texdecor

ENVIRONMENTAL AND HEALTH PRODUCT DECLARATION SHEET - EPD

Decorative vinyl wallcovering

In compliance with NF EN 15804+A2:2019 and NF EN 15804+A2/CN:2022

kaléi
Entreprises de revêtements techniques et décoratifs

ENVIRONMENTAL AND HEALTH PRODUCT DECLARATION

FICHE DE DECLARATION ENVIRONNEMENTALE ET SANITAIRE

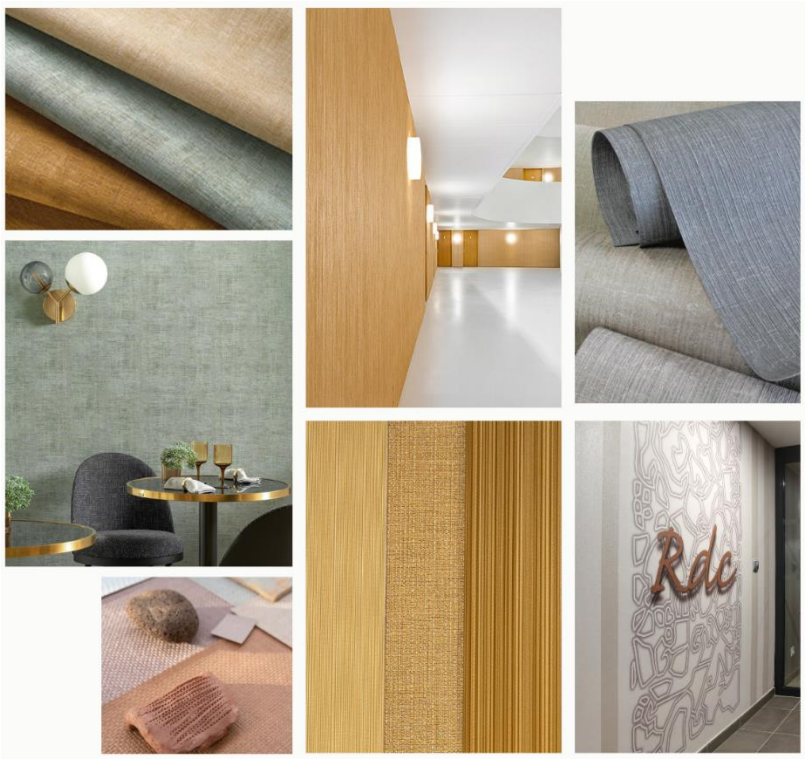
Decorative vinyl wall coverings under 1 kg/m²

done by the 3 companies:

Muraspec Buflon Solutions décoratives

texdecor

VESCOM



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Issue date: April 2025
FDES Version: 2.1

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Production:
EVEA
11, rue Arthur III – 44200 Nantes, France
Tél : +33 (0)2 28 07 87 00 – Fax : +33 (0)2 40 71 97 41

FDES VÉRIFIÉE inies

WARNINGS

The information contained in this declaration is provided under the responsibility of Kaléi (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
- RSL: Reference Service Life
- EPD: Environmental Product Declaration
- FU: Functional unit
- N/A: Not applicable
- VOC: Volatile organic compounds
- SVHC: Substances of very high concern
- DTU: Unified Technical Document

USAGE PRECAUTION FOR PRODUCT COMPARISON

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

The EN 15804+A2 standard defines in § *5.3 Comparability of EPDs for construction products*, the conditions under which construction materials can be compared, based on information provided by the EPD:
"In principle the comparison of products on the basis of their EPD is defined by the contribution they make to the environmental performance of the building. Consequently, comparison of the environmental performance of construction products using the EPD information shall be based on the product's use in and its impacts on the building, and shall consider the complete life cycle (all information modules).

NOTE 1: EPD that are not in a building context are not tools to compare construction products and construction services.

NOTE 2: For the sustainability assessment of buildings comparisons of the environmental aspects and impacts need to be undertaken in conjunction with the social and economic aspects and impacts related to the building.

NOTE 3: For the interpretation of a comparison, benchmarks or reference values are needed. The standard does not set benchmarks or reference values."

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.

Contact:
KALÉI

Contact information:

info@kalei-services.org
+33.(0)1.44.01.16.44

2 GENERAL INFORMATIONS

1. Name and address of the declarant:

KALÉI
11bis rue de Milan
75009 Paris
France

2. The sites for which the FDES is representative:

This FDES is representative of PVC wall coverings under 1kg/m² marketed in France by the following companies, members of KALÉI.

