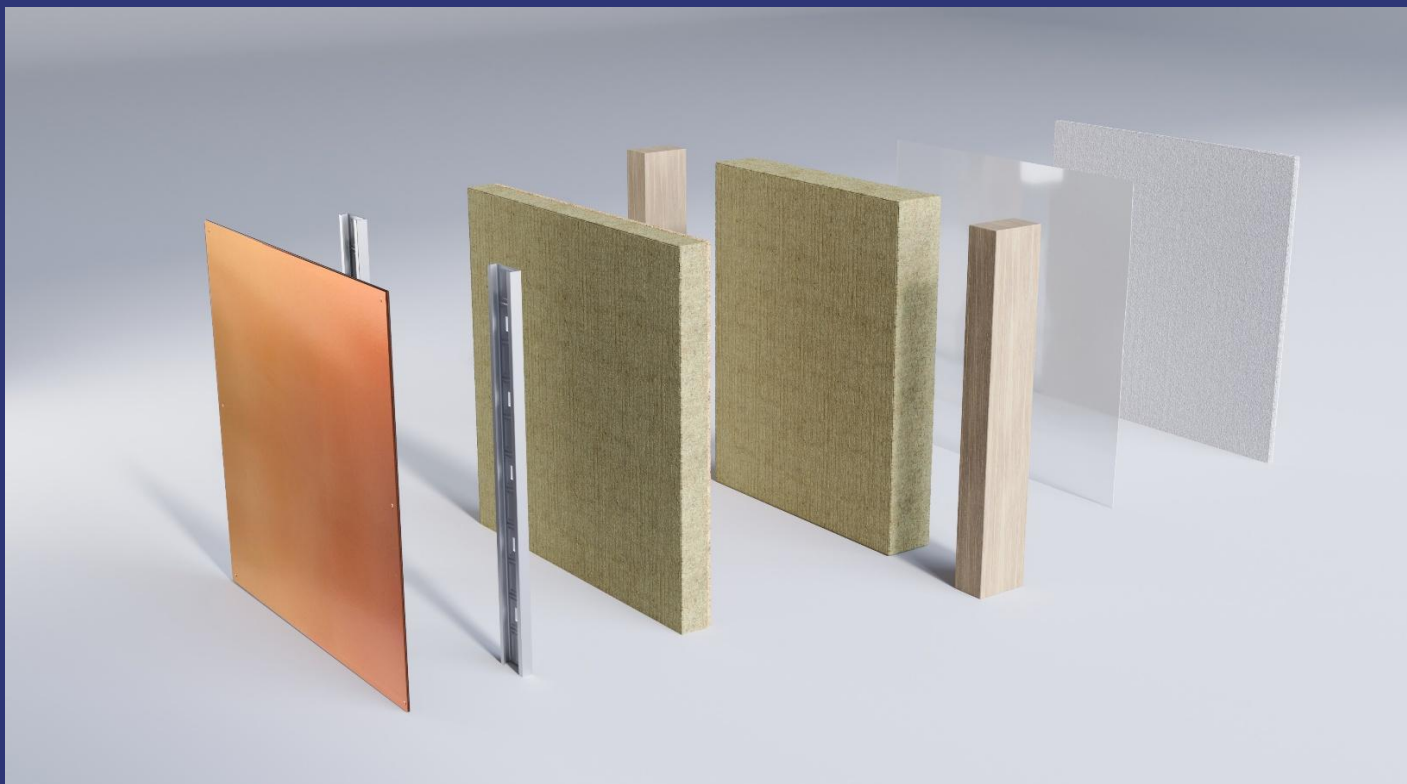


**Environmental
Product
Declaration**

According to EN15804+A2 (+indicators A1)

This declaration is for:
Rockzero W-OW

Provided by:
ROCKWOOL B.V.



