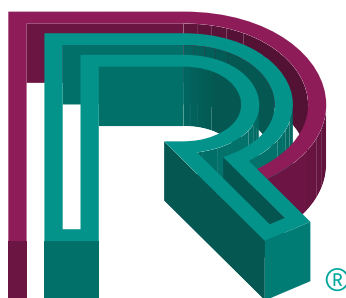


ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2010 and
EN 15804:2012+A2:2019/AC:2021 for:



RE.Stone | LINEA
RECUPERO
INERTI
RECOVERED STONE

RE.Stone 1
from
R.M.B. S.p.A.

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of a single product from a manufacturer
EPD registration number:	EPD-IES-0011680:003 (S-P-11680)
Publication date:	2024-01-23
Revision date:	2026-02-13
Valid until:	2031-01-07

*An EPD should provide current information and may be updated if conditions change.
To find the latest version of the EPD and to confirm its validity, see www.environdec.com*

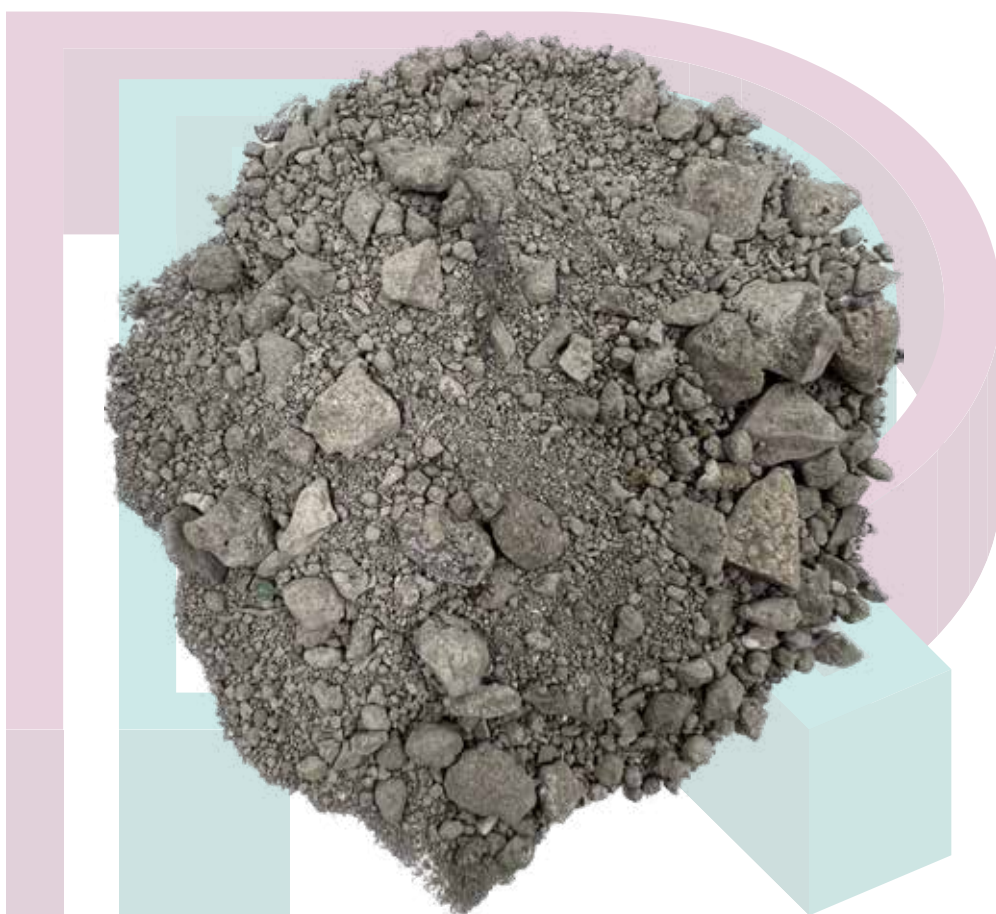


RMB



EPD
INTERNATIONAL EPD SYSTEM

RE.Stone 1



GENERAL INFORMATION

Programme information

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

Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR 2019:14 Construction products, version 2.0.1 UN CPC 3756
PCR review was conducted by: The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com . The review panel may be contacted via support@environdec.com . Review chair: Rob Rouwette, Start2See.

