

ENVIRONMENTAL PRODUCT DECLARATION

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*In compliance with the NF EN 15804+A2 standard and its
national supplement NF EN 15804+A2/CN*

SB 05 NIDA panel (with installation accessories)

Registration number: 20231035280

Date of 1st publication: 11.10.2023 Version:

V1



1. Warning

The information in this declaration is provided under the responsibility of Plasteurop (producer of the EPD) in accordance with NF EN 15804+A2 and national supplement NF EN 15804+A2/CN.

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

The CEN NF EN 15804+A2 standard and national supplement NF EN 15804+A2/CN are used as product categories definition rules (RCP).

2. Reading guide

Reading example: $-9.0 \text{ E } -03 = -9.0 \times 10^{-3}$

The following display rules apply:

- When the result of the inventory calculation is null, a zero value is displayed.
- Abbreviation used: N/A: Not Applicable
FU: Functional Unit
- The units used are indicated in front of each flow: kilogrammes "kg", grammes "g", kilowatt-hours "kWh", megajoule "MJ", square metre "m²", kelvin "K", watt "W", kilometre "km" and millimetre "mm".

3. Precautions when using the EPD to compare products

Construction product EPDs may not be comparable if they are not compliant with the NF EN 15804+A2 standard.

The NF EN 15804+A2 standard in § 5.3 Comparability of EPDs for construction products, defines the conditions in which construction products can be compared based on the information provided by the EPD:

"As a result, comparing the environmental performance of construction products using information from EPDs must be based on the use of the products and their impacts on the building, and must take into account the entire life cycle (all information modules)"

NOTE 1

Outside the context of building environment assessments, EPDs are not tools that can be used to compare 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 alongside the socio-economic aspects and impacts relating to the building.

NOTE 3

Reference values are required to interpret comparisons.

• General information

- EPD declaring party: Plasteurop Route de Chaveyriat - BP10 - 01540 Vonnas
www.plasteurop.fr
- The manufacturer for which the EPD is representative: Plasteurop Route de Chaveyriat - BP10 - 01540 Vonnas
- EPD type: "From cradle to grave" (with module D)
- EPD type: individual range
- Product commercial reference identification: SB 05 NIDA
- Validity framework

Parameters considered for the variability study:

- Minimum surface density of steel: 9.05 kg / m²
- Average surface density of steel: 10.2 kg / m²
- Maximum surface density of steel: 11.4 kg / m²

	Global warming (kg eq CO2)	Non-renewable process primary energy (MJ)	Non-hazardous waste eliminated (kg)
Maximum observed result	113.8	1878.6	71.2
Maximum observed variation	1.04	1.05	1.06

As shown in the table above, all the observed variations are below the threshold of 1.35 set by appendix O of the NF EN 15804+A2/CN standard.

- The EPD was produced by Anna Palisson, L'Institut de l'Enveloppe Métallique 6, 14 rue La Pérouse, 75784 Paris Cedex 16, France
- Independent external verification carried out in accordance with the ISO 14025 environmental declaration programme by: Maxime POUSSE

The CEN standard EN 15804 is used as RCP ^{a)} .
Independent verification of the declaration and data in accordance with EN ISO 14025: 2010 External
Third-party verification: Maxime POUSSE
ISO 14025 compliant programme registration number: 20231035280
Date of 1st publication: 11.10.2023
Updated on: October 2023
Verification date: 11.10.2023
Validity: 31.12.2028
a) Product category definition rules b) Optional for business-to-business communication, mandatory for business-to-consumer communications (see EN ISO 14025: 2010, 9.4)

• Functional unit and product description

- Functional unit description: Create 1 m² of interior wall or ceiling based on a reference life of 50 years while guaranteeing the performances specific to clean rooms.
- Main functional unit performance: Create 1 m² of interior wall or ceiling
- Product and packaging description:
 - The product studied, of an average surface density of 13.3 kg/m², is an interior wall and ceiling panel composed of two steel facings (10.2 kg/m²), an aluminium honeycomb core (1.2 kg/m²) and an aluminium profile which forms the outer edges of the panel (1.2 kg/m²).

The products covered by this EPD have a steel surface density of 9.05 to 11.4 kg/m² (corresponding to a thickness of 0.6 and 0.75 mm).

