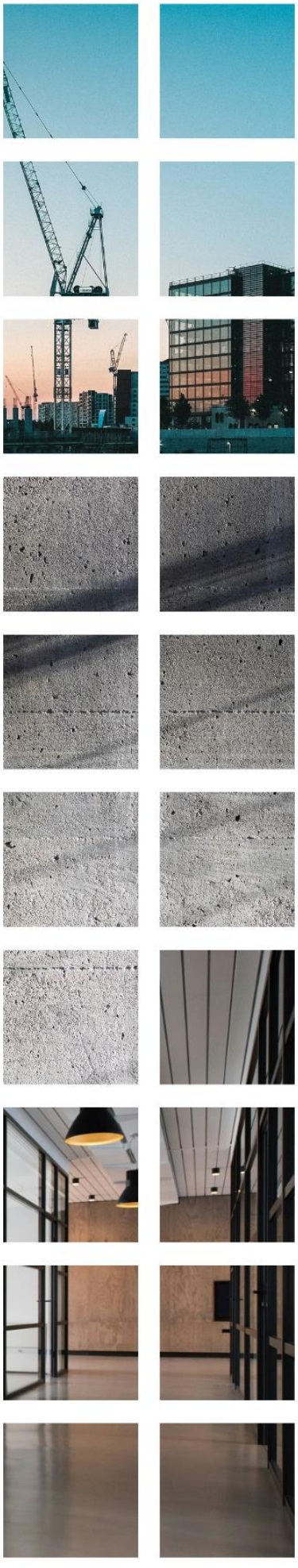
bm certification



Cemacon SA

Type III environmental declaration

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

Ceramic blocks

Publication date: 2024-08-25
Valid until: 2029-08-24

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General information

Product or service: Ceramic blocks
Declaration owner: Cemacon SA, Strada Fabricii, nr.1, sat Recea, Comuna Virsolt, judetul Salaj, Romania
LCA practitioner: Dr.Ing. K. Zudrags BM Certification SIA
Standard: ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021
Independent third-party verification: No

Company information

Contact: office@cemacon.ro

Description of the organisation: Manufacture of ceramic products by burning, especially tiles, bricks, Refractory tiles, ceramic tiles - tiles, faience, ceramic objects or porcelain.

Product or management system certifications: ISO 9001; ISO 14001; ISO 45001
Name and location of production site: Strada Fabricii, nr.1, sat Recea, Comuna Virsolt, judetul Salaj, Romania
Webpage: https://cemacon.ro

Product information

Product name: Ceramic blocks
Product identification: EVOCERAMIC,EUROPOROTON

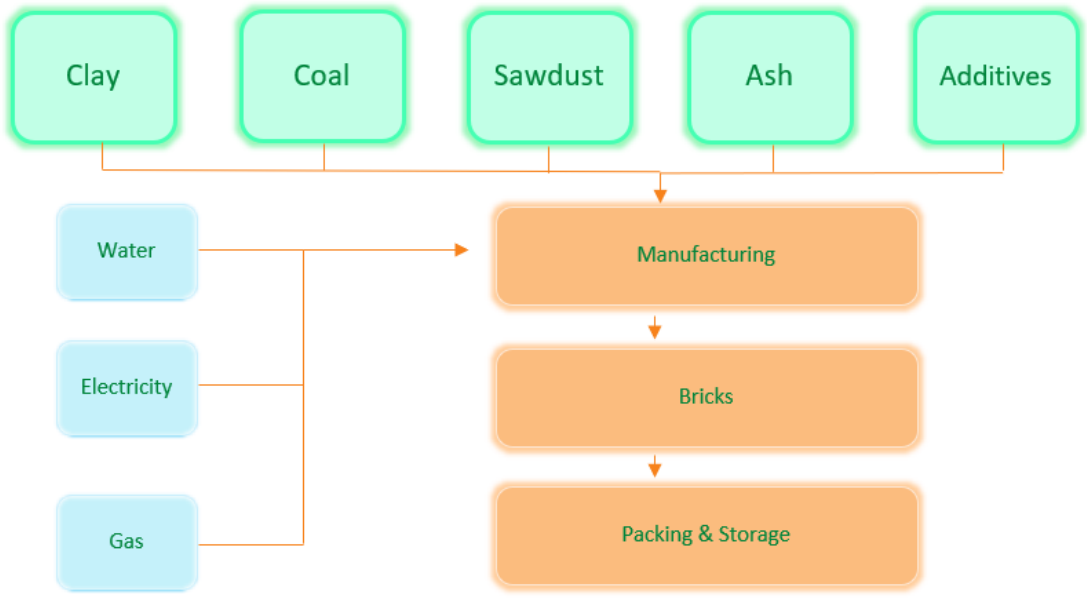
Product description: Ceramic blocks with vertical gaps, made of clay and other auxiliary materials, of different sizes. The Cemacon Evoceramic bricks is useful for building external and internal, load-bearing and non-load-bearing protected masonry walls.
UN CPC code: 3731 - Bricks, blocks, tiles and other ceramic goods of siliceous earths
Geographical scope: Romania

