DAPHABITAT SYSTEM ENVIRONMENTAL PRODUCT DECLARATION

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[ACCORDING TO ISO 14025, EN 15804:2012+A2:2019 AND EN 15942]

Declaration number: DAP 006:2024

SECOLITE® CEMENT BOARD

ISSUE DATE: 10/07/2024 **VALID UNTIL: 09/07/2029**

PLACACEM, LDA.

SECOLITE®
The Future of Cement Board

Cluster Habitat Sustentável

Version 1.4.1 Ed. March 2024

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1. GENERAL INFORMATION

1.1. The DAPHAbitat System

Program operator:	Sustainable Construction Platform www.clusterhabitat.pt geral@clusterhabitat.pt
Address:	Departamento Engenharia Civil Universidade de Aveiro 3810-193 Aveiro
Email address:	deptecnico@clusterhabitat.pt
Telephone number:	(+351) 234 401576
Website:	www.daphabitat.pt
Logo:	

1.2. EPD owner

Name of the owner:	PLACACEM, Lda.
Production site:	Zona Industrial de Vagos, Lote 50 e 52, 3840-385, Vagos, Portugal
Address (head office):	Zona Industrial de Vagos, Lote 50 e 52, 3840-385, Vagos, Portugal
Telephone:	+351 234109346
E-mail:	geral@secolite.eu
Website:	https://secolite.eu/en
Logo:	
Information concerning the applicable management Systems:	Quality Management System (NP EN ISO 9001:2015) Environmental Management System (NP EN ISO 14001:2015)
Specific aspects regarding the production:	EN 12467:2012+A2:2018 - Fibre-cement flat sheets. Product specification and test methods
Organization's environmental policy:	PLACACEM, Lda: VISION: To be the leading provider of innovative cement board solutions. MISSION: We offer our customers high-quality, durable and easy-to-use cement board systems that meet their most challenging applications. VALUES: Quality; Sustainability; Innovation; Commitment to customers and employees. QUALITY AND ENVIRONMENT POLICY PLACACEM LDA's policy aims to promote excellence in its activities, particularly in the manufacture and sale of cement boards, which includes the following items: •Commitment to complying with legislation and all applicable regulatory requirements. •Personalized attention to the Customer and commitment to meeting their requirements, promoting their satisfaction. •Professional and personal development of employees, as well as a spirit of teamwork. •Raising awareness and training employees to ensure quality in the tasks they perform. •Commitment to high quality and the continuous improvement of the Quality Management System through the establishment and review of principles, objectives, targets, systematic evaluation, and the

adaptation to the context of the organization of the interested parties and the risks and opportunities inherent in its activity, improving the production process and the organization's processes.
•Complying with environmental legal requirements and other relevant requirements.
•Commitment to the continuous improvement of the environmental management system to guarantee sustainable development and the preservation of the environment.
•Adopt the necessary measures to prevent environmental risks.
•Communicate to suppliers and partners, customers and consumers all the principles by which PLACACEM LDA is governed to contribute to global environmental awareness.

1.3. Information concerning the EPD

Authors:	EcoLab - Laboratório de Física e Tecnologia das Construções da Universidade do Minho Ricardo Mateus e Cláudia Jacinto
Contact of the authors:	Campus de Azurém, Alameda da Universidade, 4800-058 Guimarães e-mail: ecolab@civil.uminho.pt
Issue date:	10/07/2024
Registration date:	29/07/2024
Registration number:	DAP 006:2024
Valid until:	09/07/2029
Representativity of the EPD (location, manufacturer, group of manufacturers):	EPD of SECOLITE® cement board (Portland Cement Lightweight Boards) produced by one (1) industrial unit belonging to one (1) producer (PLACACEM Lda).
Where to consult explanatory material:	https://secolite.eu/en
Type of EPD:	EPD from cradle-to-gate with modules C and D (A1-A3, C1-C4 e D)

1.4. Demonstration of the verification

External independent verification, accordingly with the standard ISO 14025:2010 and EN 15804:2012+A2:2019

Certification Body	Verifier
(CERTIF – Associação para a Certificação)	(Ana Cláudia Dias)