There are three possible coatings for the steel facings:

- Polyester 25 µm
- PVC 150 µm
- PET 50 µm

The installation accessories have a surface density of 5.0 kg/m².

○ The packaging is composed of:

- Protective film 2.2 E-01 kg/m²
- Wooden pallets 2.2 E-01 kg/m²
- Battens 1.1 E-01 kg/m²
- Polystyrene 6.4 E-02 kg/m²
- Cardboard 1.1 E-02 kg/m²
- Plastic strapping 5.9 E-03 kg/m²

- Product use description (applications): It is used as interior walls and ceilings in clean rooms.
- Other technical specifications not included in the functional unit: Fire reaction class A2-s1, dO
- Description of the product main components and/or materials: The product is essentially composed of pre-lacquered steel facings (77% of the total weight), aluminium (18% of the total weight) and the rest is composed of glue, protective film and aluminium adhesive tape.
- The product does not contain any substances on the REACH regulation candidate list.
- Proof of fitness for purpose:
 - Cahier du CSTB 3501 March 2004, "Panneaux sandwichs isolants à parements métalliques - conditions générales de conception et fabrication" (Insulating sandwich panels with metal facings - general design and manufacturing conditions)
- Distribution channel (BtoB)
- Description of the reference lifetime (if applicable and in accordance with 7.3.3.2 of the NF EN 15804 standard):
The reference lifetime is 50 years.

Parameter	Units (expressed in functional units)
Reference lifetime	50 years
Declared product properties (ex works) and finishes, etc.	Cf (*1)
Theoretical application parameters (if imposed by the manufacturer), including references to relevant requirements and application codes)	Cf (*1)
Presumed quality of the works	Cf (*1)
Indoor environment (for indoor products)	Cf (*1)
Outdoor environment (for outdoor products)	Cf (*1)
Use conditions	Cf (*1)
Maintenance scenario	Monthly, non-intensive maintenance. The amount of cleaning water is estimated to be 10 litres/m ² /year. Water consumption over the product lifetime is therefore equal to 500 litres.

(*1) Manufacturer data

Reference lifetime description

Biogenic carbon content	Unit (expressed per functional unit or per declared unit)
Product biogenic carbon content (ex works)	0 kg C
Biogenic carbon content of the associated packaging (ex works)	0.14 kg C