MRPI® registration:
1.1.00903.2025

Program operator:
Stichting MRPI®
Publisher:
Stichting MRPI®
www.mrpi.nl

Date of first issue:
25-6-2025
Date of this issue:
25-6-2025
Expiry date:
25-6-2030

COMPANY INFORMATION

ROCKWOOL B.V.

Postbus 1160

6040 KD

Roermond

Netherlands

+31 (0)475 35 36 16

rob.duisters@rockwool.com

<https://www.rockwool.nl>

MRPI® REGISTRATION

1.1.00903.2025

DATE OF THIS ISSUE

25-6-2025

EXPIRY DATE

25-6-2030

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Gert-Jan Vroege, Eco Intelligence. The LCA study has been done by Agnes Stehmann-Schuermans & Bob Roijen, SGS INTRON B.V.. The certificate is based on an LCA-dossier according to EN15804+A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

PROGRAM OPERATOR

Stichting MRPI®

Kingsfordweg 151

1043 GR

Amsterdam

PRODUCT

Rockzero W-OW

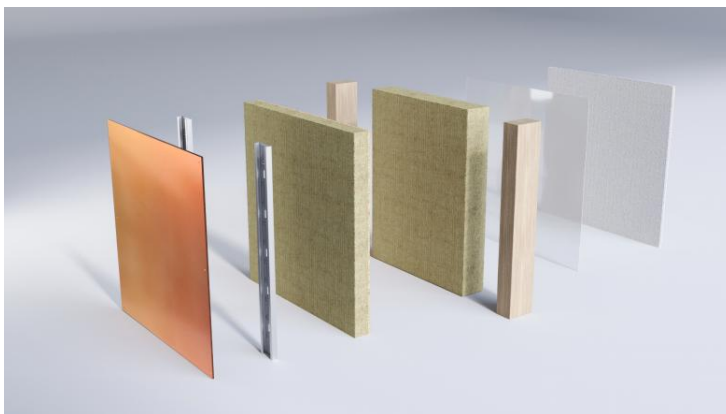
DECLARED UNIT / FUNCTIONAL UNIT

1 Surface area (m2)

DESCRIPTION OF PRODUCT

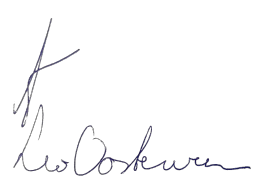
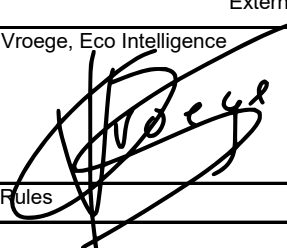
Rockzero W-OW is part of Rockzero W, a clad non-bearing building system. The basis of Rockzero W is a slim timber frame with ROCKWOOL insulation between it. The inside of Rockzero W is provided with a vapour barrier and a hard finishing layer; on the outside, Rockzero W-OW is attached to the timber frame. A wind stopper is not necessary with Rockzero W. Rockzero W-OW consists of stone wool glued to OSB board, resulting in an RD-value of 4.7 m²K/W for Rockzero W.

VISUAL PRODUCT



MORE INFORMATION

<https://prefab.rockwool.com/nl/bouwsystemen/Rockzero-wood-gevelvullend-bouwstelsel/>

Ing. L. L. Oosterveen MSc. MBA Managing Director MRPI	DEMONSTRATION OF VERIFICATION
	CEN standard EN15804 serves as the core PCR [1]
	Independent verification of the declaration and data according to EN15804+A2 (+indicators A1) Internal: External: X Third party verifier: Gert-Jan Vroege, Eco Intelligence 
	[1] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION

The base of Rockzero W is a slim (140 mm) timber frame construction. Between the studs ROCKWOOL insulation is applied. On the inside, a vapour barrier and a dry wall finishing board is applied, and on the outside Rockzero W-OW is fixated. Rockzero W-OW is ROCKWOOL stone wool glued on OSB. Rockzero W wall elements are always custom-made elements and have dimensions up to 24 m² per element. The results in this LCA are calculated per m². Rockzero W can be applied in several applications, for example load bearing and non-load bearing wall elements.

