Environmental Product Declaration

EPD of single product
In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Maritime Pine Plywood Panels

From **Groupe Thebault**

Programme:	The International EPD® System, www.environdec.com
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR 2019:14. Construction Products. Version 1.3.4
PCR review was conducted by: The Technical Committee of the International EPD System. A ful list of members available on environdec.com. The review panel may be contacted via info@environdec.com
Life Cycle Assessment (LCA)
LCA accountability: EVEA
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Etienne Lees-Perasso (Tide) Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☒ Yes ☐ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Groupe Thebault

Contact: Bruno PIALOUX, b.pialoux@groupe-thebault.com

Description of the organisation: THEBAULT Group is a French leading family-owned industrial group specializing in the manufacture of plywood panels.
It processes by peeling, drying and veneers preparation. The veneers are then assembled into plywood or LVL, beams and large-scale panels.
Plywood, both technical and decorative panels, is used in a wide variety of sectors, including timber and traditional construction, building, interior fittings and decoration, industrial packaging, the transport industry, boating, furniture, etc.
THEBAULT Group has 7 production units, 6 production units in France, including a logging company, as well as an exotic wood peeling unit in Gabon.
THEBAULT Group employs 400 people and generates sales of €100 million.

Product-related or management system-related certifications:

- Conformity European Union Construction Product Regulation : CE marking according EN 13986:2004+A1:2015 with AVCP 1, 2+ & 4 (depending on the product)
- Conformity European Union Deforestation Regulation (EUDR)
- Conformity REACH n°1907/2006
- Conformity with PEFC COC certification
- Conformity with SKH / KOMO certification
- Conformity with NF Exterior CTBX certification

Name and location of production site(s):
THEBAULT – Sauzé-Vaussais (79190), France
THEBAULT – Solferino (40210), France

Product information

Product name: maritime pine plywood panels for interior and exterior use (without finishing)

Product identification: Commercial references covered:

- Raw maritime pine plywood panels (ex. : TEBOPIN, TEBOFLOOR, TEBOROOF, TEBOWALL, TEBOBETON, …)

Product description: The products covered by the EPD are raw maritime pine plywood panels bound by PF resin and manufactured in France. Products are intended for interior and exterior use (including cladding, bracing, roof support, flooring, wall cladding) with an expected lifetime of 50 years.

For more information, refer to THEBAULT website: https://www.groupe-thebault.com/en/the-products/?produit-gammes=tebopin

UN CPC code: 3141

Geographical scope: Products are fabricated in THEBAULT French factories. Modules A4-A5, C1-C4, and D have been modelled to represent product transport, installation, and end of-life in Europe.

LCA information

Declared unit: "1m³ of maritime pine plywood panels for interior or exterior use (service class 1, 2, or 3 according to EN 636)."