Information on the biogenic carbon content

- Life cycle stages

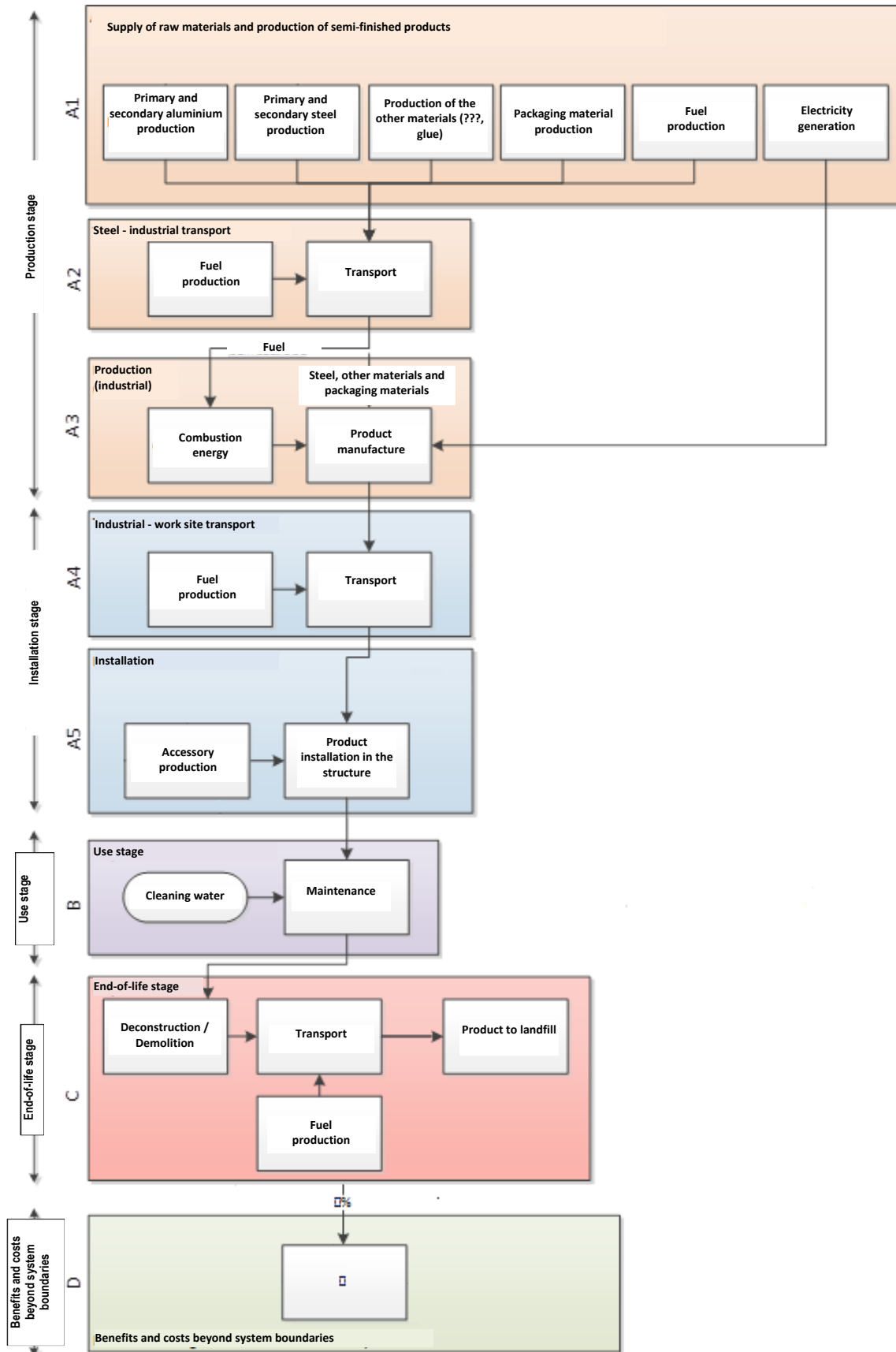


Figure 1 - Product life cycle

DESCRIPTION OF THE SYSTEM BOUNDARIES (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)														
PRODUCTION STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END-OF-LIFE STAGE				BENEFITS AND COSTS BEYOND THE SYSTEM BOUNDARIES
Product	Transport	Installation construction process	Use	Maintenance	Repairs	Replacement	Refurbishment	Energy use during the use stage	Water use during the use stage	Demolition/Deconstruction	Transport	Waste processing	Elimination	Possibility of reuse, recovery and 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

Production stage, A1-A3

- Production module A1 covers the supply of raw materials and the production of steel facings, aluminium honeycomb and profiles and other materials composing the product (glue and protective film), fuel (natural gas), packaging materials and electricity consumed in the manufacture of the product under study.
- Transport module A2 covers the transport of the steel facing, aluminium honeycomb and profiles, glue and protective film, fuel and packaging materials to the manufacturer. The means of transport, distances, quantities transported and costs for road transport are provided by the Vonnas site.
- Production module A3 covers the manufacture of the product under study in the manufacturer's workshops. It includes combustion energy, atmospheric emissions and the production and land-filling of waste. The steel facings are cut to the length of the panels to be produced, surfaced and profiled from reels on an automatic line. The process of gluing the panels on the discontinuous line includes the following operations:
 - Application of the glue by beading or spraying on the first facing and then on the second facing
 - Installation of the interlocking profiles around the panel edges
 - Installation of the core matching the panel dimension
 - Installation of the second facing on the core and the interlocking profile.
 - Once the adhesive has cured (under a heated press), the panels are removed to the stacking area.
 - Manual packing

Implementation stage, A4-A5

- Transport module A4 covers the transport by truck of the product from the production site to the construction site. The modelling takes into account the production and combustion of diesel for transport. There are no product offcuts during transport.

Scenario information	Units (expressed per functional unit)
Type of fuel and vehicle consumption or type of vehicle used for the transport	Average truck fleet in Europe in 2005 for the fuel type
Distance	408 km
Capacity use (including empty returns)	30% empty returns
Bulk density of the transported products	260 kg / m ³
Capacity use ratio	<1

Transport to the construction site

- The A5 installation module takes into account the production of the assembly accessories and packaging material end-of-life (rates taken from EUROSTAT data, see below). The panel is cut to the correct size at the factory, so there are no offcuts during installation.

