



ENVIRONMENTAL AND HEALTH PRODUCT DECLARATION

CAREA® ARDAL (installation without under-structure)

*Environmental product declaration in accordance with standards NF EN ISO 14025, NF EN 15804+A1
And its national complement NF EN 15804/CN*

February 2020



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Warning notice

The information contained in this declaration is provided under the responsibility of CAREA (producer of the French EPD) in accordance with NF EN 15804+A1, its national supplement NF EN 15804/CN

Any use, in whole or in part, of the information provided in this document must at least be accompanied by a complete reference to the original French EPD and to its producer, who may submit a complete copy.

It is recalled that the results of the study are based only on facts, circumstances and assumptions that were submitted during the study. If these facts, circumstances and assumptions differ, the results may change.

In addition, the results of the study as a whole should be considered in the light of the hypotheses, and not in isolation.

CEN standard EN 15804+A1 serves as the Product Category Definition Rules (PCR).

Reading guide

The display of inventory data complies with the requirements of NF EN 15804+A1.
In the following tables 2.53E-06 should be read: 2.53×10^{-6} (scientific writing).

The units used are specified before each flow, they are:

- the kilogram « kg »,
- the gram « g »,
- the liter « l »,
- the kilowatt-hour « kWh »,
- the mega joule « MJ ».

Abbreviations:

- LCA: Life Cycle Analysis
- EPD: Environmental Product Declaration
- RSL: Reference Service Life
- FU: Functional Unit
- LCV: Lower Calorific Value

Precautionary use of the French EPD for product comparison

French EPDs for construction products may not be comparable if they do not comply with the NF EN 15804+A1 standard.

The standard NF EN 15804+A1 defines in § 5.3 *Comparability of DEPs for construction products*, the conditions under which construction products can be compared, based on the information provided by the DEP: " A comparison of the environmental performance of construction products using EPD information should be based on the use of the products and their impacts on the building, and should take into account the entire life cycle (all information modules). "

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1 INTRODUCTION

The framework used for the presentation of the product environmental statement is based on the national complement NF EN 15804/CN

An accompanying report of the declaration has been established and can be read, under confidentiality agreement, at the head office of CAREA.


The information contained in this declaration is provided under the responsibility of CAREA.

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2 GENERAL INFORMATION

1. Name and address of declarant:
CAREA
ZA Bel Air de Combrée
49520 COMBRÉE
2. The site, manufacturer for whom the French EPD is representative:
CAREA : ZA Bel Air de Combrée 49520 COMBRÉE
3. Type of French EPD: "from cradle to grave", without module D
4. Type of French EPD: individual
5. Date of publication: February 2020
6. Validation end date: February 2025
7. The commercial references/Product identification: CAREA® ARDAL
8. Verification:

The norm NF EN 15804+A1 of CEN is used as RCP a).	
Independent verification of the declaration, in accordance with EN ISO 14025:2010	
<input type="checkbox"/> intern <input checked="" type="checkbox"/> extern	
Verification : 	Auditor's name: <i>Frédéric Rossi (Esteana)</i> Verification program: <i>FDES-INIES Program</i> Address: <i>Association HQE. 4, avenue du Recteur Poincaré - 75016 Paris.</i> Web site: <i>http://www.inies.fr/accueil/</i>
a) Rules for defining product categories b) Optional for communication between companies, mandatory for communication between a company and its clients (see EN ISO 14025:2010. 9.4).	

9. Place of production: Combrée, France
10. Distribution circuit: BtoB

3 PRODUCT DESCRIPTION AND FUNCTIONAL UNIT

11. Functional unit description:
"Protect (and dress) 1m² of façade with a composite mineral panel of 11mm thickness, based on a 50 years reference service life, including accessories required for installation (the potential under-structure is not included)"

12. Product description:
The product is a composite mineral panel mainly comprised of mineral filler bound by a resin. Exterior face is protected by a gel-coat. Panels are fixed on aluminium profiles, included in the EPD scope.
The installation is also possible with under-structure but not include in the EPD scope. Impact results for this type of installation are presented in annex for information.
See technical advice 2/16-1774 et 2.2/14-1659_V1.