1.5. EPD Registration

Programme operator

(Plataforma para a Construção Sustentável)

1.6. PCR (product category rules) basic model

Name:	PCR: Basic module for construction products and services
Issue date:	Edition August 2023
Number of registration on the data base:	RCP-mb001
Version:	Version 2.3
Identification and contact of the coordinator (s):	Marisa Almeida | marisa@ctcv.pt Luís Arroja | arroja@ua.pt José Dinis Silvestre | jose.silvestre@ist.utl.pt
Identification and contact of the authors:	Marisa Almeida | marisa@ctcv.pt Luís Arroja | arroja@ua.pt José Silvestre | jds@civil.ist.utl.pt Fausto Freire Cristina Rocha Ana Paula Duarte Ana Cláudia Dias Helena Gervásio Victor Ferreira Ricardo Mateus António Baio Dias
Composition of the Sectorial Panel:	-
Consultation period:	18/11/2015 - 18/01/2016
Valid until:	01/06/2027

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

1.7. Relevant c-PCR (Complementary product category rules)

Name:	PCR: Wall covering
Issue date:	June 2022
Number of registration on the data base:	RCP002:2014
Version:	Version 1.2
Identification and contact of the coordinator (s):	Luís Arroja | arroja@ua.pt Marisa Almeida | marisa@ctcv.pt
Identification and contact of the authors:	Ana Cláudia Dias Luís Arroja | arroja@ua.pt Marisa Almeida | marisa@ctcv.pt
Composition of the Sectorial Panel:	RMC - Revestimentos de Mármores Compactos, SA Dominó - Indústrias Cerâmicas, SA Sonae Indústrias, SGPS APICER - Associação Portuguesa da Indústria de Cerâmica
Consultation period:	12/08/2013 - 30/11/2013
Valid until:	01/06/2027

1.8. Information concerning the product/product class

Identification of the product:	SECOLITE® Cement Board
Illustration of the product:	
Brief description of the product:	SECOLITE® is a lightweight Portland cement and aggregate board, reinforced on both sides with a glass fibre mesh. The longitudinal edges are formed, and the transverse edges are cut. They are suitable for the most demanding environments and can be used in the construction of ceilings, walls, and exterior and interior partitions. SECOLITE® Cement Boards can be installed vertically or horizontally in steel or wooden structures and are easily cut with a stylus and fixed to the profiles with screws. They can also be finished directly and used as a support for tiles, plaster, paint or ETICS systems.
Main technical characteristics of the product:	Table 1: Technical characteristics of the product

Essential Features	Performance	Harmonized Standard
Classification	Type NT/Category B Class I	EN 12467:2012+A2:2018
Nominal Thickness Tolerance	± 10% about Nominal	EN 12467:2012+A2:2018
Nominal Width Tolerance	± 0.3% about Nominal, Level I	EN 12467:2012+A2:2018
Nominal Length Tolerance	± 5 mm, Level I	EN 12467:2012+A2:2018
Bordos' Straightness	≤ 0.1%, Level I	EN 12467:2012+A2:2018
Bulk Density	≤ 4 mm/m, Level II	EN 12467:2012+A2:2018
Moisture Content	10%	EN 322
Impermeability to water	Impermeable	EN 12467:2012+A2:2018
Dimensional Stability (Length)	$\delta I_{65.85}$=0.01%, $\delta I_{65.30}$=-0.03%	EN 318
Dimensional Stability (Thickness)	$\delta I_{65.85}$=0.1%, $\delta t_{65.30}$=-0.1%	EN 318
Flexural Strength (MOR)	>4MPa	EN 12467:2012+A2:2018
Compressive Strength	$f_{c,0,k}$=2.28MPa (parallel) $f_{c,90,k}$=2.32MPa (perpendicular)	EN 789
Freeze-Freeze Resistance	Passes, 25 cycles, R_L=0.93	EN 12467:2012+A2:2018
Hot Water Resistance	Passes, R_L= 0.76	EN 12467:2012+A2:2018
Resistance to immersion-drying	Passes, 25 cycles R_L=0.84	EN 12467:2012+A2:2018
Resistance to Heat-Rain	Passes, 25 cycles	EN 12467:2012+A2:2018
Reaction to Fire	A1 Non-Combustible	EN 13501
Steam Transmission	μ=40.9	EN ISO 12572
Thermal Conductivity	0.223 W/m.ºC	EN 12664
Fungal Resistance	10 – No Growth	-

