

# Environmental Product Declaration



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

## Resilient acoustic Underscreed U85 [4/2]

from

**Amorim Cork Composites, S.A.**

AMORIM  
CORK  
COMPOSITES

Programme:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0005103 (S-P-05103)
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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](http://www.environdec.com)*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

<b>Accountabilities for PCR, LCA and independent, third-party verification</b>
<b>Product Category Rules (PCR)</b>
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): <i>PCR 2019:14 Construction Products, Version 1.3.4 and C-PCR-014 (to PCR 2019:14) Acoustical Ceiling and Wall Solutions (2024-04-30)</i>
PCR review was conducted by: <i>The Technical Committee of the International EPD® System.</i>
<b>Life Cycle Assessment (LCA)</b>
LCA accountability: <i>Maria Inês Vitória dos Santos, Itecons – Institute for Research and Technological Development in Construction, Energy, Environment and Sustainability</i>
<b>Third-party verification</b>
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: Elisabet Amat, GREENIZE
Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier:
<input type="checkbox"/> Yes <input checked="" 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.

## Company information

Owner of the EPD:

Amorim Cork Composites, S.A.

Contact:

Joana Trindade

[info.as@amorim.com](mailto:info.as@amorim.com)

Description of the organisation:

Amorim Cork Composites (ACC) is Corticeira Amorim's most technologically advanced area. Internationally renowned for its R&D credentials, the company's pioneering spirit – coupled with cork's unique properties – has made it possible to deliver a remarkable range of high-performance, state-of-the-art products; a veritable new universe in cork, which doesn't just meet current demands but also anticipates tomorrow's trends and markets.

Product-related or management system-related certifications:

ACC has a management system that integrates the different normative references:

- Quality according to the NP EN ISO 9001 standard;
- Environment according to the NP EN ISO 14001 standard;
- Security according to the ISO 450001 standard;
- Energy according to the NP EN ISO 50001 standard
- Forest sustainability (chain of custody) according to Standard FSC-STD-40-004;
- Forest sustainability (chain of custody) According to Norm PEFC ST 2002;
- Systcode according to CIPR (International Code of Cork Stopper Practices).

Name and location of production site(s):

Amorim Cork Composites, S.A.  
Rua Comendador Américo Ferreira Amorim, 260  
4535-186 Mozelos  
Santa Maria da Feira  
Portugal  
<https://amorimcorkcomposites.com/pt/>

## Product information

Product name:

Resilient Acoustic Underscreed U85 [4/2]

Product identification:

Resilient acoustic underscreeds

Product description:

Underscreed U85 is a product composed of agglomerated natural cork (medium density) blended with recycled polyurethane (PU) foam (pre-consumer waste) and recycled rubber (post-consumer waste). This product is a resilient sublayer applied on the floor, between the structural slab and the screed, during the construction process. The application of an underscreed intend to improve the acoustic

insulation of a building by reducing the spreading of percussion or impact noise. This system also influences the reduction of aerial noise (airborne sound) and the thermal performance of the construction, as it helps to restrict heat losses.

	Underscreed U85 [4/2]	Observations
Dimensions (m x m)	1 x 30	
Thickness (mm)	4/2	
Weight (kg/m <sup>2</sup> )	1,50	
Weight- packed (kg/m <sup>2</sup> )	1,59	
Impact noise reduction   $\Delta L_w$ (dB)	23	as per ISO 10140-3 and ISO 717-2
Impact insulation class   IIC (dB)	52	as per ASTM E492-09, ASTM E989-06
Specific Weight (kg/m <sup>3</sup> )	280-400	as per ASTM F1315
Tensile Strength (KPa)	>150	as per ASTM F152
Recovery after 0.7MPa (%)	>75	as per ASTM F36
Thermal Conductivity (W/mK)	0,0692	as per EN 12664:2001 and ISO 8302:1991

UN CPC code:

54650 Insulation services

Geographical scope:

The LCA study was carried out according to the Europe scope.

Product Market: Global

**LCA information**

Functional unit / declared unit:

1 m<sup>2</sup> of resilient acoustic underscreed installed during 50 years with unclassified sound absorption (packaging included).

Reference service life:

The service life of the building (50 years) was considered, since once installed the product is protected by other elements and does not require maintenance.

Time representativeness:

2023

Database(s) and LCA software used:

- Ecoinvent v3.9.1 and EF database v2.0
- SimaPro v9.5

Data Quality:

Specific data was used based on the average production of Underscreed U85 [4/2] in 2023. For processes which the producer has no influence or specific information, such as the extraction of raw materials, production of customised products and electricity production, generic data was used from Ecoinvent database v3.9.1 and EF database 2.0, considering geographical significance.