13. Description of product use (application field):

The product is intended to be installed on the exterior façade on every type of building, new or refurbished.
See technical advice for more details.

14. Main functional unit feature: area (1m²)

15. Other technical characteristics not included in the functional unit:

Shock resistance: Q1 to Q4

Classification with fire: A2-s1, d0

See technical advice for more details.

16. Description of the main components and/or materials of the products:

Parameter	Unit	Value
Quantity of product	kg/UF	2.46E+01
Main components	-	Mineral filler: > 80% Resin : between 10 and 20% Additives: < 1%
Complementary material	kg/UF	Secondary aluminium under-structure: 7.67E-01 Polypropylene wedge: 4.26E-03
Distribution packaging	kg/UF	Wood trestle: 5.49E-01 Polyethylene film: 4.33E-03 Strips: 1.54E-03
Loss rate during installation	%	15
Loss rate during maintenance	%	-
Justification of provided information	-	The information is provided by CAREA.

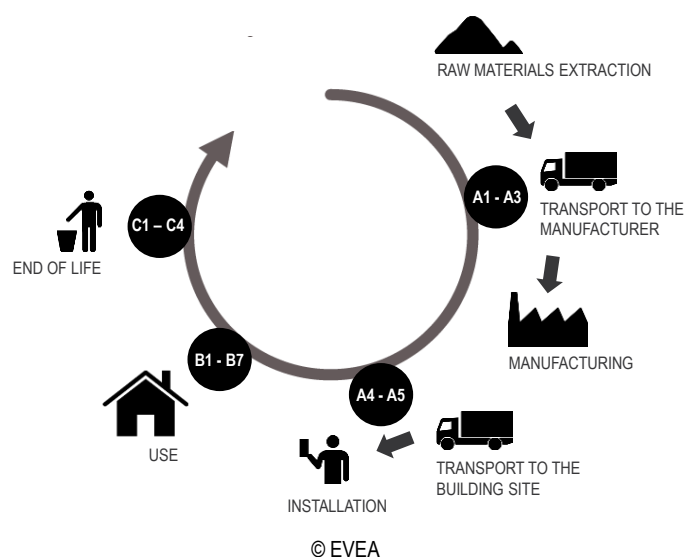
17. The product does not contain substances on the candidate list according to REACH regulation higher than 0.1% by mass.

18. Reference service life description (if applicable and according to §7.2.2 of NF EN 15804+A1)

Parameter	Unit	Value
Reference service life	Years	50
Declared properties from the factory	-	Passed internal quality control. CE marking according to NF EN 15286.
Theoretical application parameters	-	Technical advice 2/16-1774 et 2.2/14-1659_V1
Presumed quality of work	-	The quality of the work is presumed to be in accordance with the manufacturer's recommendations.
Outdoor Environment	-	Design and manufacturing are compliant with CE marking according to NF EN 15286.
Indoor Environment	-	Not concerned.
Use conditions	-	The product use is supposed to be in accordance with the manufacturer's recommendations.
Maintenance	-	Every ten years, a high-pressure cleaning is taking into account (see §4.3).

4 LIFE CYCLE STAGES

Life cycle diagram:



4.1 Production stage, A1-A3

The steps from A1 to A3 include all the processes from raw material extraction to factory transformation.