Table 2: Information on basic physical and chemical properties

Physical state	Solid
Colour	Brownish grey
Odor	Odourless
Melting point	> 1200 ^{o}C

	Flammability: Non-flammable Solubility: Insoluble in water Apparent density: 1000 - 1200 kg/m³
Description of the product's application/use:	SECOLITE® Cement Board is intended to be used for the non-structural cladding of interior and exterior walls, for the manufacture of floor construction elements, for structural applications for wall cladding and for the reinforcement of walls, ceilings and roof truss structures with wooden or steel structure. SECOLITE® Cement Board can be fixed to wooden or metal structures. The profiles must be securely fixed to the structure using suitable fixings. Depending on the loads applied to the board and the additional support, reinforcements between profiles may be required.
Placing on the market / Rules of application in the market / Technical rules of the product:	**CE marking** (Regulation No 305/2011) **EN 12467:2012 +A2:2018** - Flat fibre cement boards. Product specifications and test methods **EN 13501-1:2018** - Fire resistance of construction materials and elements
Quality control:	Certification in the standard for Quality Management Systems, **NP EN ISO 9001:2015**, guaranteeing compliance for quality control in production within the industrial unit.
Special delivery conditions:	SECOLITE® cement boards are shipped on pallets whose units vary according to their size (for example, 2400x1200x12.5 boards are shipped on pallets of 36 boards). A forklift with a capacity of 2 tonnes is recommended and it must be checked that the storage areas can support the weight of the pallets (1500kg/pallet). The pallets should be stacked with care to ensure their stability, not more than six high.
Components and substances to declare:	The product in question is the result of a mixture of different substances. SECOLITE® cement boards are made from Portland cement, inorganic aggregates and reinforced with glass fibre. These substances are not considered dangerous. Table 3: Components and chemical substances

Name of the substance	Composition (%)	Nº CAS	REACH Registration Nº
Portland cement	Portland cement, inorganic aggregates and glass fibre reinforcements	65997-15-1	Not suitable

This product contains no potentially hazardous candidate substances listed in Regulation (EC) No 1907/2006 (REACH), art. 59, in concentrations greater than 0.1%.

Where explanatory material may be obtained:	The information can be found at the following link: https://secolite.eu/en/products/secolite-cement-board
History of the LCA studies:	Not applicable.

1.9. Calculation rules of the LCA

Functional unit:	--
Declared unit:	1 tonne (1000 kg) of SECOLITE® Cement Boards. The product can be commercialised in different sizes. Since the production process is the same, regardless of the thickness or format of the products, it is possible to convert the results of this EPD to other units such as, for example, m², multiplying these results by the conversion factors presented in Table 4. Table 4: Conversion factors from results to product area (m²).

Thickness (mm)	Conversion factor
15	1.65E-02
12.5	1.38E-02
9	9.90E-03
8	8.80E-03

System boundaries:	EPD from cradle-to-gate with modules C and D (A1-A3, C1-C4 e D)