Cut-off rules:

Criteria for the exclusion of inputs and outputs follow the requirements of EN 15804: 2012+A2 2019. Where there was insufficient data for a unit process in the LCA study, the cut-off criteria were set at 1% of renewable and non-renewable primary energy usage and 1% of the total mass input of that process, with a maximum of 5% of energy usage and mass per module, ensuring that at least 95% of the environmental impact per module is considered. Based on this cut-off criteria, a packaging material was excluded from the analysis.

Allocation:

During the production of Underscreed U85, no co-products are produced. PU foam (product component) is a pre-consumer waste from other industries, with no economic value for three suppliers and with economic value for one. For suppliers with no economic value, it was considered that PU foam pre-consumer waste inputs enter into the product system without benefits or impacts. For supplier with economic value, economic allocation was used to allocate impacts to the PU foam pre-consumer waste (in accordance with EN 15804:2012+A2:2019 and PCR 2019:14). Furthermore, all products sent to recycling are treated under the “polluter pays” principle.

Electricity Sources:

Electricity used in module A3 was modelled using the Portuguese energy grid residual mix from Ecoinvent v3.9.1.

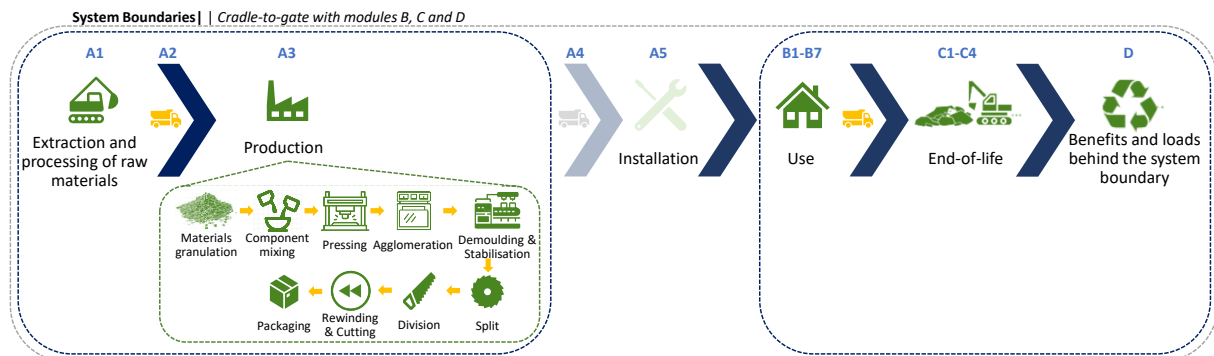
Type of information	Description
Electricity mix	Hard coal: 2%; Hydro: 16%; Natural gas: 25%; Oil: 3%; Wind: 17%; Biomass: 4%; PV: 4%; European attribute mix: 29%
GWP-GHG (kg CO <sub>2</sub> eq/kWh)	0,343

Description of system boundaries:

Cradle to gate with options, modules C1-C4, module D and with optional modules B1–B7 (A1-A3+B+C+D).

This system boundary was defined according to the interpretation of points 4.2.1, 4.2.2 and 4.2.4 of the c-PCR. Through which there is an opening for the definition of other borders of the system.

This EPD covers the information module A1-A3, B1-B7, C1-C4 and D, comprising of the following modules (Figure 3): [A1] raw material extraction and processing, processing of secondary material input; [A2] transport to the manufacturer; [A3] manufacturing; [B1] use; [B2] maintenance, [B3] repair; [B4] replacement; [B5] refurbishment; [B6] operational energy use; [B7] operational water use; [C1] deconstruction, demolition; [C2] transport to waste processing; [C3] waste processing for reuse, recovery and/or recycling; [C4] disposal; and [D] benefits and loads beyond the system boundary.



### Product stage [A1-A3]:

Modules A1-A3 cover the extraction, production and acquisition of the main raw materials and pre-products, as well as electricity and fuel generation, transport of all raw materials considered in module A1 to the factory gate, and production of the final products, including waste management and emissions.

### Construction process stage [A4-A5]:

This EPD does not cover the construction process stage. In accordance with the interpretation of points 4.2.1, 4.2.2 and 4.2.4 of the c-PCR.