LCA information

Functional unit / declared unit: one tone of clay bricks (1000kg).

Reference service life: >100 years
Time representativeness: Data for calculation were collected by Cemacon SA and cover period of 12 months (01.01.2023-30.12.2023).
Database(s) and LCA software used: One Click LCA, Ecoinvent 3.8.
Description of system boundaries: Cradle to gate with options, modules A4, A5, C1–C4, module D (A1–A3 + A4 + A5 + C1-C4 + D).

System diagram:



More information: All known inputs and outputs are included in the study. The ancillary materials have been cut-off due to insufficient and minor influence of data. The packaging is excluded as its mass is insignificant and it's reused many times and collected by the producer.

Model A4 and C2 is modelled assumed that distance is 100km and transport lorry Euro 5 class.

90% of all the ceramic blocks are assumed for recycling or reuse. The energy consumption of A5 model is considered as negligible.

The GWP-GHG impact of the electricity 0.43 kg eCO_2/kWh.

EN 15804 reference package EF 3.0.

Life cycle stages 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	X	X	X	X	X
Geography	Europe			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	NA			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product components	**Weight, kg**	**Post-consumer material, weight-%**	**Biogenic material, weight-% and kg C/kg**
Clay	864.8		
Coal	68.3		
Sawdust	57.1		100%, 0.5 kg C/kg
Ash	9.1		
Additives	0.7		
TOTAL	1000		

The product does not contain substances that can be included in the "Candidate List of Substances of Very High Concern for Authorisation".

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804+A2:2019/AC:2021

		A1-A3	A4	A5	C1	C2	C3	C4	D
GWP- total	kg CO2 eq.	3.96E+01	9.50E+00	1.18E+01	3.31E+00	9.39E+00	8.26E+00	8.44E-01	-3.51E+00
GWP-fossil	kg CO2 eq.	5.57E+01	9.49E+00	1.17E+01	3.31E+00	9.38E+00	8.24E+00	8.41E-01	-3.50E+00
GWP-biogenic	kg CO2 eq.	-1.61E+01	3.67E-03	1.99E-02	6.06E-04	3.63E-03	1.79E-02	5.19E-04	-8.04E-03
GWP-luluc	kg CO2 eq.	5.59E-02	3.50E-03	7.14E-03	3.30E-04	3.46E-03	6.46E-03	2.56E-03	-3.58E-03
ODP	kg CFC-11 eq.	4.87E-06	2.18E-06	5.81E-07	7.07E-07	2.16E-06	1.68E-06	2.74E-07	-3.45E-07
AP	mol H+ eq.	3.69E-01	4.02E-02	3.59E-02	3.44E-02	3.97E-02	6.96E-02	6.91E-03	-2.55E-02
EP-freshwater	kg P eq.	1.46E-02	7.77E-05	1.42E-04	1.10E-05	7.68E-05	2.16E-04	9.82E-06	-1.01E-04
EP-marine	kg N eq.	9.54E-02	1.19E-02	1.00E-02	1.52E-02	1.18E-02	2.59E-02	2.42E-03	-7.59E-03
EP-terrestrial	mol N eq.	1.17E+00	1.32E-01	1.15E-01	1.67E-01	1.30E-01	2.85E-01	2.65E-02	-8.78E-02
POCP	kg NMVOC eq.	3.05E-01	4.22E-02	2.99E-02	4.59E-02	4.17E-02	7.95E-02	7.66E-03	-2.44E-02
ADP-minerals&metals*	kg Sb eq.	6.35E-04	2.23E-05	5.94E-05	1.68E-06	2.20E-05	2.73E-05	2.35E-06	-2.97E-05
ADP-fossil*	MJ, net calorific value	2.34E+03	1.43E+02	6.23E+01	4.45E+01	1.41E+02	1.42E+02	1.90E+01	-4.09E+01
WDP*	m3 world eq. deprived	1.43E+01	6.38E-01	1.34E+00	1.20E-01	6.31E-01	1.35E+00	7.23E-02	-5.48E-01