Criteria for the exclusion:	According to EN 15804:2012+A2:2019, the exclusion criterion for unit processes is 1% of the total energy consumed and 1% of the total mass of the inputs, with special attention paid to not exceeding a total of 5% of energy and mass flows excluded at each stage of the LCA. In the case of this EPD, all known flows were included since the company provided all the information. However, the following processes were not considered in this study: •Environmental loads from the construction of industrial infrastructure, manufacture, and exchange of equipment and machinery; •Infrastructure environmental loads (vehicle manufacturing, road maintenance) associated with the transport of pre-products and raw materials; •Environmental loads relating to consumables or waste produced in administrative areas and laboratories, as they are not directly associated with the production process; •Environmental loads related to the packaging materials of the raw materials, since the company uses silos for storing most of the raw materials.
Assumption and limitations	The data collected, the results of the environmental impacts and other indicators presented in this EPD refer to the production period from July 2022 to June 2023 of a product (SECOLITE® Cement Boards) that can be produced in one (1) industrial unit (Placacem).
Quality and other characteristics about the information used in the LCA:	All primary process data (controlled by the manufacturer at the factory) was collected at the factory based on Placacem's internal records. Consumption data was validated with global consumption invoices and unit control balances, and its quality and representativeness were verified. The processes in the Ecoinvent v3.9.1 database were used as a support basis for the construction of the inventory for this study. The processes considered to produce electricity and natural gas consumed during the production of the SECOLITE® board were modified and updated to better fit the national reality. Additionally, for some materials, data were obtained from the literature. Overall, data quality is considered good.
Allocation rules:	The factory where SECOLITE® Cement Board is produced does not produce other products. Therefore, using a methodology to allocate consumption and emissions associated with the product under study was unnecessary.
Software used for the assessment:	SimaPro, version 9.5.0.0.
Background database used for the LCA:	Ecoinvent Database v3.9.1 – Ecoinvent
Comparability of EPD for construction products	The EPD of construction products and services cannot be comparable in case they are not produced according to EN 15804 and EN 15948 and according to the comparability conditions determined by ISO 14025.

1.10. Use of average environmental performance

Not applicable.

1.11. Technical information for Reference Service Life (RSL)

Not applicable, as this EPD does not include the use stage (module B).