	Paper Cardboard	Plastic materials	Wood	Steel
Landfill	0.0%	4.0%	1.4%	4%
Incineration	4.5%	72.1%	43.8%	0%
Recycling	95.5%	23.9%	54.7%	96%

- The energy used for screwing is included in the cut-off rule.

Scenario information	Units (expressed per functional unit)
Auxiliary inputs for installation	Accessories: 5.0 kg/m ² : <ul style="list-style-type: none"> Aluminium accessories = 4.4 kg/m² Seal = 5.4 E-01 kg/m² Stainless steel hardware = 3.9 E-02 kg/m² Steel lag bolt = 2.7 E-02 kg/m² Plastic anchor = 3.0 E-03 kg/m²
Water use	0 m ³
Use of other resources	0 kg
Quantitative description of the type of energy (regional mix) and consumption during the installation process	0 kWh
Material waste on the construction site prior to the processing of the waste generated by the installation of the product	The rate of offcuts during installation is 0%. Incinerated and landfilled packaging material waste: <ul style="list-style-type: none"> Protective film 1.7 E-01 kg/m² Wooden pallets 9.8 E-02 kg/m² Battens 4.9 E-02 kg/m² Polystyrene 4.9 E-02 kg/m² Cardboard 5.1 E-04 kg/m² Plastic strapping 4.5 E-03 kg/m² End-of-life data for packaging materials is from EUROSTAT.
Outgoing materials produced by waste processing on the construction site	Recycled packaging materials: <ul style="list-style-type: none"> Protective film 5.4 E-02 kg/m² Wooden pallets 1.2 E-01 kg/m² Battens 5.9 E-02 kg/m² Polystyrene 1.5E-02 kg/m² Cardboard 1.1 E-02 kg/m² Plastic strapping 1.4 E-03 kg/m² End-of-life data for packaging materials is from EUROSTAT.
Direct emissions into the air, soil and water	N/A

Installation in the building

Use stage (excluding potential savings), B1-B7

- The product's service life only consists in the cleaning of the interior wall or ceiling panels with water to ensure its longevity (maintenance module B2). The other modules (B1 and B3 to B7) are reported with null values because the product is not concerned during its service life.

Scenario information	Units (expressed per functional unit)
B2 Maintenance	
Maintenance process	Washing once a month, rinsing with clean water
Maintenance cycle	Once a month
Auxiliary inputs for maintenance	0 kg/cycle
Product waste from maintenance	0 kg
Net fresh water consumption during maintenance	10 L/m2/year The net fresh water consumption during the life of the product is equal to 500 litres
Energy input during maintenance	0 kWh

Maintenance

End-of-life stage C1-C4

- The deconstruction/demolition C1 module covers the removal of the product in the structure. Here the module covers the unscrewing. The unscrewing energy is included in the cut-off rule.
- Transport module C2 covers the transport of the removed products from their service life location to the landfill. The modelling takes into account the production and combustion of diesel for transport.
- Deconstruction products are not processed (C3) and are sent to landfill.
- The landfill module C4 includes the physical pre-processing of the waste, its storage and site management. At this stage the eliminated product is waste which is stored in a landfill site.

Process	Units (expressed per functional unit)
Collection process indicated by type	The deconstruction products are not sorted.
Recovery system indicated by type	0 kg of the product weight is recovered.
Elimination indicated by type	13.3 kg of the product (+5.0 kg of accessories) is put into landfill.
Assumptions for scenario development	Transport distance to landfill: 50 km

Recycling potential, module D

There is no product, accessory or packaging waste recycling potential.

Information for the life cycle analysis calculation

Product category rules used	CEN standard NF EN 15804+A2 and national supplement NF EN 15804+A2/CN are used as the rules to defined the product categories
System boundaries	From the extraction of raw materials to the disposal of the product in landfill at the end of its life. The D module is null.
Assignments	The assignments of energy consumption to the product under study on its manufacturing site are proportional to the quantity of manufactured product surface area. The quantities of steel, aluminium and packaging materials are those directly related to the studied product, without assignment.
Geographical representativeness Time	Country of production: France and Belgium Year of production data: 2021 Secondary database: Ecoinvent v3.9.1 Characterisation method: EF v3.1 for the environmental impact indicators
Variability of results	See the table in the "General information, item 4" section

- **Life cycle analysis results**

The tables below summarise the LCA results.

Totals may not add up due to rounding.

