

Environmental Product Declaration



EPD of multiple products, based on worst-case results

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

ThermoPine and Stained ThermoPine

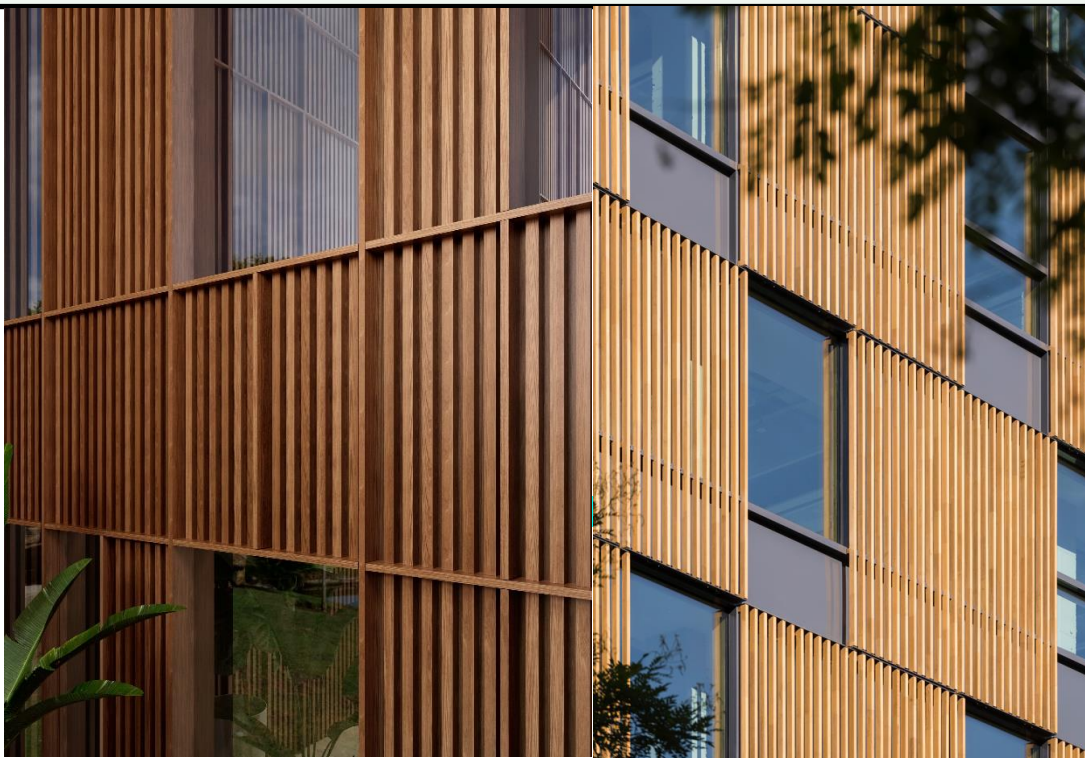
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SAVIA



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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
Website:	www.environdec.com
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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)
<i>Product Category Rules (PCR): PCR 2019:14 VERSION 1.3.2 CONSTRUCTION PRODUCTS 2023-12-08. c-PCR-006 Wood and wood-based products for use in construction (EN 16485) Based on CEN standard EN 15804. ISO standard ISO 21930 and CEN standard EN 15804 serves as the core Product Category Rules (PCR).</i>
PCR review was conducted by: The Technical Committee of the International EPD [®] System. A full list of members available on www.environdec.com . Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via info@environdec.com .
Life Cycle Assessment (LCA)
LCA accountability: <i>Ecómetro Mediciones, SL</i>
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: <input checked="" type="checkbox"/> EPD verification by individual verifier Third-party verifier: <i>Itxaso Trabudua, IK Ingeniería</i> Approved by: The International EPD [®] System Procedure for follow-up of data during EPD validity involves third party verifier: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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.

This EPD is representative for multiple (two) products and the results presented in this document are based on the worst-case product. The variation between the environmental impact between the products is presented in this document.

Company information

Owner of the EPD

Financiera Maderera S.A.

Contact:

Patricia Lopez Cacheiro (Sustainability product)

p.lopez@finsa.es

Description of the organisation:

Tradition and innovation

Finsa is a pioneering company in manufacturing particle chip boards and MDF boards on the Iberian Peninsula. The company, founded in 1931 as a small sawmill, has kept up sustainable growth even since.