This document applies to the 'W-OW' part only: ROCKWOOL stone wool glued on the OSB. Constructions (wooden frame, metal parts, etc.), finishes and any auxiliary materials for installation are not included in this study.

The reference service life of Rockzero wall elements is the same as the default service life of a residential building, and hence defined as 75 years in accordance with the NMD Assessment method. This is a scenario based on an assumption for a default building. Different buildings have different service lives; some may be longer while others may be shorter. The components from the Rockzero system do not have to be replaced in the 75-year scenario.

Component (> 1%)	(kg)
ROCKWOOL stone wool board	5,6
OSB	9
Glue	0,2
Packaging, return pallet	0,77
Packaging, PE foil	0,03

SCOPE AND TYPE

Rockzero W-OW is produced in the ROCKWOOL plant in Saint-Éloy-les-Mines (SEL) in France. This EPD is specific for stone wool from this production location. Data for OSB and glue are generic.

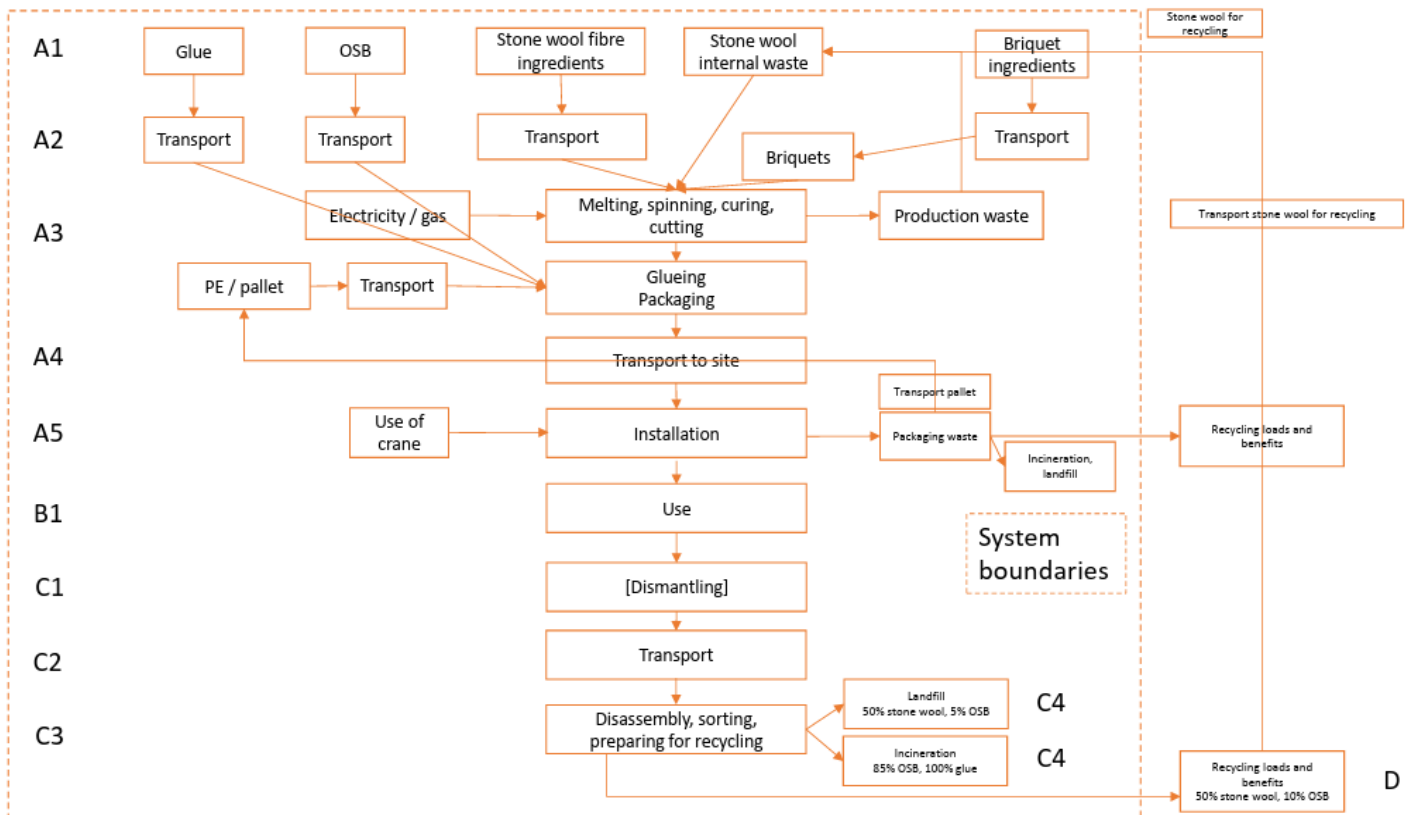
In this LCA, application in the Netherlands is assumed for the scenarios in Modules A4 (transport to site), A5 (construction), B (use) and C-D (end-of-life).

