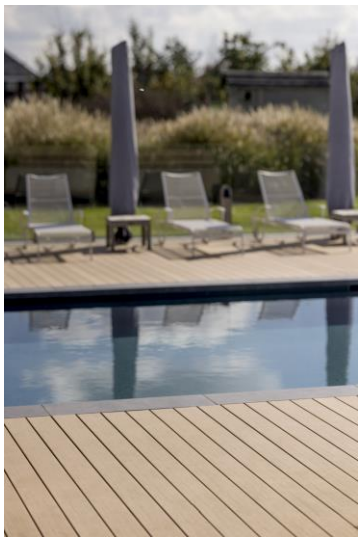
ENVIRONMENTAL AND HEALTH PRODUCT DECLARATION SHEET

Silvadec composite wood deck boards – Elegance and Atmosphere Range

Certificate of conformity NF EN ISO 14025, NF EN 15804+A2 and NF EN 15804+A2/CN



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This is the English version of the EPD, only the French version has been verified

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Warning

The information contained in this declaration is provided under the responsibility of Silvadec (FDES producer) according to NF EN 15804+A2 and the national addition to standard NF EN 15804+A2/CN.

Any use, total or partial, of the information provided in this document must at least be accompanied by a complete reference to the FDES of origin and to its producer, who may provide a complete copy.

CEN standard EN 15804+A2, national addition to standard NF EN15804+A2/CN serve as product category rules (PCR).

NOTE: The literal translation in French of “EPD (Environmental Product Declaration)” is “DEP” *(Déclaration Environnementale de Produit).* However, in France, the term FDES (Environmental and Health Declaration Sheet) is commonly used, which includes both the Environmental Declaration and Health Information for the product covered by this FDES. The FDES is therefore an "EPD" supplemented by health information

We remind you that the results of the study are based solely on the facts, circumstances and hypotheses that were submitted to us during the study. Should these facts, circumstances or hypotheses differ, the results are also liable to differ. Furthermore, the results of the study should be considered in their entirety, with reference to the hypotheses, and not individually.

Interpretation Guide

The display of inventory data complies with the requirements of the NF EN 15804+A2 standard. In the following tables 2.53E-06 should be read: 2.53×10^{-6} (scientific writing). When the inventory calculation result is zero, then the value zero is displayed.

The units used are specified before each flow. These units are:
- the kilogram (kg),
- the cubic meter (m^3),
- the kilowatt-hour (kWh),
- the megajoule (MJ),
- the square meter (m^2).

Abbreviations:
- LCA: Life Cycle Assessment
- DVR: Reference life
- EPD: Environmental Product Declaration
- UF: Functional unit
- N/A: Not applicable
- VOC: Volatile organic compounds
- SVHC: Substances of very high concern

Precaution on using FDES for product comparison

The EPD for construction products may not be comparable if they do not comply with NF EN 15804+A2.

Conformity standard NF EN 15804+A2 defines in § *5.3 Comparability of EPDs for construction products*, the conditions under which construction materials can be compared, on the basis of information provided by the EPD:
"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)."

NOTE 1: Outside of the environmental assessment of a building, FDES are not tools for comparing construction products and services.

NOTE 2: To assess the contribution of buildings to sustainable development, a comparison of environmental aspects and impacts must be undertaken in conjunction with the socio-economic aspects and impacts of the building.

NOTE 3: Reference values are required to interpret a comparison.

CONTENTS

1 INTRODUCTION

The framework used for the presentation of the environmental product declaration is based on the national addition to NF EN 15804+A2/CN and the INIES verification program.

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2 GENERAL INFORMATION

1. Name and address of declarant:
Silvadec
21 Parc d'Activité de l'Estuaire,
56190 Arzal
France

2. The site for which the FDES is representative:
Arzal

3. FDES type:
"Cradle-to-grave" and module D.

4. FDES type:
Individual range

5. Product sales references:
Elegance smooth (138 mm)
Elegance smooth (180 mm)
Elegance embossed (138 mm)
Elegance embossed (180 mm)
Elegance grooved (138 mm)
Elegance grooved (180 mm)
Atmosphere brushed finish (138 mm)
Atmosphere brushed finish (180 mm)

6. Validity framework:
All the sales references mentioned above. The results of this FDES

7. Verification:

CEN standard EN 15804 serves as PCR a).
Independent verification of the declaration in accordance with EN ISO 14025:2010 ○ Internal verification ⊗External verification
(As applicable b)) Third-party verification: Audit program: FDES-INIES (May 2023) http://www.inies.fr/ HQE Association 4, avenue du Recteur Poincaré 75016 Paris, France Authorized auditor: Elodie Pechenart ***This is the English version of the EPD, only the French version has been verified***
Programme Inscription Number INIES: 20240337404
1st issue publication date: 04/2024
Date of update: N/A
Verification date: 08/04/2024
End of validity date: 31/12/2029
a) Product category rules *b) Optional for business-to-business communication, mandatory for business-to-customer communication (see EN ISO 14025:2010, 9.4).*

8. Production location:
Arzal, Morbihan (56)

3 DESCRIPTION OF THE FUNCTIONAL UNIT AND PRODUCT

1. Description of the functional unit:
"To cover one square metre of outdoor soil so as to ensure passage wear and tear for 25 years".