Finsa currently manufactures a wide variety of wood-based products. Over the last few years, investment has focused mostly on expanding the company's international presence and on increasing its production capacity, especially in products with high added value within the technical wood processing chain: particleboards and melamine faced MDF boards, plywood, veneered wood, frames, kitchen modules, components for furniture, laminate floors, etc. Thanks to this, Finsa is now a world leader in the sector.

With great enthusiasm grounded in years of experience in the development of wood-based products, we would like you to take advantage of the opportunity to use technical wood boards in your projects and share our investment in the future of this material.

Entrepreneurial experience

Backed by 60 years dedicated to wood-based products, we are one of the leading companies in Europe. We have twenty production centres and the most advanced technology in order to ensure the highest level of quality. We boast a highly qualified human capital who identify with our company's values. A strong investment in innovation and an environmental policy based on sustainable development.

Focus on the customer

A swift and reliable logistics network: 450 vehicles out on the road daily. Wood solutions designs that adapt to the needs of the market.

An entrepreneurial spirit: ready to learn, to improve and to take up new challenges in order to offer greater value to our customers every day.

Responsibility

Finsa's commitment towards sustainable growth extends beyond the limits of our manufacturing facilities. From Nature we get wood, our main raw material, and so our obligation is to respect it and protect it.

We develop initiatives regarding the collaboration with other public and private organizations that foster the protection and efficient management of forests.

Through our Environmental Policy we are actively committed to environmental protection. We want the environmental impact of our manufacturing processes to be as small as possible.

Our production processes are optimized to achieve the maximum level of energy savings and achieve a minimum level of waste.

In addition, the waste generated by our activity can be reincorporated to the process or if it is not possible, it is used for generating energy through our biomass production facilities.

Product-related or management system-related certifications:

Forest Certifications:

- PEFC & FSC®

Wood is a sustainable and 100% recyclable material that helps to fight climate change. We buy certified wood; we certify our forests, and we help our suppliers to obtain their certification.

Since 2004 Finsa group has implemented a chain of custody certification system PEFC/FSC® which allows us to supply certified wood products to its customers. PEFC- and FSC-certified products can be supplied under request.

- Certification of chain of custody PEFC (PEFC/14-35-00006)
- Certification of chain of custody FSC® (FSC-C041397)

- EUTR

As a sign of transparency, Finsa voluntarily certifies compliance with the EU regulation 995/2010 on the legal origin of wood.

- ISO 38200

Finsa has ISO 38200 certification. Globally valid standard for the transmission of the information throughout the supply chain of wood and its derived products.

Cradle to Cradle

In 2018, work began to obtain C2C Multi-attribute Certification to ensure that a product is safe and “circular”. It is a certification directly connected with the SDGs.

The Material Health Certificate

Based on the rigorous health evaluation methodology of the Cradle-to-Cradle standard, the materials are evaluated promoting healthier and safer products.

Name and location of production site(s):

Fábrica FINSA Santiago
Carretera N-550 km. 57, Apto. 127
15707 Santiago de Compostela
A Coruña, Spain

Product information

Products name:

ThermoPine and Stained ThermoPine.

Product identification:

ThermoPine by Finsa.

Product description:

Thermopine doesn't contain traces of chemicals in it thanks to the heat-treatment process.

This treatment subjects the wood to a combination of pressure, temperature and water vapor that eliminates the need to resort to any external element, as is the case with autoclave-treated wood.

The thermal treatment improves the wood's properties, opening up a wide range of applications for use outdoors or indoors.

Characteristic	Value, units	Standard
Density	530 +/- 50 Kg/m ³	UNE-EN 408:2011+A1:2012; UNE-56-531
Humidity	4,5-7%	UNE-EN 408:2011+A1:2012; UNE-EN 13183-1:2002
Tangential shrinkage coefficient	4,65%	UNE-EN 56533:1977
Radial shrinkage coefficient	1,91%	UNE-EN 56533:1977
Impact strength (Charpy)	31,74 KJ/ m ²	UNE-EN ISO 179-1:2011; UNE-CEN/TS 1579:2009
Tread resistance (Brinell)	2,11 Kp/ mm ²	UNE-EN 1534:2011
Thermal conductivity (λ) in (W/m.k)	0,10-0,13	UNE-EN 14915:2013+A1:2017
Class of use	3,2	UNE-EN 335 2013
Reaction to fire	Clase D-s2, d0	UNE-EN 14915:2013+A1:2017
Durability against xylophagous fungi	2-durable	UNE-EN 350:2017
Durability against xylophagous beetles	D-durable	UNE-EN 350:2017

UN CPC code:

316 – Builders' joinery and carpentry of wood

Geographical scope:

Global. Products under study are produced in Spain but can be used at a global scale.