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2010, via:

☒ **Individual EPD verification without a pre-verified LCA/EPD tool**
Third-party verifier: DNV Business Assurance Italia S.r.l., Via Energy Park, 14 - 20871 Vimercate (MB) Italy
Accredited by: Accredia, certification number 00010

☐ **Individual EPD verification with a pre-verified LCA/EPD tool**

☐ **EPD process certification* without a pre-verified LCA/EPD tool**

☐ **EPD process certification* with a pre-verified LCA/EPD tool**

☐ **Fully pre-verified EPD tool**

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 published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have 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: R.M.B. S.p.A.

Address: Via Monte Canale 3, 25080 Polpenazze del Garda (BS) Italy

Contact: Francesco Fiorini, Technical Manager, francesco.fiorini@rmbspa.com

Address and contact information of the LCA practitioner commissioned by the EPD owner: Lorenzo Calisse, l.calisse@greenwicht srl

Description of the organisation:

Company

Since 1981 R.M.B. has been involved in the recovery of new raw materials from waste, managing the complete cycle in total respect for the environment. The company has an overall plant potential of 680.000 tons/year, establishing itself as one of the main multi-purpose platforms in Europe for the treatment aimed at recovering special, hazardous and non-hazardous waste.

Mission

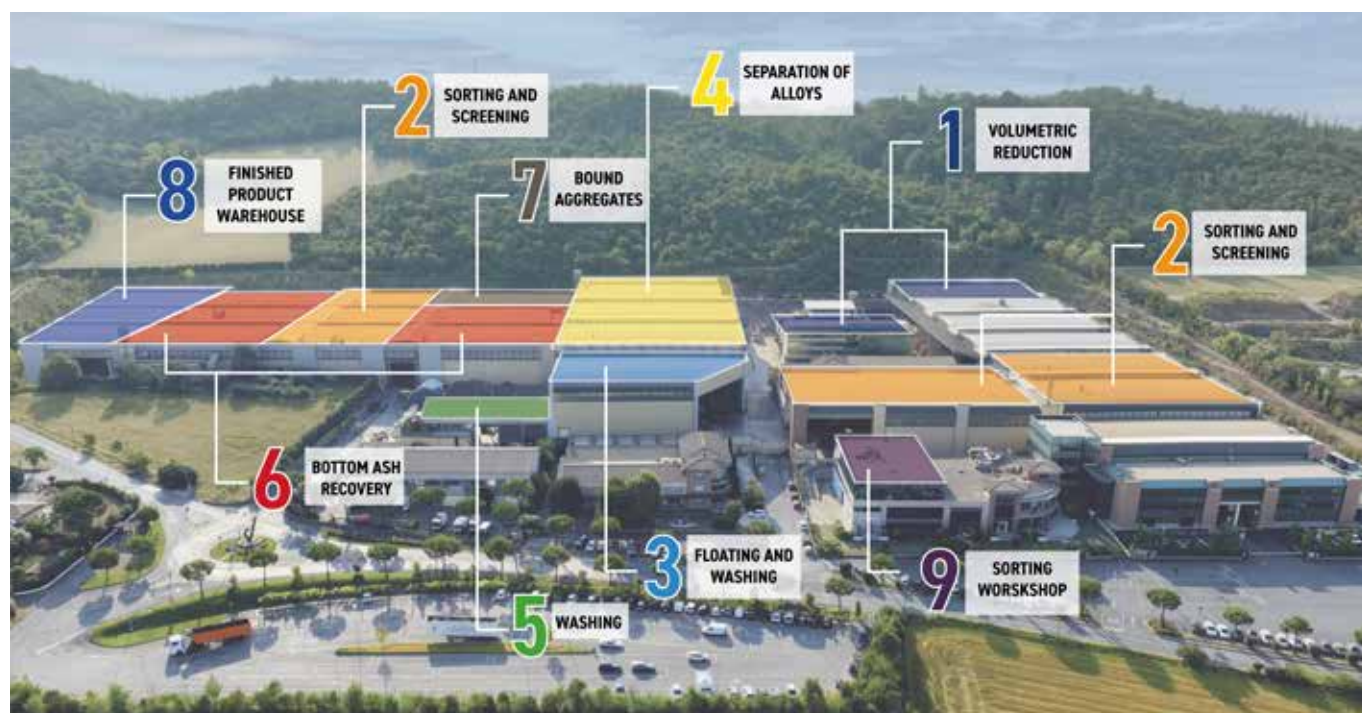
The main objective of R.M.B. is the separation of all exploitable fractions, especially metals, in order to obtain MPS and/or "end of waste" to be marketed. All the operations carried out within the production platforms are oriented towards recovery and tend towards the maximum valorisation of the materials, in both economic and environmental terms.