For the energy indicators used as raw materials: a negative value corresponds to the change in use from raw materials to fuels (in the case of incineration, for example). Application of Annex M of NF EN 15804+A2/CN.

REFERENCE ENVIRONMENTAL IMPACT INDICATORS															
Environmental impacts	Production stage	Construction stage		Use stage							End-of-life stage				D Benefits and costs beyond system boundaries
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repairs	B4 Replacement	B5 Refurbishment	B6 Energy use	B7 Water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Elimination	
Climate change - total <i>kg CO2 equiv/FU</i>	6.15E+01	5.56E-01	4.72E+01	0	1.19E-01	0	0	0	0	0	0	2.09E-01	0	2.90E-01	0
Climate change - fossil fuels <i>kg CO2 equiv/FU</i>	6.14E+01	5.56E-01	4.61E+01	0	1.15E-01	0	0	0	0	0	0	2.08E-01	0	2.74E-01	0
Climate change - biogenic <i>kg CO2 equiv/FU</i>	-2.76E-01	4.86E-04	6.43E-01	0	3.37E-03	0	0	0	0	0	0	1.82E-04	0	1.65E-02	0
Climate change - land use and land use change <i>kg CO2 equiv/FU</i>	4.34E-01	2.70E-04	7.62E-01	0	2.44E-04	0	0	0	0	0	0	1.01E-04	0	7.04E-05	0
Ozone layer depletion <i>kg CFC11 equiv/FU</i>	1.82E-06	1.21E-08	9.94E-07	0	3.34E-09	0	0	0	0	0	0	4.53E-09	0	4.86E-09	0
Acidification <i>mole of H+ equiv/FU</i>	3.95E-04	1.81E-06	3.25E-04	0	7.50E-07	0	0	0	0	0	0	6.79E-07	0	1.22E-06	0
Aquatic eutrophication, fresh water <i>kg P eq./FU</i>	2.45E-05	3.89E-08	1.97E-05	0	9.04E-08	0	0	0	0	0	0	1.46E-08	0	1.86E-08	0
Marine aquatic eutrophication <i>kg N eq./FU</i>	5.98E-02	6.23E-04	4.52E-02	0	1.09E-04	0	0	0	0	0	0	2.34E-04	0	1.30E-02	0
Land-based eutrophication <i>mole of N eq./FU</i>	9.48E-01	6.58E-03	4.50E-01	0	1.01E-03	0	0	0	0	0	0	2.47E-03	0	5.31E-03	0
Photochemical ozone formation <i>kg NMVOC equiv/FU</i>	2.49E-04	2.71E-06	1.70E-04	0	3.38E-07	0	0	0	0	0	0	1.01E-06	0	1.89E-06	0
Depletion of abiotic resources (minerals & metals) <i>kg Sb equiv/FU</i>	4.16E-04	1.83E-06	8.23E-05	0	6.93E-07	0	0	0	0	0	0	6.84E-07	0	6.10E-07	0
Depletion of abiotic resources (fossil fuels) <i>MJ/FU</i>	1.17E+03	7.94E+00	5.97E+02	0	2.39E+00	0	0	0	0	0	0	2.98E+00	0	4.01E+00	0
Water requirements <i>m³ of equiv. deprivation in the world/FU</i>	6.92E-04	1.24E-06	3.38E-04	0	1.53E+00	0	0	0	0	0	0	4.66E-07	0	2.45E-06	0

Reference environmental impact indicators¹

¹ Depletion of abiotic resources (minerals and metals), Depletion of abiotic resources (fossil fuels) & Water requirements: The results of this environmental impact indicator must be used with caution because the uncertainties of these results are high or because the experience related to this indicator is limited.