- **MURASPEC**: www.muraspec.com
  18 rue de l'Equerre, 95310 SAINT OUEN L'AUMONE, FRANCE
- **TEXDECOR**: www.texdecor.com
  2 rue d'Hem, 59780 WILLEMS, FRANCE
- **VESCOM**: www.vescom.com
  Campus Saint Christophe 10 Avenue de l'Entreprise 95800 CERGY PONTOISE, FRANCE

For these companies, all production sites were studied.

3. Type of FDES:

« Cradle to grave » and module D.

4. Type of FDES:

This FDES is collective. It is only to be used to provide environmental information concerning the specified products of the companies MURASPEC, TEXDECOR and VESCOM.

5. Products name:

The complete products list is available on the INIES website. www.inies.fr

6. Validity framework:

The validity framework of this FDES is constituted by all the references covered.

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 (December 2024) http://www.inies.fr/ HQE Association 4, avenue du Recteur Poincaré 75016 Paris, France ***This is the English version of the EPD, only the French version has been verified***
Authorized verifier: Etienne LEES-PERASSO
INIES Registration number: 20250443471
1st issue publication date: April 2025
Update date: N/A
Verification date: 28/04/2025
Valid until: 31/12/2030
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:

Europe

3 FUNCTIONAL UNIT AND PRODUCT DESCRIPTION

1. Functional unit:

« Cover 1 m² of wall with a PVC wall covering <1kg/m² while ensuring the performance described in the standards NF EN 15102[1] and NF EN 233[2]. »

(1) *Decorative wall coverings - Roll and panel form*

(2) *Wallcoverings in roll form. Specification for finished wallpapers, wall vinyls and plastics wallcoverings*

2. Main performance of the functional unit:

Cover 1 m².

3. Product and packaging description:

The range of products studied in this FDES is the range of PVC wall coverings with a surface mass of less than 1kg/m². The product comes in the form of a wall covering roll 1 to 1.30 m wide. They are packaged with cardboard, paper, polypropylene strapping, and wooden pallets.

4. Description of product use (scope of application):

The products are intended to provide wall protection and decoration in all types of buildings. These are finished wall coverings (not intended to be decorated after installation).

5. Other technical specifications not included in the functional unit:

None.

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

Parameter	Unit	Value
Product mass at the factory exit	kg/m²	4.43E-01
Installed product mass on site with complementary products.	kg/m²	6.43E-01
Main components: - PVC formulation - Woven backer - Non-woven backer - Paper backer	kg/m²	 3.84E-01 3.25E-02 1.68E-02 8.83E-03
Distribution packaging: - Paper - Cardboard - Polypropylene strapping - Wooden pallet	kg/m²	 4.83E-05 1.84E-02 7.24E-05 8.10E-03
Quantity of complementary products on site: Vinyl glue	kg/m²	 2.00E-01

7. Content declaration:

The product does not contain substances classified as extremely hazardous (SVHC) listed in the candidate list of Annex XIV of the REACH regulation at more than 0.1% by mass.

8. Proof of Fitness for Use:

The products comply with the standards NF EN 15102+A1 and NF EN 233.

9. Distribution channel:

BtoB and BtoC

10. Description of the reference service life under reference conditions of use

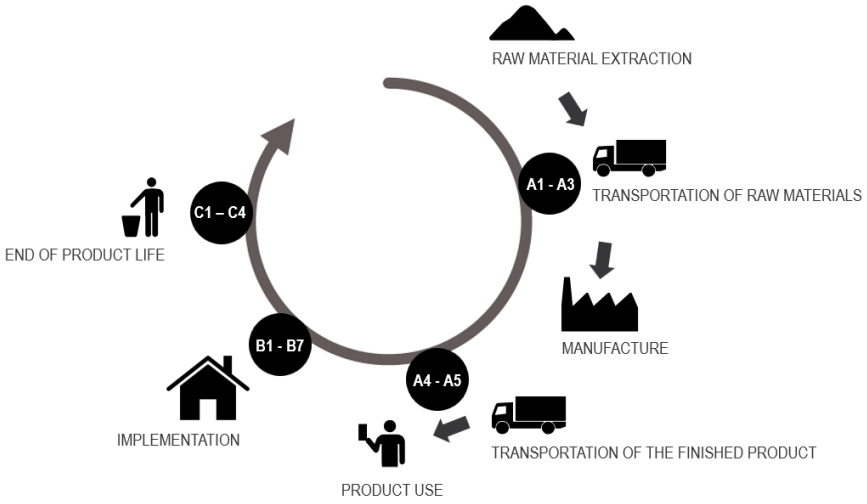
Parameter	Unit	Value
Reference service life	Years	20
Declared properties of the product (at Factory Exit)		The products comply with standards NF EN 15102+A1 et NF EN 233.
Theoretical application parameters (if imposed by the manufacturer), including references to appropriate requirements and application codes		These data are described in the products technical sheet and DoP.
Presumed quality of work		The quality of the work is presumed to comply with DTU 59.4 - Building works - Implementation of wallpaper and wall coverings.
Indoor environment (for indoor products)		These data are described in the products technical sheet.
Outdoor environment (for outdoor products)		The products are not in contact with the outdoor environment.
Conditions of use		The conditions of use are presumed to comply with DTU 59.4 - Building Work - Installation of Wallpapers and Wall Coverings.
Maintenance scenario		A maintenance scenario has been defined in accordance with the declarant's recommendations