The panels are made in a normal-pressure atmosphere according to the following steps:

- Preparation of the mould (heating – oil)
- Casting of gel-coat into the mould
- Infrared heating
- Casting of mineral fillet and resin mixture on the gel-coat.
- Smoothing, drying
- Cutting and grooving

4.2 Construction process stage, A4-A5

Transport between factory and construction site:

Parameter	Unit	Value
Scenario description	-	The product is delivered by a truck from the factory to the construction site. The transport distance is an average distance of the deliveries made by CAREA in metropolitan France over the data collection period.
Type of combustible and vehicle consumption or vehicle type	-	Considered vehicles are Euro 5 type trucks with a payload of 16-32 ton.
Distance to the construction site	km	300
Use capacity	%	44 %
Density of the transported product	kg/m ³	2.24E+03
Voluminal capacity using coefficient	-	0.35

Installation in the building:

Parameter	Unit	Value
Scenario description	-	The panel and the under-structure are set manually with an electric screwdriver. Before installation the panel is pre-cut to accommodate anomalies. The energy consumption of a hoisting machine is also taken into account. Installation waste consists of packaging waste and product losses (panel and under-structure).
Auxiliaries inputs for installation	-	-
Water consumption	kg/UF	4.63E-02
Energy consumption and type	kWh/UF	Electricity: 3.73E-02
Other resources	kg/UF	Installation clamp (polyethylene): 7.14E-04
Wastes	-	-
Wood trestle	kg/UF	5.49E-01
Polyethylene film	kg/UF	4.33E-03
Strips	kg/UF	1.54E-03
Polypropylene clamp	kg/UF	7.14E-04
Panel losses	kg/UF	3.70E+00
Understructure losses	kg/UF	1.15E-02
Emissions into air, ground and water	kg/UF	-

4.3 Use life stages (Exclusion of potential savings), B1-B7

B1 Use:

No input/output has been identified for this stage.

B2 Maintenance:

Parameter	Unit	Value/description
Scenario description		The product cleaning is taking into account in accordance with the manufacturer's recommendation.
Maintenance frequency	years	10
Auxiliaries input for maintenance	kg/cycle	-
Waste produced during maintenance (specify materials)	kg	-
Net use of fresh water	liter/UF/cycle	2.60E+00
Energy input during maintenance	kWh/UF/cycle	4.37E-02

B3 Repair:

No repair has been considered necessary over the chosen reference service life.

B4 Replacement:

No replacement has been considered necessary over the chosen reference service life.

B5 Refurbishment:

No refurbishment has been considered necessary over the chosen reference service life.

B6 – B7 Energy and water use:

No consumption has been considered necessary over the chosen reference service life.

4.4 End of life, C1-C4

Parameter	Unit	Value/description
Scenario description		At end of life, the product is disassembled by hand. Only electricity for an electric screwdriver is taken into account. Aluminium and steel from under-structure are recycled, at a rate of 90% ¹ and 83% ² respectively. Remainder is sent to landfill at 100%.
Quantity collected separately	kg/UF	6.90E-01
Quantity collected with mixed construction waste	kg/UF	2.47E+01
Quantity for reuse	kg/UF	-
Quantity for recycling	kg/UF	6.90E-01
Quantity for energy recovery	kg/UF	-
Quantity of disposed product	kg/UF	2.47E+01



4.5 Recycling/reuse/recovery potential, D

Module D is not taken into consideration in this study.

¹ <https://www.european-aluminium.eu/media/1836/20170323-sustainability-performance-report.pdf>

² Life cycle assessment (LCA) for Steel Construction (Commission Européenne, 2002)

5 INFORMATION FOR THE LIFE CYCLE ASSESSMENT CALCULATION

Used PCR	NF EN 15804+A1:2014 and NF EN 15804/CN:2016.
System boundaries	System boundaries respect the limits imposed by the norm NF EN 15804+A1 and its national complement NF EN 15804/CN.
Cut-off rule	The cut-off rules used in this French EPD are those defined in the norm NF EN 15804+A1. Moreover, the inputs and outputs have been taken into account. When no ecoinvent modules exist for a given raw material, specific datasets have been created.
Allocations	A surface allocation has been made by CAREA, in accordance with EN15804.
Geographical and temporal representativeness of primary and secondary data	<p>Generic data from ecoinvent v3.5 (2018). Europe scope data are used in priority, or Swiss. If they are not available, "GLO" data, for world scope, or "RoW" are used.</p> <p>Specific data has been collected by the manufacture for their sole manufacturing site, for the year 2018.</p> <p>Technologies for manufacturing of materials are based on technologies used by the manufacturer for their production processes, or based on European technologies in the case of generic data.</p> <p>Used software:</p> <p> - SimaPro, life cycle assessment software (V9).</p> <p>- Ev-DEC, (www.ev-dec.com), developed by the consulting firm EVEA(www.evea-conseil.com), which help to realize the French EPD.</p> <p></p>
Variability of the results	Not concerned.