1.12. Flow diagram of input and output of the processes

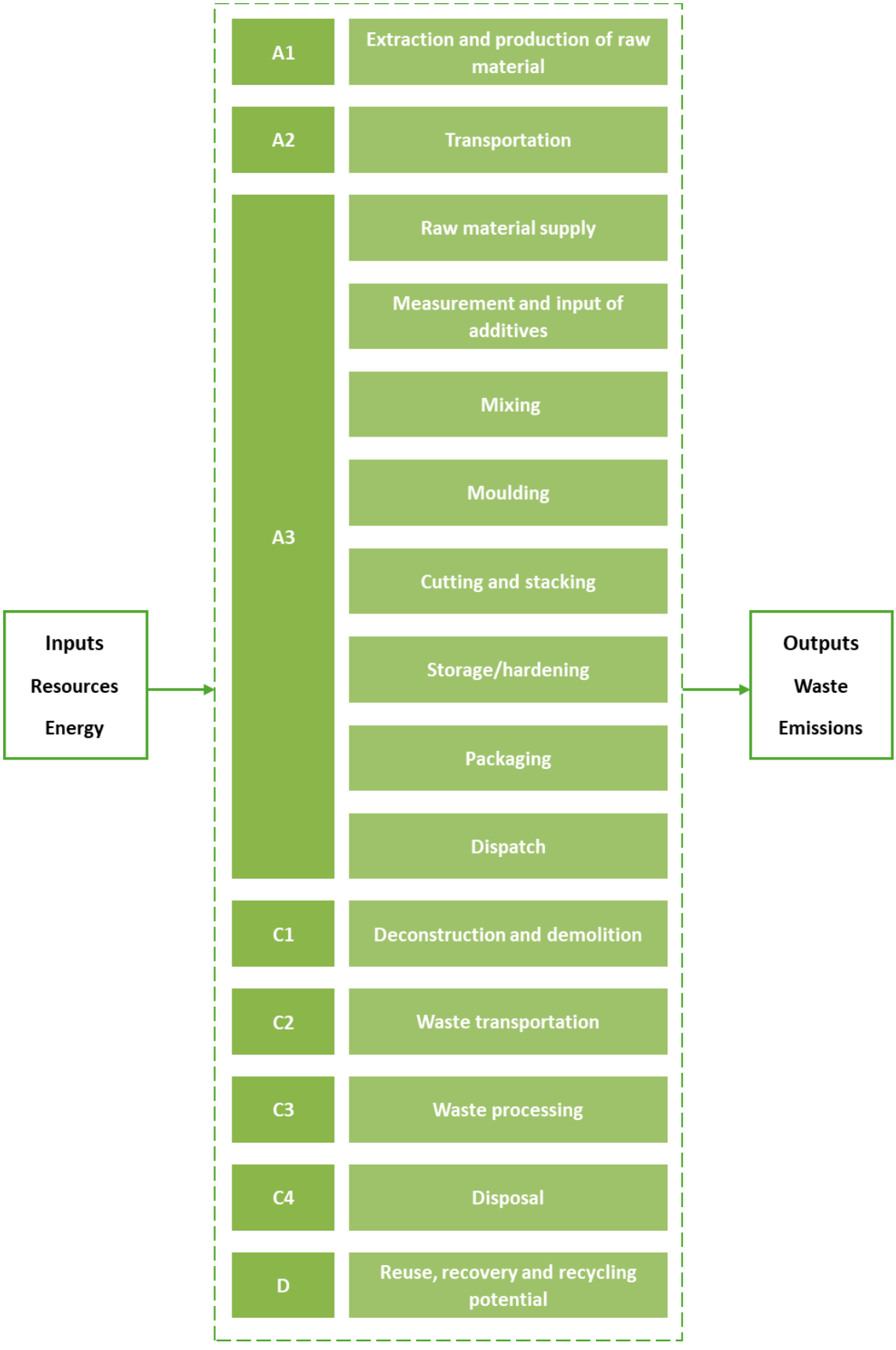

Figure 1: Activities related to the SECOLITE® cement board associated with each life cycle stage.

Detailed description of the stages:

1. Supply

The production process for SECOLITE® Cement Boards begins with the acquisition of raw materials. These are purchased according to production estimates, received, and stored in silos or in the factory's internal warehouse.

2. Measurement and input of additives

Based on production requirements, the additives to be used in the manufacturing process are calculated and dosed for the mix.

3. Mixing

All the solid and liquid materials are then fed into the electric mixer to form a homogeneous concrete paste.

4. Moulding

The concrete paste and the fibreglass mesh are poured into a continuous line where the cement board is manufactured.

5. Cutting and stacking

The next stage involves cutting and stacking the boards on pallets according to the length requested in the production plan (from 2000cm to 3000cm).

6. Storage

In the storage phase, the pallets are placed in towers in the factory's internal warehouse, where the boards undergo a controlled curing process.

7. Packaging

The material is separated for painting and packaging according to the output plan. The edges of the boards are painted, and they are packed onto pallets.

8. Dispatch

According to the orders received, the labels are affixed, and the material is loaded onto heavy goods vehicles for despatch to customers.

2. CORE ENVIRONMENTAL IMPACT INDICATORS

2.1. DESCRIPTION OF THE SYSTEM BOUNDARIES

(✓= included; ND = module not declared)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
Raw material supply	Transport	Manufacturing	Transport	Construction installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-constructions, demolition	Transport	Waste processing	Disposal	Re-use, recovery, recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
✓	✓	✓	ND	ND	ND	ND	ND	ND	ND	ND	ND	✓	✓	✓	✓	✓

Modules **A1-A3** include the processes that supply energy and material inputs to the system (**A1**), transport to the factory gate (**A2**) and the manufacturing, packaging and waste processing processes during the production phase (**A3**).

The construction stage (modules A4-A5) and the use stage (modules B1-B7) were not considered in this assessment and are excluded from the system boundaries.

Module **C1** refers to the process of demolition and deconstruction of SECOLITE® Cement Boards.

Module **C2** considers the transport of discarded SECOLITE® Cement Boards to a recycling process or landfill.

Module **C3** considers all waste processing processes (treatment, crushing, etc.) that are suitable for recycling cement boards.

Module **C4** includes all landfill processes, including pre-treatment and landfill site management.

Module **D** includes the benefits or burdens on the environment generated by reusable products, recyclable materials and/or energy flows leaving the system under analysis.

2.1.1. JUSTIFICATION FOR THE EXEMPTION TO DECLARE MODULES C1, C2, C3, C4 AND D

Not applicable.