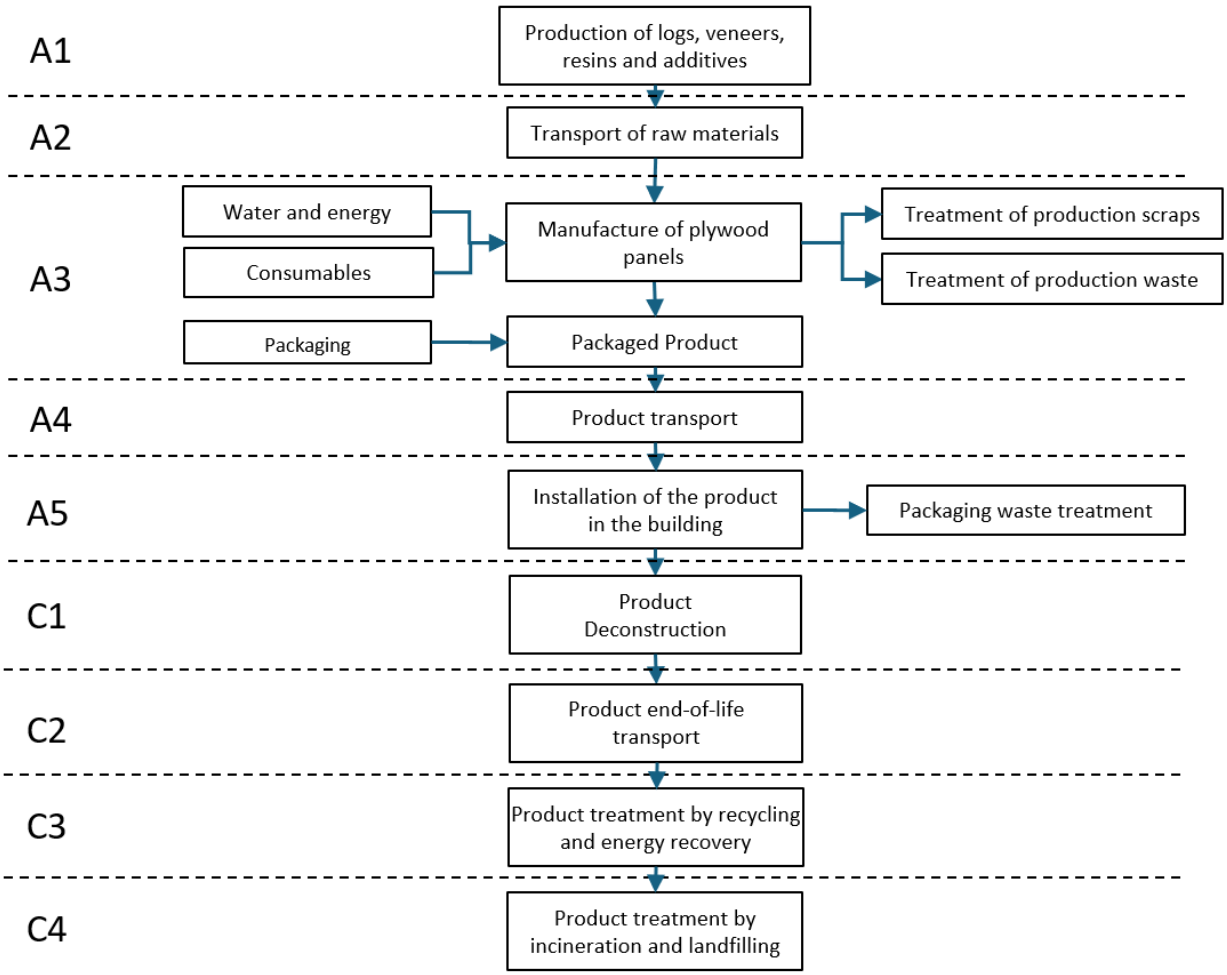
Reference service life: 50 years

Time representativeness: The primary data was collected by the declarant on its facilities, located in France, for the year 2023.

Database(s) and LCA software used:
The secondary data used are from the ecoinvent database version 3.10 (cut-off) and have been selected to be representative of the geographical area of production or processing of the materials or processes. Software used is SimaPro version 9.6.

Description of system boundaries:
Cradle to grave and module D (A + B + C + D)

System diagram:



A1 – Raw Material Manufacturing

Extraction of raw materials and subsequent processing up to the production and packaging of materials and components supplied by the manufacturer. Processes are included until the material leaves the supplier's factory gate.

A2 – Transport of raw materials

Transport of raw materials from the supplier's production site to the manufacturer's factory gate.

A3 – Fabrication

All incoming and outgoing flows contributing to the manufacture of products:

- Production losses including treatment
- Energy consumption
- Water Consumption
- Treatment of production waste
- Product packaging

Parameter	Unit	Value or description
Data type for the generation of electricity used in fabrication step A3	-	French medium voltage residual mix
Carbon intensity of electricity used in fabrication step A3	kg CO2 eq./kWh (GWP-GHG)	0.188

A4 – Product delivery

Transport of products from the factory gate to the processing site.