6 LIFE CYCLE ASSESSMENT RESULTS

Environmental impacts	Production stage			Construction stage		Use stage							End of life stage				D Profits and costs beyond the system's
	A1 Raw material supply	A2 Transport	A3 Manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 Use of energy	B7 Water consumption	C1 Deconstruction/ demolition	C2 Transport	C3 Waste treatment	C4 Elimination	
Global Warming kg CO ₂ eq/FU	1.23E+01	1.46E+00	1.59E+01	8.84E-01	4.83E+00	0.00E+00	1.41E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E-01	5.64E-03	4.79E-01	NDM
Ozone Depletion kg CFC 11 eq/FU	1.73E-05	2.70E-07	7.33E-06	1.70E-07	3.78E-06	0.00E+00	1.72E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-08	1.31E-09	7.02E-08	NDM
Acidification of soil and water kg SO ₂ eq/FU	5.63E-02	4.71E-03	8.31E-02	2.93E-03	2.33E-02	0.00E+00	8.35E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.29E-04	3.73E-05	1.73E-03	NDM
Eutrophication kg (PO ₄) ³⁻ eq/FU	8.90E-03	7.82E-04	9.22E-03	4.85E-04	3.08E-03	0.00E+00	1.37E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.13E-05	6.48E-06	4.58E-04	NDM
Photochemical ozone creation Ethene eq/FU	2.77E-02	7.59E-04	3.78E-02	5.48E-04	1.02E-02	2.56E-02	6.76E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.92E-05	4.11E-06	3.07E-04	NDM
Depletion of abiotic resources -elements kg Sb eq/FU	4.74E-05	4.48E-06	1.48E-04	1.72E-06	3.24E-05	0.00E+00	1.14E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.08E-07	3.28E-07	3.62E-07	NDM
Depletion of abiotic resources -fossil MJ PCI/FU	2.62E+02	2.22E+01	1.84E+02	1.39E+01	7.50E+01	0.00E+00	1.49E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.02E+00	5.75E-02	6.35E+00	NDM
Water pollution m ³ /FU	1.09E+01	5.24E-01	5.58E+00	3.32E-01	2.67E+00	0.00E+00	5.39E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.77E-02	6.08E-03	1.81E-01	NDM
Air pollution m ³ /FU	1.72E+03	1.56E+02	3.17E+03	1.20E+02	8.07E+02	6.17E+02	2.11E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E+01	1.36E+00	3.75E+01	NDM