The LCA is calculated with Simapro 9, NMD 'basisprocessendatabase' v3.9 and ecoinvent v3.6. The LCIA is calculated with EF3.0.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse - Recovery - Recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
x	x	x	x	x	x	x	x	x	x	ND	ND	x	x	x	x	x

X = Modules Assessed

ND = Not Declared



REPRESENTATIVENESS

This EPD is fully technological and geographical representative for the specific production location in Saint-Éloy-les-Mines, France. Data are used from the specific production line of stone wool for Rockzero W-OW.

ENVIRONMENTAL IMPACT per functional unit or declared unit (indicators A1)

Unit		A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	9,93E-05	6,04E-05	2,73E-05	1,87E-04	5,82E-05	1,33E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	9,23E-07	2,48E-06	1,03E-07	3,83E-06	-7,55E-06
ADPF	MJ	1,05E+02	3,32E+01	3,33E+01	1,71E+02	3,14E+01	8,42E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	8,17E+00	1,47E+00	4,52E-01	3,26E+00	-6,58E+00
GWP	kg CO2 eq.	5,65E+00	2,21E+00	1,80E+00	9,66E+00	2,09E+00	6,82E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	5,96E-01	9,66E-02	2,94E-02	3,42E-01	-4,13E-01
ODP	kg CFC11 eq.	7,39E-07	4,05E-07	8,73E-07	2,02E-06	3,83E-07	1,06E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	1,03E-07	1,79E-08	1,47E-09	3,75E-08	-1,37E-07
POCP	kg ethene eq.	8,79E-03	1,12E-03	1,36E-03	1,13E-02	1,04E-03	6,12E-04	1,54E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	6,07E-04	1,41E-05	5,57E-06	3,56E-04	-1,56E-03
AP	kg SO2 eq.	2,91E-02	7,08E-03	1,47E-02	5,09E-02	4,97E-03	4,58E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	4,49E-03	4,16E-04	8,14E-05	2,33E-03	-9,85E-03
EP	kg (PO4) ³ eq.	6,42E-03	1,30E-03	2,61E-03	1,03E-02	7,70E-04	1,04E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	1,02E-03	7,01E-05	1,27E-05	5,57E-04	-3,19E-03

Toxicity indicators and ECI (Dutch market)