Parameter	Unit	Value or description
Scenario description	-	Products are transported by trucked to a reseller, then transported 30 km by van to the installation site.
Vehicle type	-	Truck EURO VI standard, GVW > 32 t Van EURO VI standard, GVW 7.5-16 t
Distance to the reseller	km	1346
Vehicle capacity utilisation including empty returns)	%	91.5
Density of transport product	kg/m^3	580
Coefficient of volume capacity use (=1 or <1 or ≥1 compressed or nested products)	-	<1

A5 – Installation of product

All incoming and outgoing flows contributing to the installation of products:

- Treatment of product packaging waste

Installation losses, complementary products (screws, etc.), and energy consumption (screw drive) are not included in absence of specific installation scenario.

B1-B7 – Product use

Not applicable

C1-C4 – Product end-of life

Parameter	Unit	Value or description
Scenario	-	The product is deconstructed, sent by truck to a sorting centre where the components are sent to end-of-life treatment.
Transport distance at end-of-life	km	50
Collected separately	kg/DU	5.80E+02
Collected with mixed construction waste	kg/DU	0.00E+00
Wood panel waste (scenario : 100% Incinerated with energy recovery)	kg/DU	5.80E+02
….Incinerated in biomass plant with energy recovery: 100%	kg/DU	5.80E+02
Material energy content	MJ/DU	9,63E+03
Material energy recovered into electricity	MJ/DU	1,14E+03
Material energy recovered into heat	MJ/DU	6,48E+03

D – Benefits and loads beyond the product system

Recovered material beyond product system	Loads beyond product system	Saving	Unit	Input	Output	Net output flow
Electricity recovered from wood incineration	None (included in C3)	Electricity production	MJ/DU	-	1.14E+03	1.14E+03
Heat recovered from wood incineration	None (included in C3)	Heat production from gas	MJ/DU	-	6,48E+03	6,48E+03

System boundaries and cut-off

The system boundaries respect the limits imposed by the PCRs. The cut-off criteria used in the event of insufficient or missing input data for an elementary process defined by EN 15804+A2 makes it possible to exclude:

- Up to 1% of renewable and non-renewable primary energy consumption and 1% of input mass per elementary process
- Up to 5% of the cumulative primary energy consumption and the incoming mass for each stage of the life cycle (example: A1-A3).

The infrastructures from ecoinvent secondary data are included.

Allocation

The rules for the allocation of by-products set out in the EN 15804+A2 standard have been complied with:

- Avoid allocation where possible
- Allocation based on physical property (e.g. mass) when the difference in revenue generated by co-products is small
- In all other cases, the allocation must be based on economic value.

The ecoinvent secondary data used are based largely, but not exclusively, on economic allocation. No other allocation has been made.

Data geographic and temporal representativeness

The primary data was collected on fabrication sites, for the year 2023. The secondary data used are from the ecoinvent database version 3.10 (cut-off) and have been selected to be representative of the geographical area of production or processing of the materials or processes.

Life cycle analysis software is SimaPro, version 9.6.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	Global	Global	FR	Europe													Europe
Specific data used	60%			60%	0%	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			0%	0%	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	<10%			0%	0%	-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product components	Product Mass, kg	Post-consumer material, mass-% of material	Biogenic material, kg C/declared unit
Wood (maritime pine)	5.29E+02	0%	2.50E+02
Phenol formaldehyde (resin mix)	2.91E+01	0%	0.00E+00
Additives (resin mix)	7.60E+00	0%	0.00E+00
Water (resin mix)	1.39E+01	0%	0.00E+00
TOTAL	5.80E+02	0%	2.50E+02
Packaging materials	**Product Mass, kg**	**Mass -% (versus the product)**	**Mass biogenic carbon, kg C/ declared unit**
Particleboard	2,08E+00	0.36%	8.65E-01
Fibreboard	2,45E-01	0.042%	9.70E-02
Plastic	9,73E-02	0.017%	0.00E+00
Cardboard	3,25E-03	0.00056%	1.30E-03
TOTAL	2,43E+00	0.41%	9,62E-01

The products do not contain substances classified as very high concern (SVHC) on the candidate list of Annex XIV of the REACH Regulation at more than 0.1% by mass.