11. Information on biogenic carbon content

Biogenic carbon content (Calculation according to EN 16449)	Unit	Value
Biogenic carbon content of the product (at the factory exit)	kg C/FU	2.21E-02
Biogenic carbon content of the associated packaging (at the factory exit).		1.16E-02

4 LIFE CYCLE PHASES

Product life-cycle diagram:



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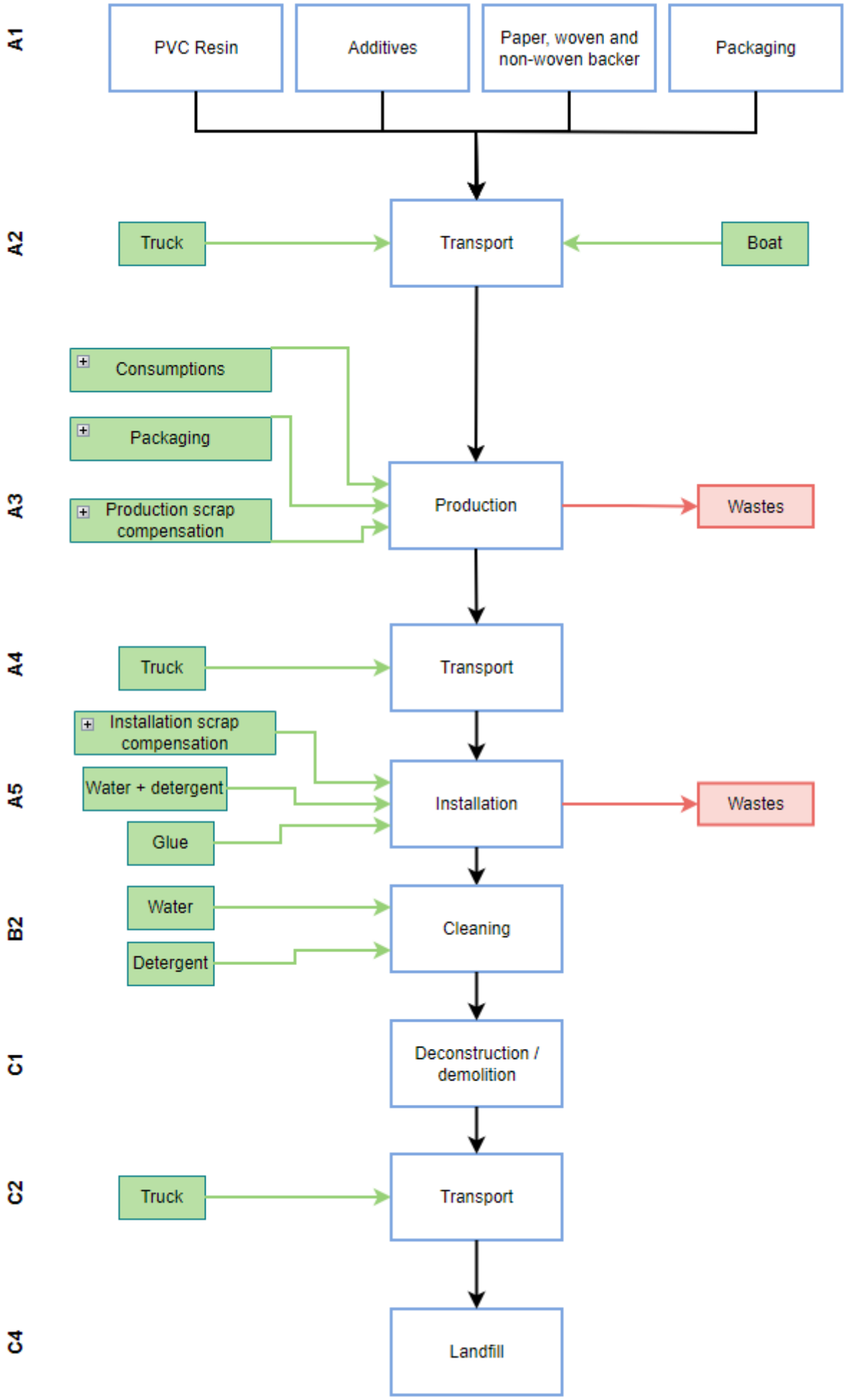
System boundaries:

DESCRIPTION OF SYSTEM BOUNDARIES (X = INCLUDED IN THE LCA; MND = MODULE NOT DECLARED)																BENEFITS AND IMPACTS BEYOND THE SYSTEM BOUNDARIES
PRODUCTION PHASE			CONSTRUCTION PHASE		USE PHASE							END-OF-LIFE PHASE				
A1-A3			A4-A5		B1-B7							C1-C4				D
Raw material supply	Transport	Manufacturing	Transport	Construction / Installation process	Use	Maintenance	Repair	Replacement	Rehabilitation	Energy demand during the operational phase	Water demand during the operational phase	Demolition/ Deconstruction	Transport	Waste treatment	Disposal	Reuse, recovery, recycling potential
A1	A2	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	X	MND


A1
PVC Resin
Additives
Paper, woven and non-woven backer
Packaging
A2
Truck
Transport
Boat
A3
Consumptions
Packaging
Production scrap compensation
Production
Wastes
A4
Truck
Transport
A5
Installation scrap compensation
Water + detergent
Glue
Installation
Wastes
B2
Water
Detergent
Cleaning
C1
Deconstruction / demolition
C2
Truck
Transport
C4
Landfill

4.1 Production phase, A1-A3

The A1-A3 stages describe all processes from raw material production to the finished product ready for installation.

A1: The elements necessary for the PVC formulation as well as the backings (woven, non-woven, and paper) are manufactured by suppliers.
A2: The raw materials described in A1 are transported to the factories of the wall covering manufacturers.
A3: The PVC formulation elements are extruded into a film, or received directly in roll form, and applied to a backing. One or more additional steps may be necessary to apply the decoration.

4.2 Construction phase, A4-A5

A4: Transport to construction site:

Parameter	Unit	Value
Scenario description	-	The products are transported from the manufacturers' factories to the construction sites, with or without a stop at a logistics base
Type of fuel and vehicle consumption or type of vehicle	-	EURO 6 truck
Distance to the site	km	592
Capacity utilization (including empty returns)	%	36% (generic data from the ecoinvent database)
Volume capacity utilization coefficient (coefficient: =1 or <1 or ≥1 for compressed or nested products)	-	< 1

A5: Installation in the building:

Parameter	Unit	Value
Scenario description	-	The product is glued to the wall using 200g of vinyl adhesive per square meter, then cleaned. The waste rate is 8%.
Auxiliary inputs for installation: - Vinyl glue - Detergent	kg/FU	 2.00E-01 5.00E-04
Water consumption	m^3/FU	4.95E-05
Quantity of packaging becoming wastes		
- Paper - Carboard - Polypropylene strapping - Wooden pallet	kg/FU	4.83E-05 1.84E-02 7.24E-05 8.10E-03
Product quantity becoming wastes:	kg/FU	3.54E-02
Materials produced by waste treatment on the construction site by type of end-of-life:		
- Paper (landfill) - Paper (incineration) - Paper (recycling) - Carboard (landfill) - Carboard (incineration) - Carboard (recycling) - Wood (landfill) - Wood (incineration) - Wood (recycling) - Wood (reuse) - Polypropylene (landfill) - Polypropylene (incineration) - Polypropylene (recycling) - PVC and backer installation scrap (landfill)	kg/FU	4.83E-06 3.86E-06 3.96E-05 1.84E-03 1.47E-03 1.51E-02 1.62E-03 2.51E-03 5.67E-04 3.40E-03 2.04E-05 3.65E-05 1.55E-05 3.54E-02

4.3 Use phase (excluding potential savings), B1-B7

B2 Maintenance:

Parameter	Unit	Value/Description
Scenario description	-	One cleaning every 5 years (water + cleaning product).
Maintenance frequency	years	5
Auxiliary inputs for maintenance - Detergent	kg/FU	 2.00E-03
Net use of fresh water	m^3/FU	1.98E-04

4.4 End of life phase, C1-C4

Parameter	Unit	Value/Description
Scenario description	-	The product is manually removed from the wall.
End-of-life transport distance of the product	km	50
Quantity collected separately	kg/FU	0
Quantity collected with mixed construction waste	kg/FU	6.43E-01
Quantity intended for reuse	kg/FU	0
Quantity intended for recycling	kg/FU	0
Quantity intended for energy recovery	kg/FU	0
Quantity of product disposed of	kg/FU	6.43E-01
Quantity of residual biogenic carbon dioxide emitted	kgCO_2/FU	8.10E-02

4.5 Reuse, recovery, recycling potential, module D

The net flow associated with secondary materials of the products is negative, so the contribution of raw materials to module D is declared null (in accordance with Annex J1 of the INIES program regulation).
The potential for recycling packaging waste is not considered as it is negligible (in accordance with Annex J1 of the INIES program regulation).