Use of resources	Production stage			Construction stage		Use stage							End of life stage				D Profits and costs beyond the system's
	A1 Raw material supply	A2 Transport	A3 Manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 Use of energy	B7 Water consumption	C1 Deconstruction /demolition	C2 Transport	C3 Waste treatment	C4 Elimination	
Renewable primary energy excl. RM MJ PCI/FU	1.02E+01	2.37E-01	3.43E+01	1.50E-01	7.03E+00	0.00E+00	1.38E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.16E-02	2.33E-02	1.21E-01	NDM
Renewable primary energy used as RM MJ PCI/FU	1.15E+00	0.00E+00	8.85E+00	0.00E+00	1.50E+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	NDM
Total renewable primary energy MJ PCI/FU	1.14E+01	2.37E-01	4.31E+01	1.50E-01	8.53E+00	0.00E+00	1.38E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.16E-02	2.33E-02	1.21E-01	NDM
Non-renewable primary energy excl. RM MJ PCI/FU	2.11E+02	2.25E+01	3.58E+02	1.42E+01	9.40E+01	0.00E+00	2.33E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.05E+00	1.81E-01	6.58E+00	NDM
Non-renewable primary energy used as RM MJ PCI/FU	7.22E+01	0.00E+00	2.05E+01	0.00E+00	1.41E+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	NDM
Total Non-renewable primary energy MJ PCI/FU	2.83E+02	2.25E+01	3.78E+02	1.42E+01	1.08E+02	0.00E+00	2.33E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.05E+00	1.81E-01	6.58E+00	NDM
Use of secondary material kg/FU	0.00E+00	0.00E+00	2.30E-01	0.00E+00	3.80E-02	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	NDM
Use of renewable secondary fuels MJ PCI/FU	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	0.00E+00	0.00E+00	NDM
Use of Non-renewable secondary fuels MJ PCI/FU	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	0.00E+00	0.00E+00	NDM
Net use of fresh water m³/FU	1.81E-01	4.08E-03	2.16E-01	2.82E-03	6.30E-02	0.00E+00	1.11E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.72E-04	8.22E-05	6.91E-03	NDM

Waste category	Production stage			Construction stage		Use stage							End of life stage				D Profits and costs beyond the system's borders
	A1 Raw material supply	A2 Transport	A3 Manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 Use of energy	B7 Water consumption	C1 Deconstruction/demolition	C2 Transport	C3 Waste treatment	C4 Elimination	
Hazardous waste disposed kg/FU	2.08E+00	1.39E-02	2.02E+00	8.32E-03	6.45E-01	0.00E+00	5.06E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-03	1.07E-03	1.05E-02	NDM
Non-hazardous waste disposed kg/FU	5.40E+00	1.17E+00	1.01E+01	1.27E+00	6.71E+00	0.00E+00	9.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-01	2.22E-02	2.48E+01	NDM
Radioactive waste disposed kg/FU	4.98E-04	1.52E-04	2.97E-03	9.63E-05	5.75E-04	0.00E+00	3.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-05	1.91E-06	4.05E-05	NDM

Outflows		Production stage			Construction stage		Use stage							End of life stage				D Profits and costs beyond the system's borders
		A1 Raw material supply	A2 Transport	A3 Manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 Use of energy	B7 Water consumption	C1 Deconstruction/de molition	C2 Transport	C3 Waste treatment	C4 Elimination	
Components for re-use kg/FU		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	0.00E+00	0.00E+00	NDM
Materials for recycling kg/FU		0.00E+00	0.00E+00	3.77E+00	0.00E+00	5.66E-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	6.90E-01	0.00E+00	NDM
Materials for energy recovery kg/FU		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	0.00E+00	0.00E+00	NDM
Exported energy MJ/FU	Electricity	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	0.00E+00	0.00E+00	NDM
	Heat	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	0.00E+00	0.00E+00	NDM
	Process gas	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	0.00E+00	0.00E+00	NDM