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	1,57E+02	6,99E+01	9,07E-01	0	0	0	0	0	0	0	0,00E+00	1,98E+00	5,92E+01	0,00E+00	-6,03E+02
GWP-biogenic	kg CO_2 eq.	-9,21E+02	1,29E-02	3,52E+00	0	0	0	0	0	0	0	0,00E+00	3,64E-04	9,19E+02	0,00E+00	-1,12E+01
GWP-luluc	kg CO_2 eq.	9,50E-01	2,27E-02	3,42E-04	0	0	0	0	0	0	0	0,00E+00	6,35E-04	2,63E-02	0,00E+00	-3,83E-01
GWP-total	kg CO_2 eq.	-7,62E+02	6,99E+01	4,43E+00	0	0	0	0	0	0	0	0,00E+00	1,98E+00	9,78E+02	0,00E+00	-6,15E+02
ODP	kg CFC 11 eq.	4,19E-06	1,47E-06	1,16E-08	0	0	0	0	0	0	0	0,00E+00	3,98E-08	3,13E-06	0,00E+00	-2,58E-05
AP	mol H^+ eq.	1,19E+00	1,69E-01	2,23E-03	0	0	0	0	0	0	0	0,00E+00	7,60E-03	1,04E+00	0,00E+00	-8,66E-01
EP-freshwater	kg P eq.	1,84E-02	5,25E-04	1,27E-05	0	0	0	0	0	0	0	0,00E+00	1,51E-05	1,52E-03	0,00E+00	-1,09E-02
EP-marine	kg N eq.	4,33E-01	4,62E-02	6,97E-04	0	0	0	0	0	0	0	0,00E+00	2,82E-03	3,27E-01	0,00E+00	-1,98E-01
EP-terrestrial	mol N eq.	4,87E+00	5,10E-01	7,27E-03	0	0	0	0	0	0	0	0,00E+00	3,11E-02	4,87E+00	0,00E+00	-2,13E+00
POCP	kg NMVOC eq.	1,68E+00	3,03E-01	3,00E-03	0	0	0	0	0	0	0	0,00E+00	1,16E-02	9,28E-01	0,00E+00	-1,17E+00
ADP-minerals&metals[(2)]	kg Sb eq.	9,99E-04	1,47E-04	2,59E-06	0	0	0	0	0	0	0	0,00E+00	6,54E-06	1,46E-04	0,00E+00	-3,98E-04
ADP-fossil[(2)]	MJ	5,20E+03	1,06E+03	1,01E+01	0	0	0	0	0	0	0	0,00E+00	2,79E+01	4,12E+02	0,00E+00	-1,04E+04
WDP[(2)]	m^3	3,37E+01	4,85E+00	2,18E-01	0	0	0	0	0	0	0	0,00E+00	1,10E-01	3,80E+00	0,00E+00	-3,50E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