5 INFORMATION FOR LIFE CYCLE ASSESSMENT CALCULATION

PCR used	NF EN 15804+A2:2019 and NF EN 15804+A2/CN:2022.
System boundaries and cut-off criteria	The system boundaries comply with the limits imposed by the PCR. The cut-off rule used in case of insufficient or missing input data for an elementary process, as defined by the NF EN 15804+A2 standard, allows for the exclusion of: - Up to 1% of renewable and non-renewable primary energy consumption and 1% of the input mass per elementary process - Up to 5% cumulative primary energy consumption and input mass for each life cycle stage (e.g., A1-A3) The national supplement NF EN 15804+A2/CN further specifies that the following can be excluded from the system boundaries without verification of compliance with the cut-off rule: - The manufacturing, maintenance, and end-of-life of equipment or infrastructure and consumables whose total or partial renewal frequency is greater than one year. - The lighting, heating, cleaning of workshops, and administrative services - Employee transportation The infrastructures present in the secondary ecoinvent data used have been included.
Allocations	The allocation standards for co-products imposed by the standard NF EN 15804+A2 and its national supplement 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 primarily employs economic allocations. A mass allocation was used for the collection at the production stage of the product.
Geographical and temporal representativeness of primary and secondary data	The primary data were collected by the declarant at their facilities, located in Europe, during the year 2022. The secondary data used comes from the ecoinvent database version 3.10 (cut-off) of 2023 and was selected to be representative of the geographical area of production or processing of the materials or processes. SimaPro LCA Software: SimaPro, version 9.6
Variability of results	This FDES relates to a range of products whose list of references constitutes the validity framework. The declared product is a typical product whose life cycle inventory is a weighted average based on the sales of the references in this list.

	Climate change - total	Total non-renewable primary energy	Non-hazardous waste disposed
Lower bound of the variation interval	1.82	35.78	1.41
Upper bound of the variation interval	5.99	102.40	5.27
Reference product	**2.92**	**48.94**	**2.53**
Maximum	5.99	102.40	5.27
Maximum /Mean	205.35%	209.26%	208.62%
Maximum (95th percentile)	**3.65**	**60.14**	**3.21**
Maximum (95th percentile)/Mean	125.09%	122.90%	126.89%

6 LIFE CYCLE ANALYSIS RESULTS

The indicator results are obtained using a calculation method that incorporates characterization factors according to the EF3.1 reference package, as published in February 2023 by the Joint Research Centre of the European Commission[1].

The results are presented in scientific format with three significant figures. Due to rounding to the third significant figure, the values for the stages and the total life cycle may not correspond to the sum of the values of the corresponding modules.

The values of the indicators "Use of (non-)renewable primary energy resources as raw materials" can be negative. This can illustrate, for example, the transition of a raw material to the status of fuel in the case of incineration.

The table below presents the classification of disclaimers for the declaration of reference and additional 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 consider 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.