LCA information

Functional unit / declared unit:

The declared unit is 1m³ of solid pinewood, cut, dried, thermotreated and machined for exterior and interior cladding.

The average density is 530 kg/m³ (± 50 Kg), and wood humidity of 4.5-7%.

The results of the Life Cycle Assessment provided in this declaration have been calculated from the product with the highest environmental impact, the worst-case scenario: Stained ThermoPine.

Reference service life:

The RSL is understood as the period of time until the ThermoPine is replaced, rebuild, renovated or restored. RSL is not relevant for this EPD since it is not used for any calculation.

Time representativeness:

First-hand data provided directly by Finsa on its production process was used in all cases where this information was available. The data provided by the company corresponds to production during 2022.

Database(s) and LCA software used:

The LCA modelling was carried out using an excel spreadsheet. All background LCI datasets were sourced from the Ecoinvent database v3.8. In certain cases, the original Ecoinvent datasets were adapted to the specific conditions of Finsa processes. The environmental information of background processes was generated by LCA software SimaPro 9.3 and were entered into the spreadsheet.

Description of system boundaries:

According to the standard EN 15804:2012+A2:2019 and PCR 2019:14 CONSTRUCTION PRODUCTS the system boundary is cradle to gate with modules C1–C4 and module D (A1–A3 + C + D). The life cycle stages A4-A5, B1-B7 were excluded from the LCA study.

The aggregation of the modules A1, A2 and A3 is allowed by EN 15804. This rule is applied in this EPD and denoted by A1-3.

This stage covers the extraction and processing of raw materials, such as forestry operations as well as additives production (A1) and the transportation to the sawmill (A2). This stage also covers the production of ThermoPine and co-products, and final disposal of generated residues (A3). Electricity production (A1); the production (A1) and use (A3) of fuels is also included.

The table below shows the scenarios considered at the end of life of the product. ThermoPine is used as wall cladding and has no structural use. The sheets are fixed to the wall by means of fasteners which, during dismantling, only require manual means to remove the product. For this reason, the contribution of module C1 is considered to be zero.

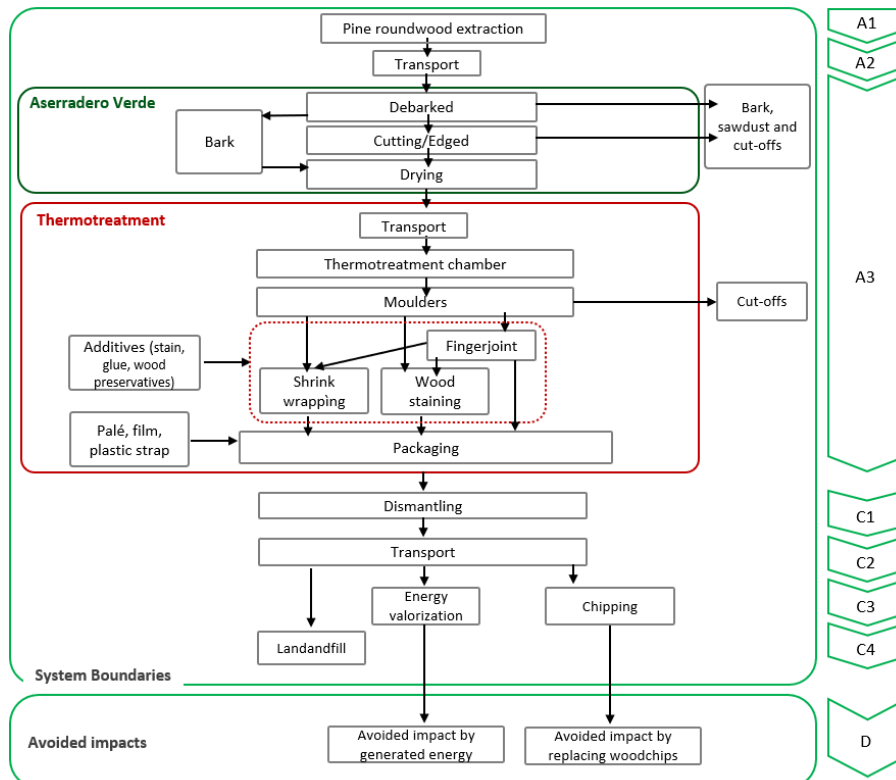
Module D has been calculated using the formulae stated in EN 15804:2012+A2: 2019 – Annex D. This module contains credits from the recycling and energy recovery of ThermoPine in module C3. For the recycling process is considered that product is recycled for substitution of primary wood chips (point of functional equivalence); and the energy generated in combustion of ThermoPine substitutes electricity production.