2. Main performance of the functional unit:
Area: 1 m²

3. Description of product and packaging:
The product is composite wood deck boards (wood flour and HDPE) with dimensions 87 mm (W) x 30 mm (H) x 3600 mm (L). The data are determined as a function of this dimension and reduced to 1 m² of product.

4. Description of product use (scope of application):
The product is intended to be installed as decking in all types of buildings (single-family house, collective building).

5. Other technical specifications not included in the functional unit:
Composite wood deck boards have the following characteristics:

- Resistance to termite attacks (EN 350, class "durable") and fungi (EN 350, class DC1).
- Moisture resistance EN317: 24 hours-swelling 0.4% and mass recovery 1.4%.
- Punching resistance: Brinell hardness 59.6 MPa.
- DFL-s1 classification in reaction to fire according to Euroclasses.
- Slide resistance according to DIN 51130: R11/R12 (smooth, embossed finish) and R12/R13 (grooved finish, and atmosphere deck board).
- Are outdoor pedestrian boards resistant to a non-permanent distributed load of 500 kg/m^3.

In addition, the composite wood has:

- A density of 1.22.
- Young E modulus of 3200 MPa.
- A thermal expansion coefficient of 2.9*10-2 mm.m^{-1}.°C^{-1}.
- A breaking stress of 23.6 MP.

6. Description of the main components and/or materials of the product:

Parameter	Unit	Value
Product quantity	kg/m²	25.2
Main components	kg/m²	Wood flour: 1.39E+01 HDPE: 6.44E+00 Regenerated HDPE: 1.23E+00 Additives and fillers: 3.64E+00
Quantity of complementary products	kg/m²	Clips: 2.95E-01 Screws: 4.86E-02 Composite wood joists: 3.45E+00 Soft wood joists: 2.55E+00
Package for distribution	kg/m²	Pallets: 7.90E-02 PE film: 5.87E-02 PET: 2.30E-03 Cardboard: 4.52E-03 Beams: 2.36E-01

7. Content Statement:
The product does not contain substances classified as very high concern (SVHC) listed in the Annex XIV candidate list of the REACH regulation at more than 0.1% by mass.

8. Evidence of fitness for use:
DTU 51.4

9. Distribution channel:
BtoB

10. Description of the reference life in the reference conditions of use:

Parameter	Unit	Value
Reference life term	Years	25
Declared properties of the product (out of the factory)	-	See DOP
Theoretical application parameters (if required by the manufacturer), including references to appropriate requirements and application codes)	-	DTU 51.4
Presumed quality of work	-	Implementation in accordance with state of the art, best practices and manufacturer recommendations.
Indoor environment	-	-
Outdoor environment	-	-
Terms of use	-	The product is assumed to be used according to the manufacturer's recommendations.
Scenario for maintenance	-	Maintenance is planned during the reference service life, see §4.3 for details.

11. Information on biogenic carbon content:

The raw materials and packaging are biosourced. The uptake of CO_2 related to photosynthesis during plant growth is taken into account as input. This CO_2 is found in the form of carbon in the material.

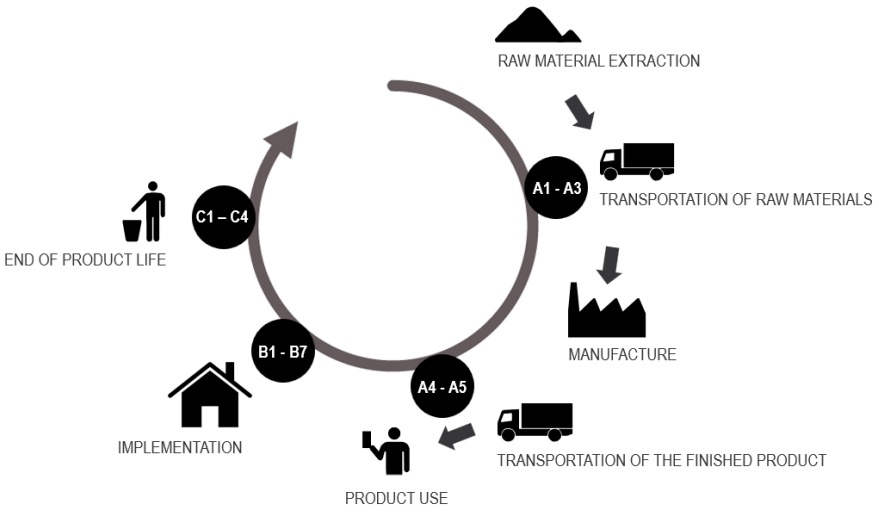
The biogenic carbon content declared in the FDES is the sum, for each raw material and packaging component, of the amount of carbon C/kg of material*amount of material/functional unit.