[1] https://eplca.jrc.ec.europa.eu/LCDN/EN15804.xhtml

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	1.65E+00	9.56E-02	5.31E-01	4.98E-02	4.78E-01	0.00E+00	3.14E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.11E-03	0.00E+00	1.11E-01	0.00E+00
Climate change - fossil kg CO2 eq/FU	1.68E+00	9.56E-02	5.69E-01	4.97E-02	4.29E-01	0.00E+00	2.66E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.10E-03	0.00E+00	4.34E-02	0.00E+00
Climate change - biogenic kg CO2 eq/FU	-6.95E-02	1.72E-05	-4.18E-02	9.01E-06	4.57E-02	0.00E+00	4.80E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-06	0.00E+00	6.78E-02	0.00E+00
Climate change - land use and change kg CO2 eq/FU	3.69E-02	3.26E-05	3.81E-03	1.66E-05	3.56E-03	0.00E+00	4.75E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.03E-06	0.00E+00	1.36E-06	0.00E+00
Ozone depletion kg CFC 11 eq/FU	5.87E-07	1.88E-09	6.20E-08	9.89E-10	5.80E-08	0.00E+00	6.26E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E-10	0.00E+00	2.18E-10	0.00E+00
Acidification mole de H+ eq/FU	1.12E-02	3.07E-04	1.39E-03	1.04E-04	1.92E-03	0.00E+00	1.31E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-05	0.00E+00	4.43E-05	0.00E+00
Eutrophication, freshwater kg P eq/FU	2.00E-04	7.30E-07	2.11E-05	3.88E-07	2.51E-05	0.00E+00	1.40E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.76E-08	0.00E+00	5.55E-08	0.00E+00
Eutrophication, marine kg de N eq/FU	7.56E-03	7.35E-05	7.83E-04	2.43E-05	8.34E-04	0.00E+00	6.19E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.98E-06	0.00E+00	2.66E-05	0.00E+00
Eutrophication, terrestrial mole de N eq/FU	3.30E-02	8.15E-04	4.28E-03	2.69E-04	4.80E-03	0.00E+00	3.31E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.30E-05	0.00E+00	1.96E-04	0.00E+00
Photochemical ozone formation kg NMCOV eq/FU	7.42E-03	4.04E-04	1.37E-03	1.72E-04	1.77E-03	0.00E+00	9.81E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.11E-05	0.00E+00	8.41E-05	0.00E+00
Resource use, minerals and metals kg Sb eq/FU	3.92E-03	3.10E-07	1.19E-04	1.66E-07	3.25E-04	0.00E+00	3.40E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.04E-08	0.00E+00	1.58E-08	0.00E+00
Resource use, fossils MJ/FU	2.93E+01	1.34E+00	9.07E+00	7.00E-01	8.33E+00	0.00E+00	4.35E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.59E-02	0.00E+00	1.53E-01	0.00E+00
Water use m³ de privation eq dans le monde/FU	6.12E+00	5.54E-03	5.38E-01	2.94E-03	6.51E-01	0.00E+00	1.02E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-04	0.00E+00	-3.27E-03	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 Indice de maladies/FU	9.40E-08	6.83E-09	1.15E-08	3.65E-09	1.85E-08	0.00E+00	1.46E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.47E-10	0.00E+00	1.04E-09	0.00E+00
Ionising radiation kBq de U235 eq/FU	4.58E-02	6.03E-04	3.26E-02	3.23E-04	1.43E-02	0.00E+00	1.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.96E-05	0.00E+00	8.35E-05	0.00E+00
Ecotoxicity, freshwater CTUe/FU	2.44E+01	3.59E-01	5.49E+00	1.90E-01	4.42E+00	0.00E+00	4.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.34E-02	0.00E+00	4.08E+00	0.00E+00
Human toxicity, cancer CTUh/FU	6.61E-09	6.67E-10	1.35E-09	3.53E-10	1.33E-09	0.00E+00	1.45E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.33E-11	0.00E+00	4.00E-11	0.00E+00
Human toxicity, non-cancer CTUh/FU	3.17E-08	8.21E-10	3.33E-09	4.39E-10	7.72E-09	0.00E+00	4.80E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.39E-11	0.00E+00	1.33E-10	0.00E+00
Land use Dimensionless/FU	1.90E+01	7.82E-01	4.49E+00	4.23E-01	2.62E+00	0.00E+00	4.68E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.19E-02	0.00E+00	3.66E-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	3.11E+00	2.25E-02	1.08E+00	1.20E-02	6.63E-01	0.00E+00	2.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.47E-03	0.00E+00	4.07E-03	0.00E+00
Use of renewable primary energy resources used as raw materials MJ/FU	1.07E+00	0.00E+00	4.09E-01	0.00E+00	-2.43E-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 renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/FU	4.18E+00	2.25E-02	1.48E+00	1.20E-02	4.20E-01	0.00E+00	2.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.47E-03	0.00E+00	4.07E-03	0.00E+00
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials MJ/FU	2.14E+01	1.34E+00	8.95E+00	6.99E-01	5.87E+00	0.00E+00	-1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.58E-02	0.00E+00	1.53E-01	0.00E+00
Use of non-renewable primary energy resources used as raw materials MJ/FU	7.82E+00	0.00E+00	9.88E-02	0.00E+00	2.44E+00	0.00E+00	5.48E-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