Parameters	Unit
Collection process	530 kg collected separately
	0 kg collected with mixed construction waste
	0% - 0 kg for reuse
Recovery system ⁽²⁾	32% - 171 kg for recycling
	38% - 198 kg for energy recovery
Landfill ⁽²⁾	30% - 161 kg of product for final disposal
Assumptions for the development of scenarios	
Transport by road	Transport, freight, lorry 16-32 t
Diesel consumption ⁽¹⁾	0.037 kg/tkm
Distance to CDW treatment, recycling, EoL	150 km
Recycling ⁽²⁾ (wood chipping electricity) ⁽¹⁾	0.02 kWh/kg
Substitution of electricity	Electricity, high voltage {ES} – 507kWh
Efficiency in energy recovery	60%

(1) Ecoinvent database

(2) European Commission (2016)

System diagram:



Allocation:

In addition to the ThermoPine production, several wooden flows are produced during debarking, cutting, and machining of wood. Some of these wooden flows are used as raw material for the generation of woodchips in the manufacture of particleboard, therefore, it has been considered as a co-product that leaves the facilities under study. An economic allocation has been applied to obtain the life cycle inventory of products and co-products.

Data quality:

In order to achieve precision, consistency and representativeness and to ensure reliable results, first-hand data from Finsa activities were used. The activity data provided by Finsa are less than 2 years old. All information comes from operational data and from calculations, so the quality of these data can be described as very good.

By other hand, regionally specific datasets were used to model the energy consumption. For the processes of transport, production of raw materials or end-of-life, datasets were chosen according to their technological and geographical representation of the actual process.

In accordance with Annex E of the EN 15804 + A2, a data quality assessment was performed. For technical representativeness, processes with a quality level of "very good" account for 94.0% of the value for climate change indicator. For geographical and time representativeness, processes with a quality level of "very good" account for 82.3% and 100% respectively.

Cut-off rules:

All the environmental aspects provided by Finsa's management have been included in the study, i.e., all raw materials and packaging as well as the energy for manufacturing. In the same way, all manufacturing waste and air emissions are accounted for.

Main assumptions:

The results from the life cycle analysis are based on the following assumptions:

- Wooden flows generated during the production process that cannot be reused for the production of other wooden products (particleboard), as bark and sawdust, are reused internally for heat production for wood drying.
- The biogenic carbon content of wood is the result of the CO₂ that has been absorbed from the atmosphere by the photosynthesis of the trees during their growth. The biogenic carbon in ThermoPine and packaging has been calculated according to EN 16485 and 16449. A carbon content of 50% of the dry mass of the wood was assumed for the wood species used (pinus radiata, pinus pinaster and/or pinus sylvestris). Biogenic carbon enters the product system in the forest (module A1) and, for calculation purposes, is assumed to leave the product system at the end-of-life stage (module C). This assumption can be made when wood originates from sustainably managed forests.

Greenhouse gas emission from the use of electricity in the manufacturing phase

The electricity mix used is based in the year 2022. Specific supplier electricity mix has been taken into consideration in the LCA model with a carbon footprint (GWP-GHG) of 0.378 Kg CO₂-eq/kWh for Finsa's sawmill (Aserradero Verde) and 0.379 Kg CO₂-eq/kWh for Thermotreatment electricity.

More information

Author of the Life Cycle Assessment:
 Ecómetro Mediciones SL. Ferraz 56
 28008 Madrid (Spain)

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	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	ES	ES	ES	-	-	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO
Specific data used	94,15%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	2,28%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Content information

The following table presents information regarding the content of Stained Thermopine.