Re-emission in the form of carbon is taken into account in the end of life of materials.

Biogenic carbon content	Unit	Value
Biogenic carbon content of the product (out of the factory)	kg C/FU	6.29E+00
Biogenic carbon content of the additional products (out of the factory)	kg C/FU	2.93E+00
Biogenic carbon content of associated packaging (out of the factory)	kg C/FU	1.25E-01

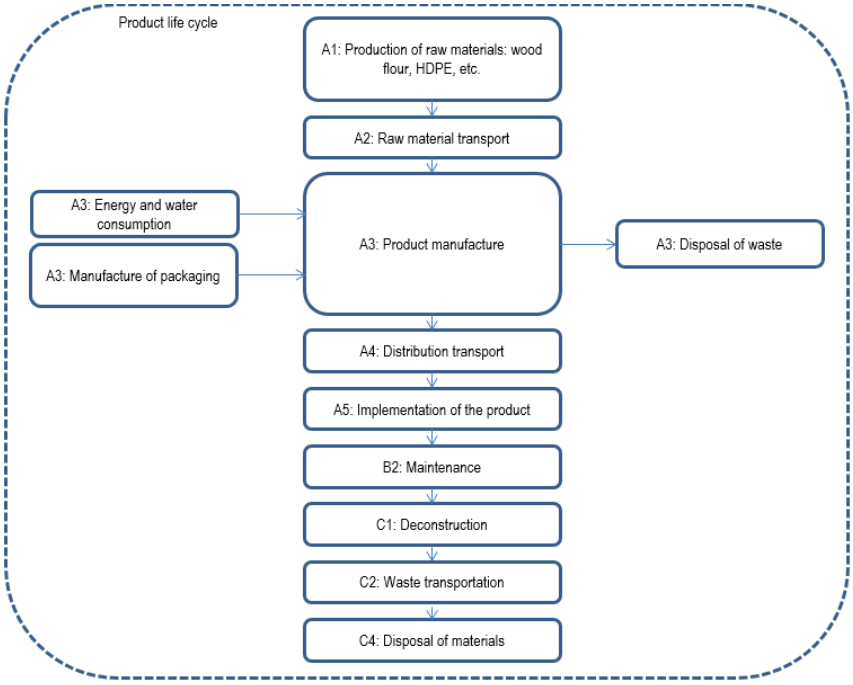
4 LIFE CYCLE PHASES

Product life-cycle diagram:



DESCRIPTION OF SYSTEM BOUNDARIES (X = INCLUDED IN THE LCA; MND = UNDECLARED MODULE)														
PRODUCTION PHASE	CONSTRUCTION PROCESS PHASE		USAGE PHASE							END-OF-LIFE PHASE				BENEFITS AND IMPACTS BEYOND THE SYSTEM BOUNDARIES
Product	Transport	Process of construction installation	Usage	Maintenance	Repair	Replacement	Rehabilitation	Energy consumption during the usage phase	Water consumption during the usage phase	Demolition/deconstruction	Transport	Waste treatment	Disposal	Possibility of reuse, recovery, recycling
A1-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	X	X	X	X	X

The system boundaries comply with the limits imposed by the standard NF EN 15804+A2 and its national addition to NF EN 15804+A2/CN.
The product life-cycle chart is specified below:



4.1 Production phase, A1-A3

Steps A1 to A3 include all processes from raw material extraction to factory processing. The production of the boards is possible thanks to extrusion and co-extrusion processes.
Regenerated HDPE is modelled with the same impact as virgin HDPE. As specific data were not available, it was not possible to apply an allocation.

4.2 Construction phase, A4-A5

Transport to the site:

Parameter	Unit	Value
Scenario description	-	The product is manufactured in Arzal (56) and is distributed in France. The transport distance is calculated by taking a weighted average of the transport distances to the different job sites.
Type of fuel and consumption of the vehicle or type of vehicle	-	The vehicles considered are Euro 5 trucks with a payload of 16-32 tonnes for the journey.
Distance to the site	km	507
Capacity Utilisation (including empty returns)	%	36% (generic ecoinvent data)
Bulk density of the product(s) transported	kg/m^3	-
Volume capacity usage coefficient (coefficient: =1 or <1 or ≥1 for compressed or nested products)	-	<1

Installation in the building:

Parameter	Unit	Value
Scenario description	-	The product is implemented using an electric screwdriver as well as complementary products (joists, clips and screws). The processing waste corresponds to the packaging of the product. Unused residual scraps are considered to be 5%. Silvadec has developed the “Ecobox” program allowing the return

		and recycling of part of the unused residual scraps to Silvadec. The latter are then reinjected into the production process. The rate of return of these residual scraps is 0.7%. The end of life of packaging waste considered is 50% landfill and 50% incineration.
Auxiliary inputs for installation	kg/FU	Clips: 2.95E-01 Screws: 4.86E-02 Composite joist: 3.45E+00 Classic wood joist: 2.55E+00
Power consumption	kWh/FU	2.52E-01
Waste generated at the construction site prior to the treatment of waste generated by the installation of the product	kg/FU	Pallets: 7.90E-02 PE film: 5.87E-02 PET: 2.30E-03 Cardboard: 4.52E-03 Beams: 2.36E-01
Materials (specified by type) generated by waste treatment at the construction site, e.g. collection for recycling, energy recovery, disposal	kg/FU	-
Direct emissions to ambient air, soil and water	kg/FU	-

4.3 Life phase in implementation (excluding potential savings) B1-B7

B1 Usage:

The product does not interfere with the environment during use.

B2 Maintenance:

Parameter	Unit	Value/Description
Scenario description	-	Cleaning is carried out with soapy water and rinse water.
Maintenance frequency	year	Once a year
Soapy water	-	0.2 L/year, or 5 L.
Waste generated during maintenance	kg/FU	-
Net consumption of fresh water	L/FU	8.00E-01
Energy input during maintenance	kWh/FU	-

B3 Repairs:

The product does not require repair throughout its reference service life.

B4 Replacement:

The product does not require replacement throughout its reference service life.

B5 Rehabilitation:

The product does not require rehabilitation throughout its reference service life.

B6 – B7 Energy and water use:

The product does not consume water or energy throughout its reference service life.

4.4 Product end of life phase C1-C4

Parameter	Unit	Value/Description
Scenario description	-	The product is dismantled by hand using an electric screwdriver, i.e. 1.00E-02 kWh/m². Soft wood (50% of joists) is incinerated and buried, 50/50. Composite wood (product and 50% of the joists) are considered to be sent to landfill. A 100% landfill scenario is considered for the end of life of composite wood. Indeed, the high proportion of HDPE (about 30%) in the product excludes incineration. A landfill scenario (50%) and incineration scenario (50%) are considered for the end of life of complementary products (fixing clips and screws). A transport distance of 50 km is also considered from the construction site to the treatment/disposal site. The calculation of biogenic CO2 re-emitted in landfill follows the recommendations of the FCBA (French Forest and Wood Sectors).
The distance the product is transported at the end of its life cycle	km	50
Quantity collected separately	kg/FU	Clips: 2.95E-01 Screws: 4.86E-02
Quantity collected with mixed construction waste	kg/FU	3.12E+01
Quantity intended for reuse	kg/FU	0.00E+00
Quantity destined for recycling	kg/FU	0.00E+00
Quantity intended for energy recovery	kg/FU	0.00E+00
Quantity of disposed of product	kg/FU	3.12E+01
Amount of residual biogenic carbon dioxide emitted	$kgCO_2$	3.04E+01

4.5 Benefits and impacts beyond the system boundaries, module D

Module D on externally supplied energy from incineration was not taken into account because packaging waste is considered incinerated without energy recovery. The product itself and the joists are not intended for incineration.

5 INFORMATION FOR THE CALCULATION OF THE LIFE CYCLE ASSESSMENT

PCR used	NF EN 15804+A2 of October 2019 and NF EN 15804+A2/CN of October 2022.
System boundaries	The system boundaries comply with the limits imposed by the standard NF EN 15804+A2 and its national addition to NF EN 15804+A2/CN.
Cutting standard	The cutting standard used in the environmental and health product declaration (FDES) complies with the standard NF EN 15804+A2 and national addition to NF EN 15804+A2/CN.
Allocations	The allocation standards for co-products imposed by the standard NF EN 15804+A2 and its national addition to standard NF EN 15804+A2/CN were fully respected: - Allocation avoided as much as possible - Allocation based on physical properties (e.g. mass, area) when the difference in revenue generated by co-products is small - In all other cases, allocation based on economic values. The ecoinvent data used therefore mainly uses economic allocations. No other specific allocation has been made.
Geographical and temporal representativeness of primary and secondary data	The primary data were collected by the declarant on its facilities, located in France, for the year 2022. The secondary data used come from the ecoinvent cut-off database in version 3.7 cut-off of 2022 and have been selected so as to be representative of the geographical area of production or transformation of the materials or processes Software used: SimaPro, the life-cycle analysis software in version 9.3 of 2021. Ev-DEC, (www.ev-dec.com), developed by the consultancy firm EVEA Conseil (www.evea-conseil.com), who assisted in the production of the FDES.
Variability of results	This FDES relates to a range of products for which the list of references constitutes the validity framework. The declared product is a typical product whose impacts are among the highest in the references in this list.