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS															
Environmental impacts	Production stage	Construction stage		Use stage							End-of-life stage				D Benefits and costs beyond system boundaries
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repairs	B4 Replacement	B5 Refurbishment	B6 Energy use	B7 Water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Elimination	
Fine particle emissions <i>Disease index/FU</i>	4.82E-06	4.42E-08	3.43E-06	0	4.32E-09	0	0	0	0	0	0	1.66E-08	0	2.70E-08	0
Ionising radiation (human health) <i>kBq of U235 equiv/FU</i>	2.28E+01	1.05E-02	5.42E+00	0	5.91E-02	0	0	0	0	0	0	3.95E-03	0	2.10E-02	0
Ecotoxicity (fresh water) <i>CTUe/FU</i>	4.33E+02	3.89E+00	1.51E+02	0	4.46E-01	0	0	0	0	0	0	1.46E+00	0	5.79E+01	0
Human toxicity, carcinogenic effects <i>CTUh/FU</i>	2.26E-07	2.53E-10	1.11E-07	0	7.83E-11	0	0	0	0	0	0	9.49E-11	0	2.21E-10	0
Human toxicity, non-carcinogenic effects <i>CTUh/FU</i>	9.91E-07	5.59E-09	1.17E-06	0	1.82E-09	0	0	0	0	0	0	2.10E-09	0	2.41E-09	0
Impacts related to land use / Soil quality <i>No dimension/FU</i>	1.60E+02	4.69E+00	5.54E+01	0	4.99E-01	0	0	0	0	0	0	1.76E+00	0	7.98E+00	0

Additional environmental impact indicators²³

² Ionising radiation: This category of impact mainly covers the possible impact on human health of low-dose ionising radiation from the nuclear fuel cycle. It does not take into account the consequences of possible nuclear accidents, occupational exposure or the disposal of radioactive waste in underground facilities. Potential ionising radiation from the ground, radon and certain building materials is not measured by this indicator either.

³ Ecotoxicity (fresh water), human toxicity, carcinogenic effects, human toxicity, non-carcinogenic effects & Impacts linked to land use/soil quality: The results of this environmental impact indicator must be used with caution because the uncertainties of these results are high or because the experience related to this indicator is limited.

USE OF RESOURCES															
Use of resources	Production stage	Construction stage		Use stage							End-of-life stage				D Benefits and costs beyond system boundaries
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repairs	B4 Replacement	B5 Refurbishment	B6 Energy use	B7 Water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Elimination	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials <i>MJ/FU</i>	1.54E+02	1.20E-01	1.95E+02	0	3.95E-01	0	0	0	0	0	0	4.50E-02	0	4.28E-01	0
Use of renewable primary energy resources as raw materials <i>MJ/FU</i>	6.42E+00	0	-3.41E+00	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) - <i>MJ/FU</i>	1.61E+02	1.20E-01	1.92E+02	0	3.95E-01	0	0	0	0	0	0	4.50E-02	0	4.28E-01	0
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials <i>MJ/FU</i>	1.14E+03	7.94E+00	5.95E+02	0	2.39E+00	0	0	0	0	0	0	2.98E+00	0	4.01E+00	0
Use of non-renewable primary energy resources as raw materials <i>MJ/FU</i>	3.20E+01	0	2.32E+00	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - <i>MJ/FU</i>	1.17E+03	7.94E+00	5.97E+02	0	2.39E+00	0	0	0	0	0	0	2.98E+00	0	4.01E+00	0
Use of secondary materials - <i>kg/FU</i>	2.37E+00	0	6.26E-03	0	0	0	0	0	0	0	0	0	0	0	0
Use of secondary renewable fuels <i>MJ/FU</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels - <i>MJ/FU</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net use of fresh water - <i>m³ /FU</i>	2.27E-04	4.07E-07	1.11E-04	0	5.01E-01	0	0	0	0	0	0	1.53E-07	0	8.04E-07	0

Use of resources

WASTE CATEGORY															
Waste category	Production stage	Construction stage		Use stage							End-of-life stage				D Benefits and costs beyond system boundaries
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repairs	B4 Replacement	B5 Refurbishment	B6 Energy use	B7 Water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Elimination	
Hazardous waste disposed of - <i>kg/FU</i>	9.07E-02	9.07E-08	4.66E-06	0	1.76E-08	0	0	0	0	0	0	3.40E-08	0	3.33E-08	0
Non-hazardous waste disposed of - <i>kg/FU</i>	3.30E+01	4.48E-01	1.52E+01	0	4.63E-02	0	0	0	0	0	0	1.68E-01	0	1.82E+01	0
Radioactive waste disposed of - <i>kg/FU</i>	6.40E-03	2.56E-06	1.40E-03	0	1.52E-05	0	0	0	0	0	0	9.60E-07	0	4.72E-06	0