Vision

The company focuses on the "CIRCULAR ECONOMY" model based on the application of the concepts of reuse, recycling, recovery of materials and energy, reducing the transfer of waste to landfills as much as possible.

Product-related or management system-related certifications:

UNI EN ISO 9001:2015, UNI EN ISO 14001:2015, UNI EN ISO 45001:2018, UNI EN ISO 14021:2021, SA8000:2014.



PRODUCT INFORMATION

Product name: RE.Stone 1

Product identification: Pluri-inert industrial aggregate CE marked EN 12620:2002+A1:2008, EN 13043:2002/AC:2004, EN 13242:2022+A1:2007

UN CPC code: 3756 Other articles of cement, concrete or artificial stone

Product description:

Pluri-inert industrial aggregate made by inert matrix material deriving from industrial processes of thermal and mechanical treatment of wastes. RE.Stone 1 has technical characteristics with a particle size of 0-20 mm and is used for the production of cement conglomerates, mixed cemented and/or loose aggregates.

Process description:

Bottom ash and slag from the waste-to-energy plant, taken from R.M.B., are subjected to a first phase of storage necessary for the maturation/carbonation process to take place with simultaneous loss of water and reduction of pH (15-20 days). Subsequently, by means of a wheel loader, the stored ashes are transferred to the dedicated production sections, where sieving, volumetric reduction and separation of the metal fractions from the mineral/aggregate fraction takes place. The product, loose and with a particle of various selected size, is conveyed by a conveyor belt into the storage box.

Name and location of production site(s): Via Monte Canale 3, 25080 Polpenazze del Garda (BS) Italy

References to any relevant websites for more information or explanatory materials: <https://www.rmbspa.com/>

CONTENT DECLARATION

- **The mass (weight) of one unit of a product, as purchased or per declared unit:** 1 ton
- **Content of the product in the form of a list of materials and substances, and their mass:** 100% bottom ash from the incineration of municipal solid waste (MSW)
- **The mass and the content of distribution and/or consumer packaging:** RE.Stone 1 is sold without packaging
- **Information on the environmental and hazardous/toxic properties of a substances contained in the product:** no substances included in the Candidate List of Substances of Very High Concern for authorization under the REACH regulations are present in the analysed product
- **The declared share of biogenic/recycled materials:** the products are composed entirely of pre-consumer recycled material. The products contain no biogenic carbon

Product content	Mass, kg	Pre-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Bottom ash	1000	100%	0%	0
TOTAL	1000	100%	0%	0

Bottom ashes are classified as pre-consumer recycled material meaning that no consumer has utilised the ashes before. However, according to ISO 14021 definition, the ashes are classified as post-consumer recycled material as they come from urban waste incineration.

LCA INFORMATION

Declared Unit (DU): 1 ton

Reference service life: Not applicable

Time representativeness: primary data refers to the solar year 2024

Geographical scope: processes have been modelled to represent manufacturing in Italy

Database(s) and LCA software used: Ecoinvent 3.11, SimaPro 10.2.0.2

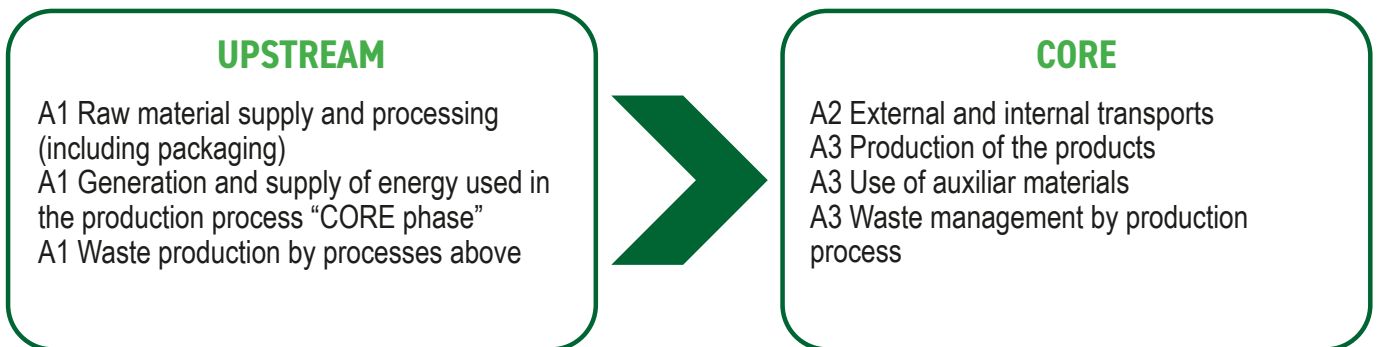
Description of system boundaries: cradle to gate (A1-A3)