6 RESULT OF THE LIFE CYCLE ASSESSMENT

Due to rounding up, totals may not exactly match the sum of rounding.

For energy indicators used as raw material: a negative value corresponds to the change in use from raw materials to fuels (e.g. incineration). Application of Annex M of NF EN15804+A2/CN.

The table below presents the classification of liability waivers for reporting benchmark environmental impact indicators:

ILCD classification	Indicator	Liability waiver
Type 1 of the ILCD	Global warming potential (GWP)	None
	Potential depletion of the stratospheric ozone layer (ODP)	None
	Potential incidence of diseases due to emissions of fine particles	None
Type 2 of the ILCD	Acidification potential, cumulative excess (AP)	None
	Eutrophication potential, fraction of nutrients reaching the final freshwater compartment (EP-freshwater)	None
	Eutrophication potential, fraction of nutrients reaching the final marine compartment (EP-marine)	None
	Acidification potential, cumulative excess (EP-terrestrial)	None
	Ground-level ozone formation potential (POCP)	None
	Potential efficacy of human exposure to the isotope U235 (PIR)	1
Type 3 of the ILCD	Depletion potential for non-fossil abiotic resources (ADP-minerals + metals)	2
	Depletion potential for non-fossil abiotic resources (ADP-fossils)	2
	Potential water deprivation (of users), water consumption weighted according to deprivation (WDP)	2
	Potential comparative toxic unit for ecosystems (ETP-fw)	2
	Potential comparative toxic unit for humans (HTP-c)	2
	Potential comparative toxic unit for humans (HTP-nc)	2
	Potential Soil Quality Index (SQP)	2

Liability waiver 1 – this category of impact mainly concerns the possible impact on human health of low dose ionizing radiation from the nuclear fuel cycle. It does not take into account the consequences of possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground installations. Potential ionizing radiation from soil, radon and some building materials is also not measured by this indicator.

Liability waiver 2 – the results of this environmental impact indicator should be used with caution because the uncertainties of these results are high or because experience with this indicator is limited.

Environmental Impacts	Fabrication stage			Installation stage		Use stage							End of Life stage				D Benefits and impacts beyond the system limits
	A1 Raw material supply	A2 Transport	A3 Fabrication	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Use of energy	B7 Use of water	C1 Deconstruction/ demolition	C2 Transport	C3 Waste treatment	C4 Elimination	
Climate change - total kg CO2 eq/FU	9,59E-01	1,99E+00	6,33E+00	2,13E+00	#######	0,00E+00	2,96E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,08E-03	2,11E-01	0,00E+00	4,05E+01	0,00E+00
Climate change - fossil kg CO2 eq/FU	2,40E+01	1,98E+00	9,78E+00	2,13E+00	2,52E+00	0,00E+00	1,19E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,08E-03	2,11E-01	0,00E+00	7,22E+00	0,00E+00
Climate change - biogenic kg CO2 eq/FU	-2,30E+01	8,91E-04	#######	8,08E-04	#######	0,00E+00	2,14E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,00E-06	8,02E-05	0,00E+00	3,33E+01	0,00E+00
Climate change - land use and change kg CO2 eq/FU	1,93E-02	7,61E-04	1,65E-02	7,16E-04	3,84E-03	0,00E+00	1,56E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,44E-07	7,11E-05	0,00E+00	1,20E-04	0,00E+00
Ozone depletion kg CFC 11 eq/FU	1,89E-06	4,35E-07	5,75E-07	4,83E-07	2,58E-07	0,00E+00	1,64E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,13E-10	4,80E-08	0,00E+00	9,77E-08	0,00E+00
Acidification **mole of H+ eq/FU**	1,47E-01	1,83E-02	5,82E-02	8,52E-03	1,30E-02	0,00E+00	1,36E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,92E-06	8,45E-04	0,00E+00	3,16E-03	0,00E+00
Eutrophication, freshwater kg P eq/FU	6,40E-04	1,92E-05	2,75E-04	1,57E-05	6,49E-05	0,00E+00	8,21E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,90E-08	1,56E-06	0,00E+00	2,63E-05	0,00E+00
Eutrophication, marine kg N eq/FU	2,31E-02	4,24E-03	9,92E-03	2,58E-03	3,68E-03	0,00E+00	1,83E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,33E-07	2,56E-04	0,00E+00	7,81E-03	0,00E+00
Eutrophication, terrestrial mole of N eq/FU	2,58E-01	4,73E-02	1,08E-01	2,85E-02	3,22E-02	0,00E+00	4,74E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,84E-06	2,82E-03	0,00E+00	1,23E-02	0,00E+00
Photochemical ozone formation kg NMVOC eq/FU	1,26E-01	1,33E-02	3,96E-02	8,70E-03	1,22E-02	0,00E+00	7,81E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,72E-06	8,63E-04	0,00E+00	4,50E-03	0,00E+00
Resource use, minerals and metals kg Sb eq/FU	1,12E-03	5,50E-06	1,96E-04	7,67E-06	6,49E-05	0,00E+00	2,29E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,17E-09	7,61E-07	0,00E+00	1,04E-06	0,00E+00
Resource use, fossils MJ/FU	7,69E+02	2,96E+01	3,74E+02	3,22E+01	5,19E+01	0,00E+00	1,32E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,18E-01	3,20E+00	0,00E+00	7,57E+00	0,00E+00
Water use m³ world eq deprived/FU	1,39E+01	1,10E-01	3,11E+00	9,16E-02	7,76E-01	0,00E+00	6,36E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,80E-04	9,08E-03	0,00E+00	2,05E-01	0,00E+00