Waste category

OUTGOING FLOWS															
Outgoing flows	Production stage	Construction stage		Use stage							End-of-life stage				D Benefits and costs beyond system boundaries
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repairs	B4 Replacement	B5 Refurbishment	B6 Energy use	B7 Water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Elimination	
Components for re-use - <i>kg/FU</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for recycling - <i>kg/FU</i>	1.20E+00	0	3.11E-01	0	0	0	0	0	0	0	0	0	0	0	0
Materials for energy recovery <i>kg/FU</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Electric energy supplied externally - <i>MJ/FU</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Steam energy supplied externally - <i>MJ/FU</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas and process energy supplied externally - <i>MJ/FU</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Outgoing flows

ENVIRONMENTAL IMPACTS

Aggregation of the various modules to produce a "Stage Total" or "Life Cycle Total"

Impacts/Flows	Production stage	Construction stage	Use stage	End-of-life stage	Total life cycle	Stage Benefits and Costs beyond the boundaries of the system
Reference environmental impact indicators						
Climate change - total <i>kg CO2 equiv/FU</i>	6.15E+01	4.78E+01	1.19E-01	4.99E-01	1.10E+02	0
Climate change - fossil fuels <i>kg CO2 equiv/FU</i>	6.14E+01	4.66E+01	1.15E-01	4.82E-01	1.09E+02	0
Climate change - biogenic <i>kg CO2 equiv/FU</i>	-2.76E-01	6.43E-01	3.37E-03	1.67E-02	3.87E-01	0
Climate change - land use and land use change <i>kg CO2 equiv/FU</i>	4.34E-01	7.62E-01	2.44E-04	1.72E-04	1.20E+00	0
Ozone layer depletion <i>kg CFC11 equiv/FU</i>	1.82E-06	1.01E-06	3.34E-09	9.39E-09	2.84E-06	0
Acidification <i>mole of H+ equiv/FU</i>	3.95E-04	3.27E-04	7.50E-07	1.90E-06	7.25E-04	0
Aquatic eutrophication, fresh water <i>kg P eq./FU</i>	2.45E-05	1.97E-05	9.04E-08	3.32E-08	4.43E-05	0
Marine aquatic eutrophication <i>kg N eq./FU</i>	5.98E-02	4.58E-02	1.09E-04	1.32E-02	1.19E-01	0
Land-based eutrophication <i>mole of N eq./FU</i>	9.48E-01	4.57E-01	1.01E-03	7.78E-03	1.41E+00	0
Photochemical ozone formation <i>kg NMVOC equiv/FU</i>	2.49E-04	1.73E-04	3.38E-07	2.91E-06	4.25E-04	0
Depletion of abiotic resources (minerals & metals) <i>kg Sb equiv/FU</i>	4.16E-04	8.41E-05	6.93E-07	1.29E-06	5.03E-04	0
Depletion of abiotic resources (fossil fuels) <i>MJ/FU</i>	1.17E+03	6.05E+02	2.39E+00	6.98E+00	1.79E+03	0
Water requirements <i>m³ of equiv. deprivation in the world/FU</i>	6.92E-04	3.39E-04	1.53E+00	2.92E-06	1.53E+00	0

Environmental impacts (1/4)

Impacts/Flows	Production stage	Construction stage	Use stage	End-of-life stage	Total life cycle	Stage Benefits and Costs beyond the boundaries of the system
Additional environmental impact indicators						
Fine particle emissions <i>Disease index/FU</i>	4.82E-06	3.48E-06	4.32E-09	4.35E-08	8.35E-06	0
Ionising radiation (human health) <i>kBq of U235 equiv/FU</i>	2.28E+01	5.43E+00	5.91E-02	2.50E-02	2.84E+01	0
Ecotoxicity (fresh water) <i>CTUe/FU</i>	4.33E+02	1.55E+02	4.46E-01	5.94E+01	6.48E+02	0
Human toxicity, carcinogenic effects <i>CTUh/FU</i>	2.26E-07	1.11E-07	7.83E-11	3.16E-10	3.38E-07	0
Human toxicity, non-carcinogenic effects <i>CTUh/FU</i>	9.91E-07	1.18E-06	1.82E-09	4.51E-09	2.18E-06	0
Impacts related to land use / Soil quality <i>No dimension/FU</i>	1.60E+02	6.01E+01	4.99E-01	9.74E+00	2.31E+02	0

Environmental impacts (2/4)