Modules C1–C4 and module D are not considered based on the criteria at paragraph 5.2 of EN 15804+A2 as well as paragraph 2.2.2 of PCR 2019:14 Construction products (EN 15804:A2) and ANNEX A3 of GPI 5.0:

- RE.Stone 1 is physically integrated with other products (e.g. concrete) so they cannot be physically separated from them at end of life
- RE.Stone 1 is no longer identifiable at end of life as a result of a physical or chemical transformation process
- RE.Stone 1 does not contain biogenic carbon

Process flow diagram:

Process flow diagram of the product system, divided into the life-cycle stages and modules (or other division of the product life cycle, if defined in the PCR), showing the main processes included and the system boundary of the LCA. The diagram shall make it clear when the end-of-waste state is reached for main input flows of reused/recycled materials and recovered energy, and for output flows of reused/recycled materials and recovered energy exiting the end-of-life stage.



More information:

Allocation

RE.Stone 1 is a by-products of the production process in which metals are separated from bottom ash. Bottom ash is a recovery material from municipal solid waste incineration. Allocation was made on an economic basis.

Modelling of electrical energy

The electricity used by R.M.B. for the production of RE.Stone 2 and 3 is taken from the national energy system and from the photovoltaic plant on the roof of the facility, which were modelled with the following Ecoinvent modules, respectively: Electricity, medium voltage {IT}| electricity, medium voltage, residual mix | Cut-off, U (GWP-GHG 0,669 kg CO2 eq/kWh) and Electricity, low voltage {IT}| electricity production, photovoltaic, 3kWp slanted-roof installation, single-Si, panel, mounted | Cut-off, U (GWP-GHG 0,080 kg CO2 eq/kWh). Photovoltaic energy constitutes 9,55% of the total electricity consumption. The weighted average of energy sources results in an overall GWP-GHG impact of 0,613 kg CO2 eq/kWh.

Infrastructure and capital goods

Infrastructure and capital goods have been included in the analysis for all processes, except for R.M.B.'s own productive processes.

Cut-off rules

The following processes were excluded from the study: the replacement parts for machinery used during routine and extraordinary maintenance, employee travel, packaging of the auxiliary materials, the natural gas used for heating offices and the company canteen. All raw materials were considered, so there were no cut-offs considered.

Data quality

With reference to the EN 15804:2012+A2:2019 standard, the analysis describes a specific product using primary data for the processes on which the manufacturer has an influence:

- for UPSTREAM data, the data regarding raw materials and their weight is modelled using primary data. The only raw material in the present study is bottom ash, which enters the plant as waste with an EWC, and is therefore modelled as an empty module;
- all data related to the CORE phases, including energy use, emissions and waste is derived from company databases and is therefore primary.

The table below reports the share of primary data contributing to the declared GWP-GHG results of modules A1-A3.

Process	Source type	Source	Reference year	Data category	Share of primary data of GWP-GHG results for A1-A3
Raw materials transport	Collected data	EPD owner	2024	Primary data	70,78%
Waste transport	Collected data	EPD owner	2024	Primary data	20,88%
Others	Collected data	EPD owner	2024	Primary and secondary data	8,30%
Total					99,96%

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.

Representative secondary data

In the use of representative secondary data, the following criteria were applied:

- geographic equivalence;
- technological equivalence;
- equivalence with respect to system boundaries.

For secondary data, information between 2020 and 2024 was considered.

METHOD

Environmental performance indicators were calculated using the EN15804 characterisation method, reference package EF 3.1.