2.2. Core environmental impact indicators

	Global warming potential total; GWP-total	Global warming potential fossil; GWP-fossil	Global warming potential biogenic; GWP-biogenic	Global warming potential land use and land use change; GWP-luluc	Depletion potential of the stratospheric ozone layer; ODP	Acidification potential; AP
Unit	kg CO_2 eq.	kg CO_2 eq.	kg CO_2 eq.	kg CO_2 eq.	kg CFC 11 eq.	mol H^+ eq.
Modules A1-A3	5.34E+02	5.58E+02	-2.41E+01	4.38E-01	1.33E-05	2.45E+00
Module C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Module C2	3.77E+00	3.77E+00	3.41E-03	1.83E-03	8.19E-08	1.23E-02
Module C3	9.65E+00	9.60E+00	4.40E-02	4.68E-03	1.73E-07	7.86E-02
Module C4	4.17E+00	4.16E+00	3.03E-03	4.75E-03	9.06E-08	3.15E-02
Module D	-2.56E+00	-2.47E+00	-9.54E-02	-1.82E-03	-4.07E-08	-2.04E-02

LEGEND:

Product stage

End - of - life stage

Benefits and loads beyond the system boundary

NOTES:
Values expressed by declared unit (1 t of SECOLITE® boards).

	Eutrophication potential aquatic freshwater; EP-freshwater	Eutrophication potential aquatic marine; EP-marine	Eutrophication potential terrestrial; EP-terrestrial	Formation potential of tropospheric ozone; POCP	Abiotic depletion potential for non-fossil resources ADP-minerals&metals	Abiotic depletion potential for fossil resources potential ADP-fossil	Water (user) deprivation potential; WDP
Units	kg P eq.	kg N eq.	mol N eq.	Kg COVNM eq.	kg Sb eq.	MJ, P.C.I	m^3 World eq. deprived
Modules A1-A3	9.00E-02	5.13E-01	5.65E+00	1.90E+00	7.64E-03	4.98E+03	4.87E+02
Module C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Module C2	2.63E-04	4.22E-03	4.46E-02	1.83E-02	1.21E-05	5.34E+01	2.18E-01
Module C3	1.57E-03	3.35E-02	3.62E-01	1.10E-01	1.96E-05	1.48E+02	1.80E+00
Module C4	3.00E-04	1.31E-02	1.41E-01	4.53E-02	6.10E-06	7.69E+01	2.13E+00
Module D	-5.31E-04	-6.04E-03	-8.08E-02	-2.06E-02	-3.42E-05	-3.68E+01	-6.10E-01

LEGENDA:

Product stage

End - of - life stage

Benefits and loads beyond the system boundary

NOTES: Values expressed by declared unit (1 t of SECOLITE® boards).

"The results obtained for the indicators "Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)", "Abiotic depletion potential for fossil resources potential (ADP-fossil)" and "Water (user) deprivation potential (WDP)" should be used with caution since the uncertainties associated with them are high or there is little experience with the indicator."

2.3. Additional environmental impact indicators

	Potential incidence of disease due to PM emissions PM	Potential Human exposure efficiency relative to U235 IRP	Potential Comparative Toxic Unit for ecosystems ETP-fw	Potential Comparative Toxic Unit for humans, cancer effects HTP-c	Potential Comparative Toxic Unit for humans, not cancer effects HTP-nc	Potential soil quality index SQP
Unit	Disease incidence	kBq U 235 eq.	CTUe	CTUh	CTUh	-
Modules A1-A3	2.28E-05	3.11E+01	2.45E+03	3.11E-07	7.67E-06	1.47E+06
Module C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Module C2	3.00E-07	7.14E-02	2.63E+01	1.71E-09	3.76E-08	3.18E+01
Module C3	1.24E-05	7.10E-01	6.30E+01	4.09E-09	5.05E-08	1.01E+02
Module C4	2.98E-06	5.47E-02	4.00E+01	1.79E-09	2.38E-08	1.02E+02
Module D	-4.48E-07	-6.12E-01	-1.78E+01	-4.80E-09	-3.98E-08	-7.26E+01

LEGEND:

