://www.rockwool.com/it/chi-siamo/sostenibilita/

https://www.rockwool.com/group/about-us/sustainability/

Scaling factors

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. *Roulrock kraft).* For additional information regarding facings, contact ufficio.tecnico@rockwool.it

Environmental impact per m² product X, unfaced	=	Environmental impact per m² reference product	x	Scaling factor

Product Name	**Scaling factor**	**Variability of the results compared to the reference product**
Rockmur kraft* (> 40 mm)	1	
305654*	1,2	20%
dB Rock	1,5	50%
Deltarock	1,5	50%
Fieltro 128 - Rocklim 128*	0,8	20%
Jetrock 2	0,9	10%
Le Flocon 2	1,7	70%
Le Flocon 3	1,7	70%
Mb Rock	1,5	50%
Mb Rock Pro	1,3	30%
Rockbardage (Solape Simétrico)	1,5	50%
Rockbardage nu	1,5	50%
Rockbardage nu Energy	1,5	50%
Rockbardage nu Evolution	1,5	50%
Rockbardage Reno	1,5	50%
Rockcalm	1,3	30%
Rockcomble Evolution	1,5	50%
Rockcomble Flex	1,5	50%
Rockcomble kraft*	1,0	0%
Rockcomble nu	1,0	0%
Rockfacade	1,2	20%
Rockfon Plafolaine Feu*	1,0	0%
Rockglace*	1,2	20%
Rockin L	1,8	80%

Product Name	Scaling factor	Variability of the results compared to the reference product
Rockmur kraft* (≤ 40 mm)	1,3	30%
Rockmur nu (> 40 mm)	1,0	0%
Rockmur nu (≤ 40 mm)	1,3	30%
Rockplus kraft*	1,5	50%
Rockplus nu	1,5	50%
Rocksilence	1,5	50%
Rockspot	1,3	30%
Roulrock alu*	0,8	20%
Roulrock kraft perforé*	0,8	20%
Roulrock kraft*	0,8	20%
Sorock	1,5	50%
Souface Alu*	1,5	50%
Toitrock kraft*	0,8	20%
Torock	1,2	20%

* Products available with optional facings. For facings information, contact ufficio.tecnico@rockwool.it

Differences versus previous versions

On 16-06-2025 the EPD was modified adding clarification of the type of EPD and the geographical scope and removing the information about ROCKWOOL decarbonisation commitment. The list of products was modified, a paragraph on disassemblability was included.

On 27-01-2026 the EPD was modified to reflect the change in ownership, from ROCKWOOL Italia S.p.A. to ROCKWOOL A/S. The EPD ownership was updated in accordance with GPI 5, section 7.4.3. The list of products was modified, the list of abbreviations was added and the annex with the environmental impacts of the facings was removed. The scaling factors were moved to the additional environmental information section.

On 07-10-2026 the EPD was updated with modified product list and editorial changes in the text.

Abbreviations

Abbreviation	Definition
General Abbreviations	
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
Environmental Impact Indicators (EN 15804)	
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

Abbreviation	Definition
HTP-nc	Human toxicity, non-cancer effects
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
Resource Use Indicators	
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
Lifecycle Stages / Modules	
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
Other Relevant Terms	
CLP	Classification, Labelling and Packaging Regulation
CMR	Carcinogen, Mutagen, Reprotoxic
CTUe	Comparative Toxic Unit for ecosystems

Abbreviation	Definition
CTUh	Comparative Toxic Unit for humans
EU / ES	Geographical region codes
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_2 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^2	Square meter
m^3	Cubic meter
m^2K/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_D	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 4.0.
PCR 2019:14, Version 1.2.5, UN CPC 37990
c-PCR-005 Thermal insulation products (EN 16783: 2017) Version: 2019-12-20

LCA FE
LCA For Experts: Sphera Solutions GmbH: LCA FE, Version 10.7.1.28, life cycle inventory data documentation content version 2023.1

EN 16783:2017
Thermal insulation products - Product category rules (PCR) for factory made and in-situ formed products for preparing environmental product declarations.

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 14025:2011-10: Environmental labels and declarations – Type III environmental declarations – Principles and procedures

EN 15804
EN 15804:2012-04+A2 2013: Sustainability of construction works – Environmental Product Declarations – Core rules for the product category of construction products.

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

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

LCA BACKGROUND REPORT
Product specific Information for EPD publication. Documentation of case specific assumptions and data requirements for products manufactured in the manufacturing facility of Saint-Eloy-les-Mines, France, for Italian market. Version 1, 2023-10-20.

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