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%	Biogenic material, weight-% and kg C/kg
Wood (pinus radiata, pinus pinaster and/or pinus sylvestris)	473	0	100%	100% - 0.5 kg C/kg
Water	57	0	0%	0
Lasur (wood stain)	4,18	0	0	0
TOTAL	534,18	0	88,5%	88,5% - 0.443 C/kg
Packaging materials	Weight, kg	Weight-% (versus the product)	Renewable material, weight-%	Weight biogenic carbon, kg C/kg
Pallet	14.4	2.72%	100%	0.5 kg C/kg
Plastic strap	0.136	0.026%	0%	0
TOTAL	14.54	2.74%	99.0%	0.495 kg C/kg

Products do not contain any of the substances listed on the "Candidate List of Substances of Very High Concern (SVHC) for authorization".

Results of the environmental performance indicators

The results of the Life Cycle Assessment provided in this declaration have been calculated from the product with the highest environmental impact (worst-case scenario): Stained ThermoPine.

Mandatory impact category indicators according to EN 15804 ⁽¹⁾

Results per functional or declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	2,93E+02	0,00E+00	1,30E+01	3,25E+00	1,31E+00	-1,69E+02
GWP-biogenic	kg CO ₂ eq.	-9,55E+02	0,00E+00	5,37E-03	6,80E+02	3,05E+02	0,00E+00
GWP-luluc	kg CO ₂ eq.	4,19E+00	0,00E+00	4,62E-03	3,81E-03	3,32E-04	-1,94E+00
GWP-total	kg CO ₂ eq.	-6,58E+02	0,00E+00	1,30E+01	6,84E+02	3,06E+02	-1,71E+02
ODP	kg CFC 11 eq.	1,82E-02	0,00E+00	2,95E-06	3,50E-07	4,95E-07	-1,95E-05
AP	mol H ⁺ eq.	1,18E+00	0,00E+00	3,73E-02	7,11E-02	1,17E-02	-1,45E+00
EP-freshwater	kg P eq.	5,14E-01	0,00E+00	1,04E-04	1,89E-04	2,05E-05	-1,01E-02
EP-marine	kg N eq.	2,51E-01	0,00E+00	7,38E-03	3,04E-02	8,92E-03	-2,20E-01
EP-terrestrial	mol N eq.	3,07E+00	0,00E+00	8,26E-02	3,49E-01	4,79E-02	-2,45E+00
POCP	kg NMVOC eq.	3,72E+00	0,00E+00	3,16E-02	9,13E-02	1,74E-02	-7,62E-01
ADP-minerals&metals*	kg Sb eq.	5,58E-01	0,00E+00	3,58E-04	1,65E-05	1,18E-05	-4,01E-04
ADP-fossil*	MJ	5,67E+03	0,00E+00	1,96E+02	4,83E+01	3,61E+01	-3,93E+03
WDP*	m ³	1,00E+03	0,00E+00	5,56E-01	9,83E-01	1,65E-01	-1,14E+02
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						

(1) The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

* 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	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	3,14E+02	0,00E+00	1,30E+01	3,39E+00	1,48E+01	-1,71E+02

Resource use indicators

Results per functional or declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	4,54E+04	0,00E+00	2,81E+00	5,86E+00	1,42E+00	-4,36E+03
PERM	MJ	8,15E+03	0,00E+00	0,00E+00	-5,70E+03	0,00E+00	0,00E+00
PERT	MJ	5,35E+04	0,00E+00	2,81E+00	-5,70E+03	1,42E+00	-4,36E+03
PENRE	MJ	6,95E+03	0,00E+00	2,08E+02	5,12E+01	3,83E+01	-4,07E+03
PENRM	MJ	1,34E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	6,95E+03	0,00E+00	2,08E+02	5,12E+01	3,83E+01	-4,07E+03
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	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	0,00E+00	0,00E+00	0,00E+00
FW	m ³	4,02E+02	0,00E+00	1,12E+01	2,22E+01	7,53E+00	-3,07E+03
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 CO₂ is set to zero.

Waste indicators

Results per functional or declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,21E-02	0,00E+00	5,14E-04	6,50E-05	4,41E-05	-2,02E-03
Non-hazardous waste disposed	kg	1,04E+02	0,00E+00	9,55E+00	1,48E+00	1,59E+02	-1,52E+01
Radioactive waste disposed	kg	4,74E-02	0,00E+00	1,34E-03	2,67E-04	2,36E-04	-3,03E-02

Output flow indicators

Results per functional or declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	2,57E+03	0,00E+00	0,00E+00	1,70E+02	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	2,01E+02	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Information related to Sector EPD

This is a specific EPD

Differences versus previous versions

This is the first version of the EPD

References

- General Programme Instructions of the International EPD[®] System. Version 4.0. 2021-03-28,
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