Product stage

End-of-life stage

Benefits and loads beyond the system boundary

NOTES:
Values expressed by declared unit (1 t of SECOLITE® boards).
The impact indicator "POTENTIAL HUMAN EXPOSURE EFFICIENCY RELATIVE TO U235" focuses mainly on the possible impact of a low dose of ionising radiation on human health resulting from the nuclear fuel cycle. It does not consider effects arising from possible nuclear accidents, occupational exposure or the disposal of radioactive waste in underground facilities. Potential ionising radiation from soil, radon and some building materials is also not measured by this indicator.
The results of the indicators "POTENTIAL COMPARATIVE TOXIC UNIT FOR ECOSYSTEMS (ETP-FW)", "POTENTIAL COMPARATIVE TOXIC UNIT FOR HUMANS, CANCER EFFECTS", "POTENTIAL COMPARATIVE TOXIC UNIT FOR HUMANS, NOT CANCER EFFECTS" and "POTENTIAL SOIL QUALITY INDEX" should be used with caution as the uncertainties associated with them are high or there is little experience with the indicator.

2.4. Indicators describing resource use

	Primary energy					
	EPR	RR	TRR	EPNR	RNR	TRNR
Unit	MJ, P.C.I.	MJ, P.C.I.	MJ, P.C.I.	MJ, P.C.I.	MJ, P.C.I.	MJ, P.C.I.
Modules A1-A3	5.81E+02	4.48E+02	1.03E+03	4.94E+03	4.05E+01	4.98E+03
Module C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Module C2	8.28E-01	0.00E+00	8.28E-01	5.34E+01	0.00E+00	5.34E+01
Module C3	6.01E+00	0.00E+00	6.01E+00	1.48E+02	0.00E+00	1.48E+02
Module C4	7.48E-01	0.00E+00	7.48E-01	7.70E+01	0.00E+00	7.70E+01
Module D	-1.18E+01	0.00E+00	-1.18E+01	-3.68E+01	0.00E+00	-3.68E+01

LEGEND:

Product stage

End-of-life stage

Benefits and loads beyond the system boundary

EPR = use of renewable primary energy excluding renewable primary energy resources used as raw materials; RR = use of renewable primary energy resources used as raw materials; TRR = total use of renewable primary energy resources (EPR + RR); EPNR = use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; RNR = use of non-renewable primary energy resources used as raw materials; TRNR = total use of non-renewable primary energy resources (EPRN + RNR);

NOTE: Values expressed by declared unit (1 t of SECOLITE® boards).

	Secondary materials and fuels, and use of water			
	MS	CSR	CSNR	Net use of fresh water
Unit	kg	MJ, P.C.I.	MJ, P.C.I.	m^3
Modules A1-A3	0.00E+00	0.00E+00	0.00E+00	8.17E+00
Module C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Module C2	0.00E+00	0.00E+00	0.00E+00	1.41E-02
Module C3	0.00E+00	0.00E+00	0.00E+00	1.12E-01
Module C4	0.00E+00	0.00E+00	0.00E+00	1.04E-01
Module D	0.00E+00	0.00E+00	0.00E+00	-5.10E-01

LEGEND:

Product stage

End-of-life stage

Benefits and loads beyond the system boundary

MS = use of secondary material; CSR = use of renewable secondary fuels; CSNR = use of non-renewable secondary fuels.

NOTE: Values expressed by declared unit (1 t of SECOLITE® boards).

2.5. Other environmental information describing different waste categories

	Hazardous waste disposed	Non-hazardous waste disposed	Radioactive waste disposed
Unit	kg	kg	kg
Modules A1-A3	9.69E-02	8.09E+01	8.97E-03
Module C1	0.00E+00	0.00E+00	0.00E+00
Module C2	3.40E-04	2.61E+00	1.73E-05
Module C3	8.27E-04	1.23E+02	1.80E-04
Module C4	4.46E-04	3.01E+02	1.29E-05
Module D	-2.43E-04	-6.12E-01	-1.38E-04

LEGENDA:

Product stage

End-of-life stage

Benefits and loads beyond the system boundary

NOTE: Values expressed by declared unit (1 t of SECOLITE® boards).
The characteristics that make waste hazardous are described in the applicable legislation in force, for example in the European Waste Framework Directive.