HTP	kg DCB eq.	3,32E+00	8,80E-01	7,58E-01	4,96E+00	8,39E-01	2,31E-01	2,46E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	2,21E-01	4,13E-02	4,98E-03	2,74E-01	-8,79E-01
FAETP	kg DCB eq.	8,52E-02	2,44E-02	2,63E-02	1,36E-01	2,32E-02	4,09E-03	2,44E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	3,07E-03	1,21E-03	1,23E-04	8,91E-03	-2,01E-02
MAETP	kg DCB eq.	1,52E+02	9,29E+01	6,58E+01	3,11E+02	8,88E+01	1,26E+01	4,82E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	1,07E+01	4,32E+00	5,85E-01	4,31E+01	-2,59E+01
TETP	kg DCB eq.	2,06E-02	3,12E-03	2,46E-02	4,83E-02	2,99E-03	3,91E-04	2,78E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	3,63E-04	1,46E-04	1,18E-04	5,21E-04	-5,44E-03
ECI	euro	8,01E-01	2,45E-01	2,54E-01	1,30E+00	2,21E-01	8,58E-02	4,19E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	7,98E-02	1,15E-02	2,48E-03	6,17E-02	-1,75E-01
ADPF	kg Sb eq.	5,04E-02	1,60E-02	1,60E-02	8,23E-02	1,51E-02	4,05E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	3,93E-03	7,09E-04	2,17E-04	1,57E-03	-3,16E-03

- ADPE = Abiotic Depletion Potential for non-fossil resources
- ADPF = Abiotic Depletion Potential for fossil resources
- GWP = Global Warming Potential
- ODP = Depletion potential of the stratospheric ozone layer
- POCP = Formation potential of tropospheric ozone photochemical oxidants
- AP = Acidification Potential of land and water
- EP = Eutrophication Potential
- HTP = Human Toxicity Potential
- FAETP = Fresh water aquatic ecotoxicity potential
- MAETP = Marine aquatic ecotoxicity potential
- TETP = Terrestrial ecotoxicity potential
- ECI = Environmental Cost Indicator
- ADPF = Abiotic Depletion Potential for fossil resources

ENVIRONMENTAL IMPACT per functional unit or declared unit (core indicators A2)

Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total kg CO2 eq.	-1,27E+01	2,23E+00	1,94E+00	-8,51E+00	2,11E+00	7,68E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	6,02E-01	9,74E-02	1,74E+01	1,28E+00	-4,26E-01
GWP-fossil kg CO2 eq.	5,81E+00	2,23E+00	1,83E+00	9,88E+00	2,11E+00	6,88E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	6,02E-01	9,74E-02	2,98E-02	3,16E-01	-4,20E-01
GWP-biogenic kg CO2 eq.	-1,85E+01	0,00E+00	1,04E-01	-1,84E+01	0,00E+00	7,96E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	1,74E+01	9,66E-01	0,00E+00
GWP-luluc kg CO2 eq.	1,72E-02	7,81E-04	9,18E-04	1,89E-02	7,51E-04	5,34E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	4,75E-05	3,45E-05	2,54E-05	7,03E-05	-5,83E-03
ODP kg CFC11 eq.	7,66E-07	5,07E-07	6,10E-07	1,88E-06	4,80E-07	1,34E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	1,30E-07	2,24E-08	1,41E-09	4,57E-08	-1,38E-07
AP mol H+ eq.	3,72E-02	9,12E-03	2,50E-02	7,13E-02	6,06E-03	6,42E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	6,30E-03	5,55E-04	1,00E-04	3,34E-03	-1,54E-02
EP-fresh water kg PO4 eq.	3,70E-04	1,75E-05	4,12E-05	4,29E-04	1,68E-05	2,34E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	2,19E-06	8,01E-07	1,74E-06	2,77E-06	-4,93E-05
EP-marine kg N eq.	1,00E-02	2,71E-03	2,28E-03	1,50E-02	1,20E-03	2,83E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	2,78E-03	1,99E-04	1,88E-05	1,47E-03	-4,43E-03
EP-terrestrial mol N eq.	1,00E-01	2,99E-02	9,58E-02	2,26E-01	1,34E-02	3,10E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	3,05E-02	2,19E-03	2,22E-04	1,65E-02	-7,28E-02
POCP kg NMVOC eq.	3,59E-02	9,17E-03	5,55E-03	5,07E-02	5,14E-03	8,51E-03	2,60E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	8,39E-03	5,32E-04	5,72E-05	4,29E-03	-1,28E-02
ADP-minerals & metals kg Sb eq.	9,92E-05	6,04E-05	2,73E-05	1,87E-04	5,82E-05	1,33E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	9,23E-07	2,48E-06	1,03E-07	3,83E-06	-7,55E-06
ADP-fossil MJ, net calorific value	1,04E+02	3,37E+01	1,15E+02	2,52E+02	3,19E+01	8,54E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	8,29E+00	1,50E+00	3,97E-01	3,20E+00	-6,75E+00
WDP m3 world eq. Deprived	2,77E+00	9,37E-02	1,32E+00	4,19E+00	9,03E-02	1,23E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	1,11E-02	4,59E-03	3,74E-03	6,73E-02	-1,69E-01