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

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Geography	ITA	ITA	ITA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Primary data used	>99%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

Mandatory impact category indicators according to EN 15804

Results per declared unit					
Indicator	Unit	A1	A2	A3	A1-A3
GWP-total	kg CO ₂ eq.	1,4E-01	1,1E+00	1,2E-01	1,3E+00
GWP-fossil	kg CO ₂ eq.	1,4E-01	1,1E+00	1,2E-01	1,3E+00
GWP- biogenic	kg CO ₂ eq.	2,5E-04	8,8E-04	1,3E-04	1,3E-03
GWP- luluc	kg CO ₂ eq.	1,9E-05	3,6E-04	3,8E-05	4,2E-04
ODP	kg CFC 11 eq.	1,7E-09	2,3E-08	2,7E-09	2,7E-08
AP	mol H ⁺ eq.	8,2E-04	5,2E-03	5,5E-04	6,6E-03
EP-freshwater	kg P eq.	6,6E-05	7,3E-05	2,6E-05	1,7E-04
EP- marine	kg N eq.	1,4E-04	1,8E-03	1,9E-04	2,2E-03
EP-terrestrial	mol N eq.	1,4E-03	2,0E-02	2,1E-03	2,4E-02
POCP	kg NMVOC eq.	4,3E-04	7,0E-03	7,6E-04	8,2E-03
ADP-fossil*	MJ	1,0E+00	1,2E+00	1,4E-01	2,3E+00
ADP-minerals&metals*	kg Sb eq.	2,6E-07	3,5E-06	3,8E-07	4,2E-06
WDP*	m ³	1,3E-02	6,0E-02	0,0E+00	7,3E-02

Acronyms: GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-land use = 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.

Additional mandatory and voluntary impact category indicators

Results per declared unit					
Indicator	Unit	A1	A2	A3	A1-A3
GWP-GHG ^[1]	kg CO ₂ eq.	1,4E-01	1,1E+00	1,2E-01	1,3E+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 CO₂ is set to zero.

Resource use indicators

Results per declared unit					
Indicator	Unit	A1	A2	A3	A1-A3
PERE	MJ, Net calorific value	1,7E-01	2,6E-01	3,0E-02	4,6E-01
PERM	MJ, Net calorific value	0,0E+00	0,0E+00	0,0E+00	0,0E+00
PERT	MJ, Net calorific value	1,7E-01	2,6E-01	3,0E-02	4,6E-01
PENRE	MJ, Net calorific value	1,0E+00	1,2E+00	1,4E-01	2,3E+00
PENRM	MJ, Net calorific value	0,0E+00	0,0E+00	0,0E+00	0,0E+00
PENRT	MJ, Net calorific value	1,0E+00	1,2E+00	1,4E-01	2,3E+00
SM	kg	1,0E+03	0,0E+00	0,0E+00	1,0E+03
RSF	MJ, Net calorific value	0,0E+00	0,0E+00	0,0E+00	0,0E+00
NRSF	MJ, Net calorific value	0,0E+00	0,0E+00	0,0E+00	0,0E+00
FW*	m ³	3,8E-04	1,9E-03	0,0E+00	2,3E-03

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	A2	A3	A1-A3
Hazardous waste disposed	kg	1,3E-05	1,0E-04	1,2E-05	1,3E-04
Non-hazardous waste disposed	kg	2,7E-03	7,0E-01	1,2E+00	1,9E+00
Radioactive waste disposed	kg	1,9E-06	4,5E-06	5,5E-07	7,0E-06

Output flow indicators

Indicator	Unit	Results per declared unit			
		A1	A2	A3	A1-A3
Components for re-use	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00
Material for recycling	kg	0,0E+00	0,0E+00	3,9E-03	3,9E-03
Materials for energy recovery	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00
Exported energy, electricity	MJ	0,0E+00	0,0E+00	1,0E-03	1,0E-03
Exported energy, thermal	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00

ADDITIONAL ENVIRONMENTAL INFORMATION

As provided for in paragraph 1 of article 184-ter of Legislative Decree 152/2006 and subsequent amendments, R.M.B. undertakes to comply with the limits of the ecotoxicological tests established by the CLP Regulation (Reg. 1272/2008/CE and subsequent amendments) to verify the ecotoxicity of the materials.

Specifically, the company is committed to carrying out ecotoxicity tests in compliance with EU Regulation 440/2008 and subsequent amendments, evaluating the dangers to the environment and carrying out corrosion and irritation tests for dangers to human health.