Environmental Impacts	Fabrication stage			Installation stage		Use stage							End of Life stage				D Benefits and impacts beyond the system limits
	A1 Raw material supply	A2 Transport	A3 Fabrication	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Use of energy	B7 Use of water	C1 Deconstruction/ demolition	C2 Transport	C3 Waste treatment	C4 Elimination	
Particulate matter Disease incidence/FU	1,46E-06	1,18E-07	6,09E-07	1,47E-07	2,47E-07	0,00E+00	1,98E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,22E-11	1,46E-08	0,00E+00	5,36E-08	0,00E+00
Ionising radiation kBq of U235 eq/FU	1,23E+00	1,31E-01	2,42E+00	1,42E-01	1,23E-01	0,00E+00	5,25E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,17E-03	1,40E-02	0,00E+00	3,49E-02	0,00E+00
Ecotoxicity, freshwater CTUe/FU	4,22E+02	2,20E+01	1,91E+02	2,46E+01	4,08E+01	0,00E+00	2,58E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,73E-02	2,44E+00	0,00E+00	2,91E+01	0,00E+00
Human toxicity, cancer CTUh/FU	1,59E-08	7,73E-10	1,34E-08	8,77E-10	1,45E-09	0,00E+00	4,20E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,06E-13	8,70E-11	0,00E+00	7,02E-10	0,00E+00
Human toxicity, non-cancer CTUh/FU	2,19E-07	2,11E-08	1,63E-07	2,50E-08	2,90E-08	0,00E+00	8,46E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,38E-12	2,48E-09	0,00E+00	1,07E-08	0,00E+00
Land use Dimensionless/FU	6,50E+02	2,37E+01	1,96E+02	3,24E+01	1,31E+03	0,00E+00	2,28E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,67E-03	3,22E+00	0,00E+00	2,74E+01	0,00E+00

Resource use	Fabrication stage			Installation stage		Use stage							End of Life stage				D Benefits and impacts beyond the system limits
	A1 Raw material supply	A2 Transport	A3 Fabrication	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Use of energy	B7 Use of water	C1 Deconstruction/ demolition	C2 Transport	C3 Waste treatment	C4 Elimination	
Use of renewable primary energy excluding the renewable primary energy resources used as raw materials MJ/FU	-1,65E+02	4,65E-01	#######	4,34E-01	3,30E+01	0,00E+00	1,52E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,79E-03	4,30E-02	0,00E+00	2,02E+01	0,00E+00
Use of renewable primary energy resources used as raw materials MJ/FU	2,24E+02	0,00E+00	3,54E+01	0,00E+00	4,84E+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
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/FU	5,82E+01	4,65E-01	2,79E+01	4,34E-01	8,14E+01	0,00E+00	1,52E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,79E-03	4,30E-02	0,00E+00	3,31E-01	0,00E+00
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials MJ/FU	3,95E+02	2,96E+01	3,21E+02	3,22E+01	3,45E+01	0,00E+00	1,52E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,18E-01	3,19E+00	0,00E+00	7,56E+00	0,00E+00
Use of non-renewable primary energy resources used as raw materials MJ/FU	3,73E+02	0,00E+00	5,37E+01	0,00E+00	1,74E+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
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/FU	7,68E+02	2,96E+01	3,74E+02	3,22E+01	5,18E+01	0,00E+00	1,52E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,18E-01	3,19E+00	0,00E+00	7,56E+00	0,00E+00
Use of secondary materials kg/FU	1,22E+00	0,00E+00	1,68E-01	0,00E+00	6,12E-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	0,00E+00
Use of renewable secondary fuels MJ/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	0,00E+00
Use of non-renewable secondary fuels MJ/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	0,00E+00
Net use of fresh water resources m^3/FU	3,52E-01	4,47E-03	-7,70E-01	4,34E-03	1,99E-02	0,00E+00	1,94E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,27E-05	4,30E-04	0,00E+00	9,56E-03	0,00E+00