*NDM : Not declared module

Impact indicator	Unit	Production stage	Construction stage	Use stage	End of life stage	Total
Global Warming	kg CO ₂ eq/UF	2.97E+01	5.72E+00	1.41E-02	6.18E-01	3.60E+01
Ozone Depletion	kg CFC 11 eq/UF	2.49E-05	3.95E-06	1.72E-08	9.61E-08	2.90E-05
Acidification of soil and water	kg SO ₂ eq/UF	1.44E-01	2.62E-02	8.35E-05	2.19E-03	1.73E-01
Eutrophication	kg (PO ₄) ³⁻ eq/UF	1.89E-02	3.57E-03	1.37E-05	5.36E-04	2.30E-02
Photochemical ozone creation	Ethene eq/UF	6.63E-02	1.07E-02	2.56E-02	3.80E-04	1.03E-01
Depletion of abiotic resources -elements	kg Sb eq/UF	2.00E-04	3.41E-05	1.14E-07	1.10E-06	2.35E-04
Depletion of abiotic resources -fossil	MJ PCI/UF	4.68E+02	8.89E+01	1.49E-01	8.43E+00	5.66E+02
Water pollution	m ³ /UF	1.70E+01	3.00E+00	5.39E-03	2.34E-01	2.02E+01
Air pollution	m ³ /UF	5.04E+03	9.27E+02	6.19E+02	5.31E+01	6.64E+03
Renewable primary energy excl. RM	MJ PCI/UF	4.48E+01	7.18E+00	1.38E-01	1.65E-01	5.22E+01
Renewable primary energy used as RM	MJ PCI/UF	1.00E+01	1.50E+00	0.00E+00	0.00E+00	1.15E+01
Total renewable primary energy	MJ PCI/UF	5.48E+01	8.68E+00	1.38E-01	1.65E-01	6.37E+01
Non-renewable primary energy excl. RM	MJ PCI/UF	5.91E+02	1.08E+02	2.33E+00	8.81E+00	7.10E+02
Non-renewable primary energy used as RM	MJ PCI/UF	9.27E+01	1.41E+01	0.00E+00	0.00E+00	1.07E+02
Total Non-renewable primary energy	MJ PCI/UF	6.83E+02	1.22E+02	2.33E+00	8.81E+00	8.17E+02
Use of secondary material	kg/UF	2.30E-01	3.80E-02	0.00E+00	0.00E+00	2.68E-01
Use of renewable secondary fuels	MJ PCI/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of Non-renewable secondary fuels	MJ PCI/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³ /UF	4.00E-01	6.58E-02	1.11E-02	7.37E-03	4.85E-01
Hazardous waste disposed	kg/UF	4.12E+00	6.53E-01	5.06E-04	1.28E-02	4.78E+00
Non-hazardous waste disposed	kg/UF	1.66E+01	7.98E+00	9.90E-03	2.49E+01	4.96E+01
Radioactive waste disposed	kg/UF	3.62E-03	6.71E-04	3.12E-05	5.63E-05	4.38E-03
Components for re-use	kg/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg/UF	3.77E+00	5.66E-01	0.00E+00	6.90E-01	5.03E+00
Materials for energy recovery	kg/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy (electricity)	MJ/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy (steam)	MJ/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy (process gas)	MJ/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Results table in accordance with “décret n° 2013-1264 du 23 décembre 2013 » ³

³ « Décret n° 2013-1264 du 23 décembre 2013 et arrêté du 23 décembre 2013, modifié par l'arrêté du 15 juillet 2019, relatifs à la déclaration environnementale de certains produits de construction destinés à un usage dans les ouvrages de bâtiment »

7 ADDITIONAL INFORMATION ON THE RELEASE OF HAZARDOUS SUBSTANCES INTO INDOOR AIR, SOIL AND WATER DURING THE PERIOD OF USE

		Test results	Justification and/or test report
Emissions to indoor air ^{1 2}	Emissions of VOC and formaldehyde	<i>Test at 28 days < 1000 µg/m³ in accordance with ISO 16000, corresponding to class A+ from the French regulatory labelling.</i>	Test report EUROFINS N°392-2018-00293001
	Performance facing the fungal and bacterial growth	<i>No test of fungal and bacterial growth has been performed on the products.</i>	
	Natural radioactive emissions of the construction products	<i>No test of radioactive emissions has been performed on the products.</i>	
	Fibers and particles emissions	<i>No test of fibre and particle emissions has been performed on the studied products.</i>	
Emission into soil and water ^{1 2}	Emissions to water	<i>The product doesn't interact with drinkable water but can interact with rainwater. However, no tests have been performed on the leaching of substances into run-off water.</i>	
	Emissions to soil		

1) Emissions to indoor air, soil and water in accordance with the standard relative to measuring of regulated hazardous emissions from construction products, by means of test methods harmonized in accordance with Technical committee provisions of European products standard, when available. For more details see EeB Guide: <http://www.eebguide.eu/?p=1991>

2) In France, the technical committee INIES Base (CTIB) makes recommendations about declaration of health and comfort characteristics – « Guide de rédaction des résumés sanitaires et confort (CTIB N94, Juin 2018) »

8 PRODUCT CONTRIBUTION TO THE QUALITY OF LIFE INSIDE BUILDINGS

Product characteristics involved in creating hygrothermal comfort conditions in the building:

The product does not claim any thermal performance.