Impacts/Flows	Production stage	Construction stage	Use stage	End-of-life stage	Total life cycle	Stage Benefits and Costs beyond the boundaries of the system
Use of resources						
Use of renewable primary energy excluding renewable primary energy resources used as raw materials <i>MJ/FU</i>	1.54E+02	1.95E+02	3.95E-01	4.73E-01	3.51E+02	0
Use of renewable primary energy resources as raw materials <i>MJ/FU</i>	6.42E+00	-3.41E+00	0	0	3.01E+00	0
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) - <i>MJ/FU</i>	1.61E+02	1.92E+02	3.95E-01	4.73E-01	3.54E+02	0
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials <i>MJ/FU</i>	1.14E+03	6.03E+02	2.39E+00	6.98E+00	1.75E+03	0
Use of non-renewable primary energy resources as raw materials <i>MJ/FU</i>	3.20E+01	2.32E+00	0	0	3.43E+01	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - <i>MJ/FU</i>	1.17E+03	6.05E+02	2.39E+00	6.98E+00	1.79E+03	0
Use of secondary materials - <i>kg/FU</i>	2.37E+00	6.26E-03	0	0	2.38E+00	0
Use of secondary renewable fuels <i>MJ/FU</i>	0	0	0	0	0	0
Use of non-renewable secondary fuels - <i>MJ/FU</i>	0	0	0	0	0	0
Net use of fresh water - <i>m³/FU</i>	2.27E-04	1.11E-04	5.01E-01	9.57E-07	5.01E-01	0

Environmental impacts (3/4)

Impacts/Flows	Production stage	Construction stage	Use stage	End-of-life stage	Total life cycle	Stage Benefits and Costs beyond the boundaries of the system
Waste category						
Hazardous waste disposed of - <i>kg/FU</i>	9.07E-02	4.75E-06	1.76E-08	6.73E-08	9.07E-02	0
Non-hazardous waste disposed of - <i>kg/FU</i>	3.30E+01	1.57E+01	4.63E-02	1.84E+01	6.71E+01	0
Radioactive waste disposed of - <i>kg/FU</i>	6.40E-03	1.40E-03	1.52E-05	5.68E-06	7.83E-03	0
Outgoing flows						
Components for re-use - <i>kg/FU</i>	0	0	0	0	0	0
Materials for recycling - <i>kg/FU</i>	1.20E+00	3.11E-01	0	0	1.51E+00	0
Materials for energy recovery <i>kg/FU</i>	0	0	0	0	0	0
Electric energy supplied externally - <i>MJ/FU</i>	0	0	0	0	0	0
Steam energy supplied externally - <i>MJ/FU</i>	0	0	0	0	0	0
Gas and process energy supplied externally - <i>MJ/FU</i>	0	0	0	0	0	0

Environmental impacts (4/4)

- **Additional information on the release of hazardous substances into indoor air, soil and water during the use stage**

Indoor air.

VOCs and formaldehyde

The panel facings are made from coils of pre-lacquered steel. The lacquers used, polyester 25µm, PVC 150µm or PET 50µm, are produced in factories* and have VOC emissions below the analytical detection limits **, ***, ****.

Sources :

* The strip immediately enters an oven which allows the solvents needed to spread the product and cure the resin to evaporate. Book "De A à Z : Les profilés Minces en acier" SNPPA, 2007

** Test report n°SB-08-080, CSTB, November 2008 - "Evaluation of VOC and formaldehyde emissions from 25 µm polyester pre-coated galvanized steel products according to the ECA, AgBB and AFSSET schemes"

*** Test report no. 392-2015-00163702B 7 July 2015

**** Test report no. RES 116535 A7210 September 2013

Standard NF P 34-301 April 2017

Standard NF EN 10169 March 2022

Ground and water

Product not in contact with potable water. It may come into contact with run-off water - no tests have been conducted to date.

- **The product's contribution to quality of life inside buildings**

Product characteristics contributing to the creation of hygrothermal comfort conditions in the building

The product does not claim any hygrothermal comfort performance

Product characteristics contributing to the creation of acoustic comfort conditions in the building

The product does not claim any acoustic comfort performance

Characteristics of the product contributing to creating visual comfort conditions in the building

No tests have been conducted to date on the studied product.

The panel's steel facings are lacquered white, giving them a finished, clean, decorative aspect that is easy on the eye.

Product characteristics contributing to creating olfactory comfort conditions in the building

No tests have been conducted