[(2)] Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	1,59E+02	6,99E+01	9,09E-01	0	0	0	0	0	0	0	0,00E+00	1,98E+00	6,03E+01	0,00E+00	-6,15E+02
PM	Disease incidence	1,99E-05	8,16E-06	2,22E-08	0	0	0	0	0	0	0	0,00E+00	1,43E-07	1,47E-05	0,00E+00	-4,39E-06
IR[(3)]	kBq U235 eq	3,19E+01	5,01E-01	1,16E-02	0	0	0	0	0	0	0	0,00E+00	1,42E-02	1,38E+00	0,00E+00	-2,29E+01
ETP-fw[(2)]	CTUe	1,65E+03	2,21E+02	4,16E+00	0	0	0	0	0	0	0	0,00E+00	7,34E+00	3,19E+02	0,00E+00	-5,87E+02
HTP-c[(2)]	CTUh	1,69E-06	3,38E-07	2,11E-09	0	0	0	0	0	0	0	0,00E+00	1,25E-08	4,53E-07	0,00E+00	-9,41E-07
HTP-nc[(2)]	CTUh	3,65E-06	7,64E-07	7,71E-09	0	0	0	0	0	0	0	0,00E+00	1,66E-08	1,31E-05	0,00E+00	-6,70E-07
SQP[(2)]	-	7,74E+04	1,23E+03	2,34E+00	0	0	0	0	0	0	0	0,00E+00	1,50E+01	2,37E+02	0,00E+00	-5,63E+03
Acronyms	PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index															

[(2)] Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
[(3)] Disclaimer: This impact category mainly concerns the possible impact on human health of low-dose ionising radiation from the nuclear fuel cycle. It does not consider the consequences of possible nuclear accidents, occupational exposure or the disposal of radioactive waste in underground facilities. Potential ionizing radiation from soil, radon and some building materials are also not measured by this indicator.

Resource use indicators

Results per functional or declared unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3,55E+03	1,74E+01	4,97E-01	0	0	0	0	0	0	0	0,00E+00	5,20E-01	7,68E+03	0,00E+00	-1,75E+03
PERM	MJ	1,02E+04	0,00E+00	4,74E-02	0	0	0	0	0	0	0	0,00E+00	0,00E+00	-7,63E+03	0,00E+00	-1,71E+03
PERT	MJ	1,37E+04	1,74E+01	5,44E-01	0	0	0	0	0	0	0	0,00E+00	5,20E-01	4,41E+01	0,00E+00	-3,46E+03
PENRE	MJ	4,81E+03	1,06E+03	5,89E+00	0	0	0	0	0	0	0	0,00E+00	2,79E+01	7,09E+02	0,00E+00	-1,04E+04
PENRM	MJ	3,88E+02	0,00E+00	4,18E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	-2,97E+02	0,00E+00	0,00E+00
PENRT	MJ	5,20E+03	1,06E+03	1,01E+01	0	0	0	0	0	0	0	0,00E+00	2,79E+01	4,12E+02	0,00E+00	-1,04E+04
SM	kg	4,64E-02	0,00E+00	2,38E-03	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-7,27E+01
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	1,98E+00	1,57E-01	6,12E-03	0	0	0	0	0	0	0	0,00E+00	3,86E-03	1,86E-01	0,00E+00	-2,28E+00
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Waste indicators

Results per functional or declared unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	1,84E+00	3,26E-02	3,17E-02	0	0	0	0	0	0	0	0,00E+00	7,98E-04	1,52E+00	0,00E+00	-2,20E-01
Non-hazardous waste disposed	kg	9,06E+01	1,15E+02	3,50E-01	0	0	0	0	0	0	0	0,00E+00	1,44E+00	2,79E+01	0,00E+00	-4,76E+01
Radioactive waste disposed	kg	3,83E-02	3,46E-04	8,44E-06	0	0	0	0	0	0	0	0,00E+00	1,02E-05	1,13E-03	0,00E+00	-1,89E-02

Output flow indicators

Results per functional or declared unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	8,58E-01	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,82E+02
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	2,70E-03	0,00E+00	4,05E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	1,10E+03	0,00E+00	0,00E+00
Exported energy, thermal	MJ	5,41E-03	0,00E+00	8,15E+00	0	0	0	0	0	0	0	0,00E+00	0,00E+00	6,26E+03	0,00E+00	0,00E+00

Additional environmental information

None.

Additional social and economic information

None.

Differences versus previous versions

Not applicable, this is the first version.

References

General Program Instructions of the International EPD® System. Version 5.0.1.
PCR 2019:14. Construction Products. Version 1.3.4
NF EN 16485:2014

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