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/FU	2.93E+01	1.34E+00	9.04E+00	6.99E-01	8.31E+00	0.00E+00	4.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.58E-02	0.00E+00	1.53E-01	0.00E+00
Use of secondary materials kg/FU	1.78E-02	0.00E+00	1.47E-02	0.00E+00	2.60E-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
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 freshwater resources m^3/FU	1.90E-01	1.82E-04	1.85E-02	9.70E-05	1.97E-02	0.00E+00	2.48E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E-05	0.00E+00	-2.89E-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	2.12E-03	4.02E-05	4.18E-03	2.14E-05	7.15E-04	0.00E+00	3.89E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.63E-06	0.00E+00	1.48E-05	0.00E+00
Non-hazardous waste disposed kg/FU	1.27E+00	7.67E-02	1.66E-01	4.14E-02	3.16E-01	0.00E+00	1.74E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.08E-03	0.00E+00	6.45E-01	0.00E+00
Radioactive waste disposed kg/FU	3.23E-05	4.21E-07	1.76E-05	2.26E-07	9.89E-06	0.00E+00	8.99E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.77E-08	0.00E+00	5.17E-08	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	3.68E-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 recycling kg/FU	0.00E+00	0.00E+00	2.47E-04	0.00E+00	1.70E-02	0.00E+00	1.71E-05	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	5.96E-02	0.00E+00	1.09E-02	0.00E+00	1.40E-04	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 - Vapor MJ/FU	0.00E+00	0.00E+00	1.36E-01	0.00E+00	2.38E-02	0.00E+00	2.83E-04	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 - 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	Total Fabrication	Total Installation	Total Use	Total End of Life	Total Life Cycle	Benefits and impacts beyond the system limits
Climate change - total	kg CO2 eq/FU	2.27E+00	5.28E-01	3.14E-03	1.17E-01	2.92E+00	0.00E+00
Climate change - fossil	kg CO2 eq/FU	2.34E+00	4.79E-01	2.66E-03	4.95E-02	2.87E+00	0.00E+00
Climate change - biogenic	kg CO2 eq/FU	-1.11E-01	4.57E-02	4.80E-06	6.78E-02	2.26E-03	0.00E+00
Climate change - land use and change	kg CO2 eq/FU	4.08E-02	3.58E-03	4.75E-04	3.39E-06	4.48E-02	0.00E+00
Ozone depletion	kg CFC 11 eq/FU	6.50E-07	5.90E-08	6.26E-11	3.40E-10	7.10E-07	0.00E+00
Acidification	mole of H+ eq/FU	1.29E-02	2.03E-03	1.31E-05	5.70E-05	1.50E-02	0.00E+00
Eutrophication, freshwater	kg P eq/FU	2.21E-04	2.55E-05	1.40E-07	1.03E-07	2.47E-04	0.00E+00
Eutrophication, marine	kg N eq/FU	8.42E-03	8.58E-04	6.19E-06	2.95E-05	9.31E-03	0.00E+00
Eutrophication, terrestrial	mole of N eq/FU	3.81E-02	5.06E-03	3.31E-05	2.29E-04	4.34E-02	0.00E+00
Photochemical ozone formation	kg NMVOC eq/FU	9.19E-03	1.94E-03	9.81E-06	1.05E-04	1.13E-02	0.00E+00
Resource use, minerals and metals	kg Sb eq/FU	4.04E-03	3.25E-04	3.40E-08	3.62E-08	4.37E-03	0.00E+00
Resource use, fossils	MJ/FU	3.97E+01	9.03E+00	4.35E-02	2.39E-01	4.90E+01	0.00E+00
Water use	m³ world eq deprived/FU	6.66E+00	6.54E-01	1.02E-02	-2.91E-03	7.32E+00	0.00E+00
Particulate matter	Disease incidence/FU	1.12E-07	2.22E-08	1.46E-10	1.49E-09	1.36E-07	0.00E+00
Ionising radiation	kBq of U235 eq/FU	7.90E-02	1.47E-02	1.15E-04	1.23E-04	9.39E-02	0.00E+00
Ecotoxicity, freshwater	CTUe/FU	3.03E+01	4.61E+00	4.33E-02	4.10E+00	3.90E+01	0.00E+00
Human toxicity, cancer	CTUh/FU	8.63E-09	1.68E-09	1.45E-11	8.34E-11	1.04E-08	0.00E+00
Human toxicity, non-cancer	CTUh/FU	3.59E-08	8.16E-09	4.80E-11	1.87E-10	4.43E-08	0.00E+00
Land use	Dimensionless/FU	2.42E+01	3.05E+00	4.68E-02	4.18E-01	2.77E+01	0.00E+00
Use of renewable primary energy excluding the renewable primary energy resources used as raw materials	MJ/FU	4.21E+00	6.75E-01	2.04E-02	5.54E-03	4.91E+00	0.00E+00
Use of renewable primary energy resources used as raw materials	MJ/FU	1.48E+00	-2.43E-01	0.00E+00	0.00E+00	1.24E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primay energy resources used as raw materials)	MJ/FU	5.69E+00	4.32E-01	2.04E-02	5.54E-03	6.15E+00	0.00E+00
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ/FU	3.17E+01	6.57E+00	-1.08E-02	2.39E-01	3.85E+01	0.00E+00
Use of non-renewable primary energy resources used as raw materials	MJ/FU	7.92E+00	2.44E+00	5.48E-02	0.00E+00	1.04E+01	0.00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ/FU	3.96E+01	9.01E+00	4.40E-02	2.39E-01	4.89E+01	0.00E+00
Use of secondary materials	kg/FU	3.25E-02	2.60E-03	0.00E+00	0.00E+00	3.51E-02	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	2.09E-01	1.98E-02	2.48E-04	-2.87E-03	2.26E-01	0.00E+00
Hazardous waste disposed	kg/FU	6.34E-03	7.36E-04	3.89E-06	1.74E-05	7.10E-03	0.00E+00