Waste categories	Fabrication stage			Installation stage		Use stage							End of Life stage				D Benefits and impacts beyond the system limits
	A1 Raw material supply	A2 Transport	A3 Fabrication	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Use of energy	B7 Use of water	C1 Deconstruction/ demolition	C2 Transport	C3 Waste treatment	C4 Elimination	
Hazardous waste disposed kg/FU	6,66E-01	2,12E-02	1,16E+00	2,18E-02	2,23E-01	0,00E+00	4,65E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,75E-05	2,17E-03	0,00E+00	2,40E-02	0,00E+00
Non-hazardous waste disposed kg/FU	2,02E+01	1,33E+00	7,67E+00	1,80E+00	2,45E+00	0,00E+00	1,04E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,06E-04	1,79E-01	0,00E+00	3,04E+01	0,00E+00
Radioactive waste disposed kg/FU	1,47E-03	2,00E-04	3,15E-03	2,21E-04	1,58E-04	0,00E+00	5,16E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,53E-06	2,19E-05	0,00E+00	4,77E-05	0,00E+00

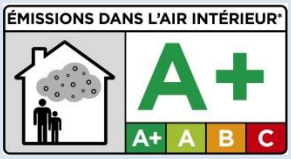
Output flows	Fabrication stage			Installation stage		Use stage							End of Life stage				D Benefits and impacts beyond the system limits
	A1 Raw material supply	A2 Transport	A3 Fabrication	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Use of energy	B7 Use of water	C1 Deconstruction/ demolition	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	0,00E+00
Materials for recycling kg/FU	0,00E+00	0,00E+00	4,06E-02	0,00E+00	8,90E-03	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
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	0,00E+00
Exported energy - Electricity MJ/FU	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,25E-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	1,66E+00	0,00E+00
Exported energy - Vapor MJ/FU	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,52E-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	3,49E+00	0,00E+00
Exported energy - Gas & Process MJ/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	0,00E+00

Impact Category / Flow	Unit	Production phase	Construction phase	Usage phase	End of life phase	Total life cycle	Benefits and impacts beyond the system boundaries
Climate change - total	kg CO2 eq/FU	9.27E+00	-1.56E-01	2.96E-01	4.07E+01	5.02E+01	0.00E+00
Climate change - fossil	kg CO2 eq/FU	3.57E+01	4.65E+00	1.19E-01	7.43E+00	4.79E+01	0.00E+00
Climate change - biogenic	kg CO2 eq/FU	-2.65E+01	-4.81E+00	2.14E-02	3.33E+01	2.06E+00	0.00E+00
Climate change - land use and change	kg CO2 eq/FU	3.66E-02	4.55E-03	1.56E-01	1.92E-04	1.97E-01	0.00E+00
Ozone depletion	kg CFC 11 eq/FU	2.90E-06	7.42E-07	1.64E-08	1.46E-07	3.80E-06	0.00E+00
Acidification	mole of H+ eq/FU	2.23E-01	2.16E-02	1.36E-03	4.01E-03	2.50E-01	0.00E+00
Eutrophication, freshwater	kg P eq/FU	9.34E-04	8.06E-05	8.21E-04	2.79E-05	1.86E-03	0.00E+00
Eutrophication, marine	kg of N eq/FU	3.72E-02	6.26E-03	1.83E-03	8.07E-03	5.34E-02	0.00E+00
Eutrophication, terrestrial	mole of N eq/FU	4.13E-01	6.07E-02	4.74E-03	1.51E-02	4.94E-01	0.00E+00
Photochemical ozone formation	kg NMCOV eq/FU	1.79E-01	2.09E-02	7.81E-04	5.37E-03	2.06E-01	0.00E+00
Resource use, minerals and metals	kg Sb eq/FU	1.32E-03	7.26E-05	2.29E-06	1.81E-06	1.40E-03	0.00E+00
Resource use, fossils	MJ/FU	1.17E+03	8.41E+01	1.32E+00	1.09E+01	1.27E+03	0.00E+00
Water use	m^3 of deprivation eq in the world/FU	1.71E+01	8.67E-01	6.36E-01	2.15E-01	1.88E+01	0.00E+00
Particulate matter	Disease Index/FU	2.18E-06	3.94E-07	1.98E-08	6.82E-08	2.67E-06	0.00E+00
Ionising radiation	kBq of U235 eq/FU	3.78E+00	2.64E-01	5.25E-03	5.01E-02	4.10E+00	0.00E+00
Ecotoxicity, freshwater	CTUe/FU	6.36E+02	6.54E+01	2.58E+01	3.16E+01	7.58E+02	0.00E+00
Human toxicity, cancer	CTUh/FU	3.02E-08	2.32E-09	4.20E-10	7.90E-10	3.37E-08	0.00E+00
Human toxicity, non-cancer	CTUh/FU	4.04E-07	5.40E-08	8.46E-09	1.32E-08	4.80E-07	0.00E+00
Land use	Dimensionless /FU	8.70E+02	1.34E+03	2.28E+01	3.06E+01	2.27E+03	0.00E+00
Use of renewable primary energy excluding the renewable primary energy resources used as raw materials	MJ/FU	-1.72E+02	3.34E+01	1.52E+00	2.03E+01	-1.17E+02	0.00E+00
Use of renewable primary energy resources used as raw materials	MJ/FU	2.59E+02	4.84E+01	0.00E+00	-1.99E+01	2.88E+02	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ/FU	8.66E+01	8.19E+01	1.52E+00	3.81E-01	1.70E+02	0.00E+00
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ/FU	7.45E+02	6.67E+01	1.52E+00	1.09E+01	8.24E+02	0.00E+00
Use of non-renewable primary energy resources used as raw materials	MJ/FU	4.27E+02	1.74E+01	0.00E+00	0.00E+00	4.44E+02	0.00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ/FU	1.17E+03	8.40E+01	1.52E+00	1.09E+01	1.27E+03	0.00E+00
Use of secondary materials	kg/FU	1.39E+00	6.12E-02	0.00E+00	0.00E+00	1.45E+00	0.00E+00
Use of renewable secondary fuels	MJ/FU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ/FU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Net use of fresh water resources	m³/FU	-4.13E-01	2.42E-02	1.94E-02	1.00E-02	-3.60E-01	0.00E+00
Hazardous waste disposed	kg/FU	1.85E+00	2.45E-01	4.65E-02	2.62E-02	2.16E+00	0.00E+00
Non-hazardous waste disposed	kg/FU	2.92E+01	4.25E+00	1.04E-01	3.06E+01	6.41E+01	0.00E+00
Radioactive waste disposed	kg/FU	4.81E-03	3.79E-04	5.16E-06	7.11E-05	5.27E-03	0.00E+00
Components for re-use	kg/FU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg/FU	4.06E-02	8.90E-03	0.00E+00	0.00E+00	4.95E-02	0.00E+00
Materials for energy recovery	kg/FU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy - Electricity	MJ/FU	0.00E+00	4.25E-01	0.00E+00	1.66E+00	2.08E+00	0.00E+00
Exported energy - Vapor	MJ/FU	0.00E+00	8.52E-01	0.00E+00	3.49E+00	4.35E+00	0.00E+00
Exported energy - Gas & Process	MJ/FU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Chart in conformity with French Decree of October 20, 2022 amending the Decree of December 14, 2021 relating to the environmental declaration of products intended for use in building structures and the environmental declaration of products used for the calculation of the environmental performance of buildings.