Product characteristics involved in creating acoustic comfort conditions in the building:

The product does not claim any acoustic performance.

Product characteristics involved in creating visual comfort conditions in the building:

The product does not claim any visual performance.

Product characteristics involved in creating olfactory comfort conditions in the building:

The product does not claim any olfactory performance.

9 ANNEX: IMPACT RESULTS FOR INSTALLATION WITH UNDER-STRUCTURE

EPD is created for the product for installation without under-structure. Installation on primary under-structure of wood or aluminium is also possible. The following results are included for informational purposes only, and show the impacts of an installation with the under-structure included. These results are not intended to replace an EPD for this type of installation.

→ Installation with aluminium under-structure

Impact indicator	Unit	Production stage	Construction stage	Use stage	End of life stage	Total
Global Warming	kg CO ₂ eq/UF	2.97E+01	2.00E+01	1.41E-02	6.57E-01	5.04E+01
Ozone Depletion	kg CFC 11 eq/UF	2.49E-05	4.58E-06	1.72E-08	1.02E-07	2.96E-05
Acidification of soil and water	kg SO ₂ eq/UF	1.44E-01	1.05E-01	8.35E-05	2.32E-03	2.52E-01
Eutrophication	kg (PO ₄) ³⁻ eq/UF	1.89E-02	1.17E-02	1.37E-05	5.59E-04	3.12E-02
Photochemical ozone creation	Ethene eq/UF	6.63E-02	1.78E-02	2.56E-02	3.97E-04	1.10E-01
Depletion of abiotic resources -elements	kg Sb eq/UF	2.00E-04	2.08E-04	1.14E-07	1.63E-06	4.10E-04
Depletion of abiotic resources -fossil	MJ PCI/UF	4.68E+02	2.27E+02	1.49E-01	8.81E+00	7.04E+02
Water pollution	m ³ /UF	1.70E+01	7.07E+00	5.39E-03	2.78E-01	2.43E+01
Air pollution	m ³ /UF	5.04E+03	3.57E+03	6.19E+02	5.81E+01	9.29E+03
Renewable primary energy excl. RM	MJ PCI/UF	4.48E+01	2.80E+01	1.38E-01	2.08E-01	7.31E+01
Renewable primary energy used as RM	MJ PCI/UF	1.00E+01	1.50E+00	0.00E+00	0.00E+00	1.15E+01
Total renewable primary energy	MJ PCI/UF	5.48E+01	2.95E+01	1.38E-01	2.08E-01	8.46E+01
Non-renewable primary energy excl. RM	MJ PCI/UF	5.91E+02	2.64E+02	2.33E+00	9.39E+00	8.67E+02
Non-renewable primary energy used as RM	MJ PCI/UF	9.27E+01	1.41E+01	0.00E+00	0.00E+00	1.07E+02
Total Non-renewable primary energy	MJ PCI/UF	6.83E+02	2.78E+02	2.33E+00	9.38E+00	9.73E+02
Use of secondary material	kg/UF	2.30E-01	3.44E-01	0.00E+00	0.00E+00	5.74E-01
Use of renewable secondary fuels	MJ PCI/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of Non-renewable secondary fuels	MJ PCI/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³ /UF	4.00E-01	1.60E-01	1.11E-02	7.59E-03	5.79E-01
Hazardous waste disposed	kg/UF	4.12E+00	2.62E+00	5.06E-04	1.92E-02	6.75E+00
Non-hazardous waste disposed	kg/UF	1.66E+01	1.83E+01	9.90E-03	2.51E+01	6.00E+01
Radioactive waste disposed	kg/UF	3.62E-03	1.09E-03	3.12E-05	6.13E-05	4.80E-03
Components for re-use	kg/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg/UF	3.77E+00	5.66E-01	0.00E+00	1.68E+00	6.02E+00
Materials for energy recovery	kg/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy (electricity)	MJ/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy (steam)	MJ/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy (process gas)	MJ/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