Non-hazardous waste disposed	kg/FU	1.52E+00	3.57E-01	1.74E-03	6.50E-01	2.53E+00	0.00E+00
Radioactive waste disposed	kg/FU	5.03E-05	1.01E-05	8.99E-08	7.93E-08	6.06E-05	0.00E+00
Components for re-use	kg/FU	0.00E+00	3.68E-03	0.00E+00	0.00E+00	3.68E-03	0.00E+00
Materials for recycling	kg/FU	2.47E-04	1.70E-02	1.71E-05	0.00E+00	1.72E-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	5.96E-02	1.09E-02	1.40E-04	0.00E+00	7.06E-02	0.00E+00
Exported energy - Vapor	MJ/FU	1.36E-01	2.38E-02	2.83E-04	0.00E+00	1.60E-01	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

Table compliant with the Order of October 20, 2022, amending the Order of December 14, 2021, regarding the environmental declaration of products intended for use in building works and the environmental declaration of products used for calculating the environmental performance of buildings.

Due to rounding to the third significant figure, the values for the stages and for the life cycle total may not match the sum of the values of the corresponding modules.

7 Additional information on the release of hazardous substances into indoor air, soil and water during the period of use

Domain	Emissions type	Test results	Justification and/or test report
Emissions to indoor air [1] [2]	VOC and formaldehyde emissions		Reports MAIC-2011-2212. Eurofins G08387B et G08385B. BRE W11/09/08, W11/09/08, W11/09/07, W11/09/12, W11/09/11
	Behaviour regarding fungal and bacterial growth	No tests were performed.	The materials used are not known to be affected by microorganism growth.
	Natural radioactive emissions from construction products	No tests were performed	The product is not subject to the radiological characterization requirement under the 2018-434 decree of the 4 of June 2018[2].
	Fiber and particle emissions	No tests were performed	
Emissions to soil and water[1] [2]	Emissions to water	No tests were performed	Not applicable as this product is not in contact with water intended for human consumption, runoff water, infiltration water, groundwater, or surface water.
	Emissions to soil	No tests were performed	Not applicable as this product is not in contact with soil.

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) Annex P of the INIES program regulation is used as a guide for drafting health and comfort information.

[2] Décret n° 2018-434 du 4 juin 2018 portant diverses dispositions en matière nucléaire
https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000036984723

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

Product characteristics that contribute to ensuring hygrothermal comfort in the building:
The products do not claim any hygrothermal comfort performance. No tests have been performed.

Product characteristics that contribute to ensuring acoustic comfort in the building:
The sound absorption coefficient αw is 0.10 according to the standard NF EN ISO 11654 or NF EN ISO 354.
Sources: Reports Peutz A 3233-1E-RA-001, Peutz A 3151-1F-RA-001, LNE P181363

Product characteristics that contribute to ensuring visual comfort in the building:
The products contribute to the lighting atmospheres of buildings.

Product characteristics that contribute to ensuring olfactory comfort in the building:
The products do not claim any olfactory comfort performance. No tests have been conducted.

9 ADDITIONAL INFORMATIONS

None.

10 BIBLIOGRAPHY

NF EN ISO 14025:2010 - Marquages et déclarations environnementaux - Déclarations environnementales de Type III - Principes et modes opératoires

NF EN 15804+A2:2019 - Contribution des ouvrages de construction au développement durable — Déclarations environnementales sur les produits — Règles régissant les catégories de produits de construction

NF EN 15804+A2/CN:2022 - Contribution des ouvrages de construction au développement durable — Déclarations environnementales sur les produits — Règles régissant les catégories de produits de construction — Complément national à la NF EN 15804+A2

NF EN ISO 14040:2006 – Management environnemental – Analyse du cycle de vie – Principe et cadre

NF EN ISO 14044:2006 - Management environnemental – Analyse du cycle de vie – Exigences et lignes directrices

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