GWP-total = Global Warming Potential total

GWP-fossil = Global Warming Potential fossil fuels

GWP-biogenic = Global Warming Potential biogenic total

GWP-luluc = Global Warming Potential land use and land use change

ODP = Depletion potential of the stratospheric ozone layer

AP = Acidification Potential, Accumulated Exceedence

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 Exceedence

POCP = Formation potential of tropospheric ozone photochemical oxidants

ADP-minerals & metals = Abiotic Depletion Potential for non-fossil resources [1]

ADP-fossil = Abiotic Depletion for fossil resources potential [1]

WDP = Water (user) deprivation potential, deprivation-weighted water consumption [1]

Disclaimer [1]:

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

ENVIRONMENTAL IMPACT per functional unit or declared unit (additional indicators A2)

Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM Disease incidence	2,90E-07	1,55E-07	1,34E-06	1,78E-06	1,34E-07	1,68E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	1,67E-07	8,79E-09	5,37E-10	3,45E-08	-2,43E-07
IRP kBq U235 eq.	3,21E-01	1,47E-01	9,61E-01	1,43E+00	1,39E-01	3,66E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	3,55E-02	6,53E-03	1,28E-03	1,24E-02	-2,90E-02
ETP-fw CTUe	2,58E+02	2,70E+01	4,55E+01	3,30E+02	2,57E+01	5,22E+00	5,32E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	5,00E+00	1,21E+00	4,48E-01	4,18E+00	-1,53E+02
HTP-c CTUh	4,21E-08	7,58E-10	7,55E-09	5,04E-08	7,15E-10	2,07E-10	4,00E-13	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	1,75E-10	4,32E-11	8,30E-12	2,35E-09	-2,36E-09
HTP-nc CTUh	3,71E-07	2,94E-08	2,44E-08	4,25E-07	2,71E-08	4,69E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	4,29E-09	1,44E-09	2,53E-10	1,04E-08	-6,20E-08
SQP -	1,59E+03	2,32E+01	1,50E+01	1,63E+03	2,23E+01	1,27E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	1,06E+00	1,32E+00	7,78E-02	3,09E+00	-6,06E+02

- PM = Potential incidence of disease due to PM emissions
- IRP = Potential Human exposure efficiency relative to U235 [1]
- ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
- HTP-c = Potential Comparative Toxic Unit for humans, cancer [2]
- HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
- SQP = Potential soil quality index [2]

Disclaimer [1]:

- 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.