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
Emission into indoor air[1] [2]	VOC and formaldehyde emissions		Test Report N° D-101013-08326 Tests according to ISO 16000 standards (report available on request from Silvadec)
	Behaviour in the face of fungal and bacterial growth	*No tests available*	-
	Natural radioactive emissions from construction materials	*No tests available*	-
	Fibres and formaldehyde emissions	*No tests available*	-
Emissions in the ground and water[1] [2]	Emissions in water	*No tests available*	-
	Emissions in soil	*No tests available*	-

1) Emissions in indoor air, soil and water according to horizontal standards for the measurement of emissions of regulated hazardous substances from construction products using harmonised test methods in accordance with the provisions of the respective technical committees of the European product standards, where available.
For more information, refer to the EEB Guide: http://www.eebguide.eu/?p=1991
2) In France the INIES Base Technical Committee (CTIB) gives recommendations on the declaration of health and comfort characteristics - Guide to writing health and comfort summaries (CTIB N94, June 2018)

8 CONTRIBUTION OF THE PRODUCT TO THE QUALITY OF LIFE INSIDE BUILDINGS

Product characteristics that contribute to ensuring hygrothermal comfort in the building:
The product does not claim a hygrothermal comfort feature.

Product characteristics that contribute to ensuring acoustic comfort in the building:
The product does not claim an acoustic comfort feature.

Product characteristics that contribute to ensuring visual comfort in the building:
The product does not claim a visual comfort feature.

Product characteristics that contribute to ensuring olfactory comfort in the building:
The product does not claim an olfactory comfort feature.

9 BIBLIOGRAPHY

NF EN ISO 14025:2010 - Environmental labels and declarations — Type III environmental declarations — Principles and procedures

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

NF EN 15804+A2/CN:2022 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction - National addition to NF EN 15804+A2

NF EN ISO 14040:2006 – Environmental management – life cycle assessment – Principle and framework

NF EN ISO 14044:2006 - Environmental management – life cycle assessment – Requirements and guidelines

European Commission, PEFCR Guidance Document - Guidance for the development of Product Environmental Footprint Category Rules (PEFCRs), version 6.3, December 2017.