➔ Installation with wood under-structure (results available for wood under-structure originating from a signatory country of the Kyoto Protocol and/or PFEC/FSC certified, in accordance with NF EN 16485.

Impact indicator	Unit	Production stage	Construction stage	Use stage	End of life stage	Total
Global Warming	kg CO ₂ eq/UF	2.97E+01	9.14E+00	1.41E-02	7.31E-01	3.96E+01
Ozone Depletion	kg CFC 11 eq/UF	2.49E-05	4.28E-06	1.72E-08	1.11E-07	2.93E-05
Acidification of soil and water	kg SO ₂ eq/UF	1.44E-01	4.19E-02	8.35E-05	2.52E-03	1.89E-01
Eutrophication	kg (PO ₄) ³⁻ eq/UF	1.89E-02	7.33E-03	1.37E-05	6.46E-04	2.69E-02
Photochemical ozone creation	Ethene eq/UF	6.63E-02	1.40E-02	2.56E-02	4.72E-04	1.06E-01
Depletion of abiotic resources -elements	kg Sb eq/UF	2.00E-04	7.11E-05	1.14E-07	1.56E-06	2.72E-04
Depletion of abiotic resources -fossil	MJ PCI/UF	4.68E+02	1.28E+02	1.49E-01	9.59E+00	6.06E+02
Water pollution	m ³ /UF	1.70E+01	4.56E+00	5.39E-03	2.71E-01	2.18E+01
Air pollution	m ³ /UF	5.04E+03	1.90E+03	6.19E+02	6.11E+01	7.62E+03
Renewable primary energy excl. RM	MJ PCI/UF	4.48E+01	4.59E+01	1.38E-01	2.17E-01	9.10E+01
Renewable primary energy used as RM	MJ PCI/UF	1.00E+01	5.04E+01	0.00E+00	0.00E+00	6.04E+01
Total renewable primary energy	MJ PCI/UF	5.48E+01	9.63E+01	1.38E-01	2.17E-01	1.51E+02
Non-renewable primary energy excl. RM	MJ PCI/UF	5.91E+02	1.54E+02	2.33E+00	1.02E+01	7.57E+02
Non-renewable primary energy used as RM	MJ PCI/UF	9.27E+01	1.41E+01	0.00E+00	0.00E+00	1.07E+02
Total Non-renewable primary energy	MJ PCI/UF	6.83E+02	1.68E+02	2.33E+00	1.02E+01	8.64E+02
Use of secondary material	kg/UF	2.30E-01	1.28E-01	0.00E+00	0.00E+00	3.58E-01
Use of renewable secondary fuels	MJ PCI/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of Non-renewable secondary fuels	MJ PCI/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³ /UF	4.00E-01	9.24E-02	1.11E-02	8.42E-03	5.12E-01
Hazardous waste disposed	kg/UF	4.12E+00	1.31E+00	5.06E-04	1.40E-02	5.44E+00
Non-hazardous waste disposed	kg/UF	1.66E+01	1.09E+01	9.90E-03	2.82E+01	5.57E+01
Radioactive waste disposed	kg/UF	3.62E-03	8.74E-04	3.12E-05	6.63E-05	4.59E-03
Components for re-use	kg/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg/UF	3.77E+00	5.66E-01	0.00E+00	1.29E+00	5.63E+00
Materials for energy recovery	kg/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy (electricity)	MJ/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy (steam)	MJ/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy (process gas)	MJ/UF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00