2.6. Environmental information describing output flows

	Components for re-use	Materials for recycling	Materials for energy recovery	Exported energy
Unit	kg	kg	kg	MJ
Modules A1-A3	0.00E+00	1.04E+01	0.00E+00	0.00E+00
Module C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Module C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Module C3	0.00E+00	7.00E+02	0.00E+00	0.00E+00
Module C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Module D	0.00E+00	0.00E+00	0.00E+00	0.00E+00

LEGEND:

Product stage

End-of-life stage

Benefits and loads beyond the system boundary

NOTE: Values expressed by declared unit (1 t of SECOLITE® boards).
The characteristics that make waste hazardous are described in the applicable legislation in force, for example in the European Waste Framework Directive.

2.7. Information describing the biogenic carbon content at the factory gate

Biogenic carbon content*	Units**	Modules A1-A3 (results)
Biogenic carbon content in product	kg C	Not applicable (inorganic product)
Biogenic carbon content in accompanying packaging	kg C	1.07E+01

* 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2.

** This information can be omitted whenever the content of biogenic carbon in the product, or in the respective packaging, is less than 5% of the mass of the product, or the respective packaging.

3. SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

3.1. C1 De-construction, demolition – End of life of the product

It was assumed, as in the case of other types of finishing products, notably ceramic cladding waste by the EN 17160:2019 standard, that stage C1 is not relevant for cement cladding panels since the impacts resulting from this stage are very small.

3.2. C2 Transport – End of life of the product

The scenario considered at this stage is that recommended by the EN 17160:2019 standard, which corresponds to transporting demolition waste from cement panels to a storage or treatment centre for construction or demolition waste, using a lorry and considering an average transport distance of 20 km.

3.3. C3 Waste processing for reuse, recovery and/or recycling – End of life of the product

For modelling this stage, the scenario defined by the EN 17160:2019 standard was considered, where 70% of the mass of the waste generated at the end of the product's useful life is processed so that it can be recycled.

3.4. C4 Disposal – End of life of the product

For the modelling of this stage, the scenario defined by the EN 17160:2019 standard was considered, which 30% of the mass of waste generated at the end of the product's useful life is landfilled.

3.5. Scenario and technical information for module D

Parameter	Units/comments	Results expressed per functional or declared unit
		Scenario D
Scenario		It was considered that 70% of the waste from SECOLITE® Cement Boards is recovered for end-of-life valorization (conservative estimate) after crushing and as a replacement for natural aggregates, according to statistical data on Construction and Demolition Waste (CDW) from the Portuguese Environment Agency (APA).
Net output flow specified per material	Units as appropriate	700 kg per ton of SECOLITE® Cement Boards
Avoid production	Units as appropriate	700 kg of natural aggregates per ton of SECOLITE® Cement Boards
Location of end-of-waste point		At the recycling site
Point of functional equivalence		It is considered that the SECOLITE® board waste, after crushing, has a quality similar to that of natural aggregates.

3.6. Additional information on release of dangerous substances to indoor air, soil, and water during the use stage

This is irrelevant, as this product does not contain any potentially dangerous substances listed in Regulation (EC) No 1907/2006 (REACH) in concentrations above 0.1%.

4. REFERENCES

✓ **General Instructions of the DAPHabitat System**, Version 2.1, Edition August 2023 (in www.daphabitat.pt);

✓ **PCR – basic module for construction products and services**. DAPHabitat System. Version 2.3, August 2023 (in www.daphabitat.pt);

✓ **PCR - Wall covering**. DAPHabitat System. Version 1.2, June 2022 (in www.daphabitat.pt);

✓ **ISO 14025:2009** Environmental declarations and labels – Type III environmental declarations – Principles and procedures;

✓ **EN 15804:2012 + A2:2019** Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products;

✓ **EN 15942:2021** Sustainability of construction works – Environmental product declarations – Communication format business-to-business.

✓ **EN 17160:2019** Product category rules for ceramic tiles.