Disclaimer [2]:

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

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 en A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	1,10E-04	8,82E-05	3,24E-02	3,26E-02	8,35E-05	2,33E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	2,26E-05	3,82E-06	2,52E-07	7,85E-06	-1,85E-05
NHWD	kg	1,19E+00	1,61E+00	1,92E-01	2,99E+00	1,55E+00	2,82E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	9,81E-03	9,27E-02	1,74E-03	3,43E+00	-1,84E-01
RWD	kg	3,31E-04	2,30E-04	1,25E-03	1,81E-03	2,17E-04	5,92E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	5,75E-05	1,02E-05	1,09E-06	1,87E-05	-4,08E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	1,53E-02	1,53E-02	0,00E+00	1,35E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	3,33E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	2,27E-01	2,27E-01	0,00E+00	1,94E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	1,93E+01	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	3,90E-01	3,90E-01	0,00E+00	3,34E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	3,32E+01	0,00E+00

HWD = Hazardous Waste Disposed
 NHWD = Non Hazardous Waste Disposed
 RWD = Radioactive Waste Disposed
 CRU = Components for reuse
 MFR = Materials for recycling
 MER = Materials for energy recovery
 EEE = Exported Electrical Energy
 ETE = Exported Thermal Energy

RESOURCE USE per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	2,77E+02	4,75E-01	8,36E+00	2,86E+02	4,57E-01	4,88E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	4,48E-02	2,14E-02	4,51E-02	6,58E-02	-1,26E+02
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	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,56E-03
PERT	MJ	2,77E+02	4,75E-01	8,36E+00	2,86E+02	4,57E-01	4,88E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	4,48E-02	2,14E-02	4,51E-02	6,58E-02	-1,26E+02
PENRE	MJ	1,11E+02	3,57E+01	1,17E+02	2,64E+02	3,39E+01	9,06E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	8,80E+00	1,59E+00	4,24E-01	3,41E+00	-7,18E+00
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	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,11E+02	3,57E+01	1,17E+02	2,64E+02	3,39E+01	9,06E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	8,80E+00	1,59E+00	4,24E-01	3,41E+00	-7,18E+00
SM	kg	0,00E+00	0,00E+00	9,08E-04	9,08E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,44E-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	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,06E-01
NSRF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,84E-02
FW	m3	8,69E-02	3,55E-03	5,27E-02	1,43E-01	3,41E-03	5,00E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	4,27E-04	1,69E-04	2,41E-04	4,72E-03	-4,65E-03

PERE	=	Use of renewable primary energy excluding renewable primary energy 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 resources excluding non-renewable 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 resources
SM	=	Use of secondary materials
RSF	=	Use of renewable secondary fuels
NSRF	=	Use of non-renewable secondary fuels
FW	=	Use of net fresh water

BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	kg C	0,00E+00	0,00E+00	0,00E+00	4,30E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
BCCpa	kg C	0,00E+00	0,00E+00	0,00E+00	3,80E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BCCpr	=	Biogenic carbon content in product
BCCpa	=	Biogenic carbon content in packaging

CALCULATION RULES

The Rockzero W-OW and ROCKWOOL stone wool data are collected for the full year 2022. Mass and energy balances are >95% correct since they are based on yearly consumptions. Data quality is assessed as good to very good.

The ROCKWOOL stone wool production is allocated on mass basis since all fibres from the lines are similar.

Secondary raw materials from the metallurgic industry that are used as input are allocated based on their waste status: waste is free of burden, co-products are allocated for 1% of the primary material production.

Internally recycled stone wool is free of burden (included in production figures) and is not assessed as 'secondary raw material'.

Background datasets are no older than 10 years.

- GWP-b is calculated manually, according to the NMD guideline (Modules A-C overall zero, Module D zero).
- Energy parameters (PERE, PERM, PENRE, PENRM), secondary material (SM), use of secondary fuels (RSF, NRSF), components for reuse (CRU), materials for recycling (MFR), energy recovery (MER) and exported energy (EE) are calculated manually.
- The Lower Heating Values (LHV) are used for the calculation of energy use.
- Ecoinvent processes include infrastructure (capital goods). Capital goods at ROCKWOOL are cut-off since these are assumed to contribute <5%.
- Ecoinvent processes for landfill exclude long-term emissions.
- Transport data are based on full load and empty return transport.