RECYCLED MATERIAL CONTENT

Product	Description	Recycled material content
Re.Stone 1	Industrial recovery aggregate PRE-CONSUMER	100%

The product described in this EPD contains 100% pre-consumer recycled material. This was verified by DNV following UNI EN ISO 14021, as evidenced by certificate number STAT-14953-2-2021-CSR-ITA-DNV, valid until November 20th, 2025. This certification ensures the product's compliance with the criteria outlined in the Minimum Environmental Criteria (CAM) for the construction sector. Complete documentation supporting the verification is maintained and available upon request.

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization
CLC	Co-location centre
CPC	Central product classification
GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
Environmental Impact Indicators (EN 15804)	
GHG	Greenhouse gas
GWP	Global Warming Potential (kg CO ₂ eq.)
GWP-fossil	Global Warming Potential from fossil sources (kg CO ₂ eq.)
GWP-biogenic	Global Warming Potential from biogenic sources (kg CO ₂ eq.)
GWP-luluc	Global Warming Potential from land use and land use change (kg CO ₂ eq.)
GWP-total	Total Global Warming Potential (kg CO ₂ eq.)
GWP-GHG	Global Warming Potential for greenhouse gases (kg CO ₂ eq.)
ODP	Ozone Depletion Potential (kg CFC-11 eq.)
AP	Acidification Potential (mol H ⁺ eq.)
EP	Eutrophication Potential
EP-freshwater	Freshwater eutrophication potential (kg P eq.)
EP-marine	Marine eutrophication potential (kg N eq.)
EP-terrestrial	Terrestrial eutrophication potential (mol N eq.)
POCP	Photochemical Ozone Creation Potential (kg NMVOC eq.)
ADP	Abiotic Depletion Potential
ADP - minerals&metals	Abiotic depletion potential for non-fossil resources (kg Sb eq.)
ADP-fossil	Abiotic depletion potential for fossil resources (MJ)
WDP	Water Deprivation Potential (m ³)

Output Flow Indicators	
CFR	Components for Reuse (kg)
MR	Material for Recycling (kg)
MER	Materials for Energy Recovery (kg)
EEE	Exported Energy, Electricity (MJ)
EET	Exported Energy, Thermal (MJ)
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	
SVHC	Substances of Very High Concern
EC No.	European Community Number
CAS No.	Chemical Abstracts Service Number
MJ	Megajoule
kg	Kilogram
m ³	Cubic Meter
NMVOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents

CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO ₂ eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO ₂ eq.	Kilograms of Carbon Dioxide Equivalent
ND	Not Declared

REFERENCES

- a) General Programme Instructions of International EPD System. Version 5.0.1.
- b) PCR 2019:14. Construction products. Version 2.0.1.
- c) EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.
- d) GreenMan 2019. Impianti di incenerimento rifiuti non pericolosi. Progetto di variante "Revamping per adeguamento tecnologico" Relazione di progetto preliminare. Manzano, 11/04/2019
- e) Background report: R.M.B._Report LCA_RE.Stone 1_2024_ENG_rev.03

VERSION HISTORY

- Version1: Original Version of the EPD, 2024-01-23
- Version 2: Inclusion of recycled content information, 2025-03-24
- Version 3: Update of environmental impacts, 2026-02-13

OPINION

Opinion No:
C651568

Initial Issuance Date:
23 January 2024

Validity
12 February 2031

This states that the organization:

RMB S.p.A.

Via Montecanale 3 - 25080 Polpenazze del Garda (BS), Italy

With production site:

- Via Montecanale 3 - 25080 Polpenazze del Garda (BS), Italy

has updated with 2024 data the Environmental Product Declaration (EPD) entitled:

EPD-IES-0011680 - RE.Stone 1 Rev. 2026/02/13

The data and the information reported in the above referred EPD Declaration have been verified as satisfactory as it was found to be free of material misstatements and in compliance with the requirements contemplated in the following International Standards:

- PCR 2019:14 ver.2.0.1 Product Category Rules for “Construction Products”
- EN 15804:2012+A2:2019 “Sustainability of construction works - Environmental product declarations”.
- EPD General Programme Instructions GPI 5.0.1.
- ISO 14025:2006 - Type III Environmental Declarations. Principles and procedures

UN CPC Code: 3756 Other articles of cement, concrete or artificial stone

Place and date
Vimercate (MB), 13 February 2026

For the Certification Body
DNV – Business Assurance
Via Energy Park, 14 – 20871 Vimercate - Italy



Claudia Baroncini
Management Representative