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.

Resource use indicators

		A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ, net calorific value	3.02E+02	1.61E+00	3.79E+00	2.54E-01	1.59E+00	7.78E+00	2.25E-01	-2.40E+00
PERM	MJ, net calorific value	5.86E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, net calorific value	8.88E+02	1.61E+00	3.79E+00	2.54E-01	1.59E+00	7.78E+00	2.25E-01	-2.40E+00
PENRE	MJ, net calorific value	6.30E+02	1.43E+02	6.23E+01	4.45E+01	1.41E+02	1.42E+02	1.90E+01	-4.09E+01
PENRM	MJ, net calorific value	1.93E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ, net calorific value	2.56E+03	1.43E+02	6.23E+01	4.45E+01	1.41E+02	1.42E+02	1.90E+01	-4.09E+01
SM	kg	7.12E+01	3.96E-02	1.72E-02	1.74E-02	3.91E-02	5.11E-02	5.29E-03	-4.46E-02
RSF	MJ, net calorific value	4.78E+00	4.00E-04	2.79E-04	5.70E-05	3.95E-04	7.43E-04	9.86E-05	-2.55E-04
NRSF	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	3.49E-01	1.85E-02	1.11E-01	2.70E-03	1.83E-02	7.89E-02	1.65E-02	-1.27E+00

PERE = Use of renewable primary energy resources as energy; PERM = Use of renewable primary energy resources as raw materials; PERT = Total use of renewable primary energy; PENRE = Use of non renewable primary energy as energy; PENRM = Use of non renewable primary energy as raw materials; PENRT = Total use of non renewable primary energy; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Use of net fresh water

Waste indicators

		A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	2.52E+01	1.89E-01	2.40E-01	5.96E-02	1.87E-01	3.08E-01	2.49E-02	-2.68E-01
NHWD	kg	5.10E+02	3.11E+00	6.34E+00	4.19E-01	3.07E+00	1.84E+02	3.59E-01	-4.15E+00
RWD	kg	3.13E-03	9.54E-04	2.99E-04	3.13E-04	9.43E-04	9.56E-04	1.26E-04	-1.63E-04

HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed.

Output flow indicators

		A1-A3	A4	A5	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
Material for recycling	kg	0.00E+00	0.00E+00	1.05E+01	0.00E+00	0.00E+00	9.00E+02	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
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	2.69E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

		A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq.	5.57E+01	9.49E+00	1.17E+01	3.31E+00	9.38E+00	8.24E+00	8.41E-01	-3.50E+00

References

ISO 14020:2023 Environmental statements and programmes for products. Principles and general requirements
ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations. Principles and procedures.
ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.
ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.
EN 15804:2012+A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.
LCA background report 05.07.2024.

bm certification

LCA study made by: Dr. Ing. Kaspars Zudrags

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