Cut-offs:

- Inkjet cleaner auxiliary.
- Ink / label.
- Glueing stone wool on OSB (glue production is included, energy consumption assumed to be nihil).
- Transport of auxiliaries in A3. The amounts and contributions to the environmental impact is <1%.
- Use of offices, canteens etc..
- Transport of personnel.
- Sorting of glue in C3 (1,4% m/m).
- Energy recovery of incineration of PE in A5 and glue in C4.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

ROCKWOOL stone wool fibres are produced from non-scarce natural stones (basalt), secondary materials and briquettes. Briquettes are made of rock mineral wool waste from both production and the recycling service ROCKCYCLE for construction & demolition waste, secondary materials and by-products from other industries such as slags, alumina and cement. The basalt stone, secondary raw materials and briquettes are transported via conveyor belts to the furnace, where a dosed mixture is heated up to approximately 1500 °C. The materials melt at this temperature (like in a volcano). The droplets of melt exiting the furnace are spun into fibres. Droplets fall onto rapidly rotating flywheels or the mixture is drawn through tiny holes in rapidly rotating spinners. This process shapes it into fibres. All losses during spinning are recycled back into the production process, either directly by being blown into the spinning process or via the briquette routing.

Module A4:

The transport distance to the construction site is modelled as the distance from Saint-Éloy-les-Mines to Utrecht: 828 km. The results in Module A4 can be scaled linearly. For a distance of 100 km, 100/828 times the A4 values can be applied.

Module A5:

Installation can be done with a crane, depending on, for example, the floor height in which it is installed. The cranes that are on site anyways, are used for this. As a worst-case scenario, ROCKWOOL estimates that it takes appr. 10 minutes to lift a wall element of 24 m² into the right position. A heavy crane process is applied as worst case. The same data are applied in Module C1. More information on installation can be found at <https://prefab.rockwool.com/nl/bouwsystemen/Rockzero-wood-gevelvullend-bouwstelsysteem/>.

Since the wall elements are prefabricated and no sawing or cutting is required on site, there is no waste at installation. Packaging waste is included though in A5. ROCKWOOL has a pallet return system. For PE foil, the default Dutch scenario is applied.

Packaging waste	Incineration	Recycling	Reuse	Landfill
Pallets	10,00%		90,00%	
PE foil	85,00%	5,00%		10,00%

Module B:

Rockzero W does not require maintenance, repair, replacement or refurbishment under normal use conditions. Therefore, Modules B2-B5 are zero. B6 (operational energy use) and B7 (operational water use) are not applicable for wall elements. The Rockzero elements contribute to the energy performance of the building and do not use operational energy or water themselves.

In B1, formaldehyde emissions are declared, as these are defined in the ROCKWOOL LCA Group rules. This is a worst-case approach: emissions from Rockzero elements will be lower since the stone wool is covered by OSB.

Rockzero participates in ROCKWOOL's RockCycle recycling service. If desired, a return guarantee for Rockzero is provided by ROCKWOOL, whereby all stone wool will be recycled. It is assumed that 50% of the stone wool will be recycled, either through the Rockzero system guarantee, or through the take-back of stone wool via the Rockcycle recycling service. Rockcycle is available for all sorting companies and is a working (return) system for many years.

For Rockzero W-OW this is probably a conservative assumption, because it is prefabricated and easy to dismantle and sort.

For the other materials, the Dutch NMD default waste scenarios apply.

End-of-life scenario	Incineration	Recycling	Reuse	Landfill
Stone wool		50,00%		50,00%
OSB	85,00%	10,00%		5,00%
Glue	100,00%			

DECLARATION OF SVHC

The products do not contain substances of very high concern.

REFERENCES

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

Bepalingsmethode Milieuprestatie Bouwwerken Berekeningswijze voor het bepalen van de milieuprestatie van bouwwerken gedurende hun gehele levensduur, gebaseerd op de EN 15804+A2. Versie 1.2 (januari 2025)

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