### Use stage [B1-B7]:

The Underscreed U85 have no impact at this stage, because this product is a resilient sublayer applied on the floor, between the structural slab and the screed, during the construction process. Once installation of underscreed is completed, no actions or maintenance are required during the use stage until the end-of-life stage.

### End of life stage [C1-C4]:

#### Module C1:

The demolition of Underscreed is associated with the demolition of the building, so the contribution of the demolition of this type of product generates very low impacts, thus they can be neglected and set to 0 in the results.

#### Module C2:

For the transport of the Underscreed U85 [4/2] at the end-of-life, a distance of 30 km to the waste operators was considered.

#### Module C3:

No waste is sent to reuse, recycling or energy recovery.

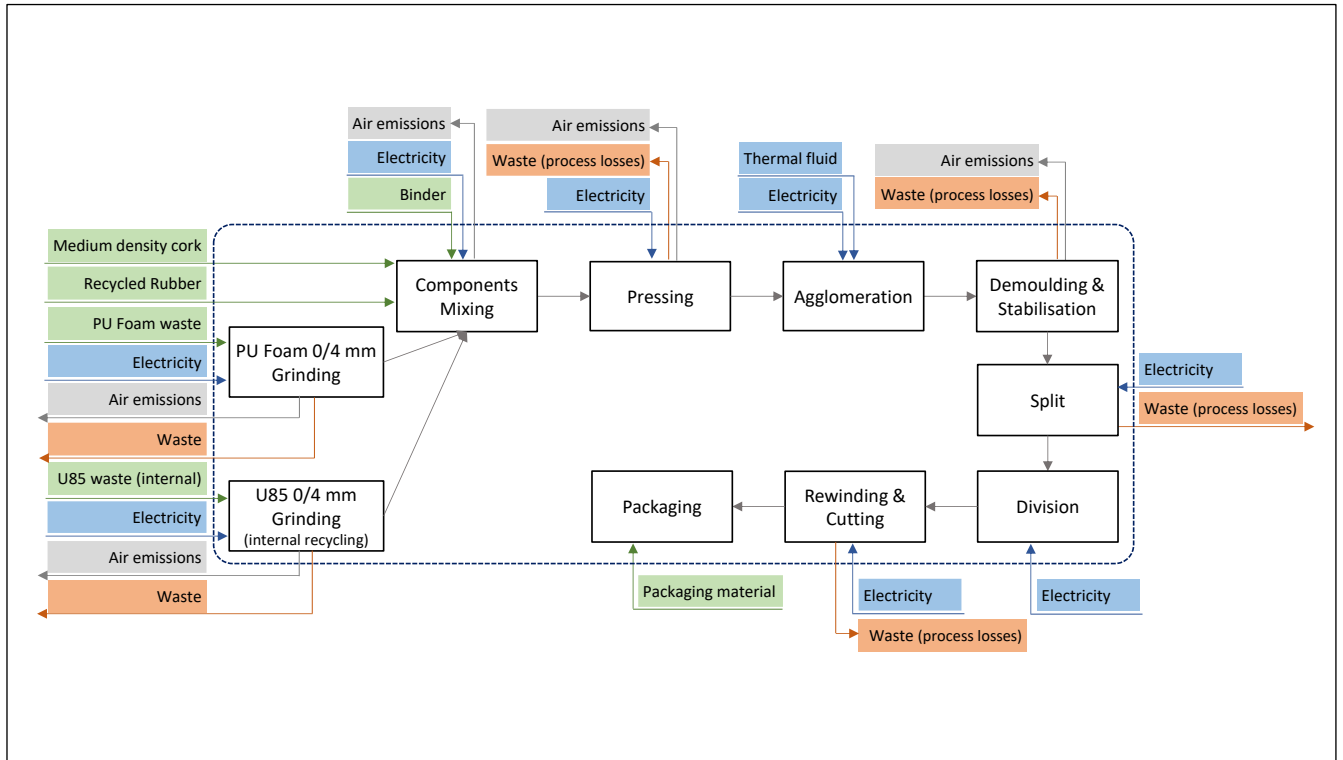
#### Module C4:

A scenario of landfill disposal (100 %) was considered, based on EUROSTAT 39/2019 report.

### Resource recovery stage [D]:

At present, there are no processes for re-use or recovery. Therefore, the potential benefits beyond the system boundaries (D) are zero.

System diagram:



The Underscreed U85 production comprises 11 stages: Medium density Cork Grinding (outside ACC facilities), PU Foam 0/4 mm Grinding, U85 0/4 mm Grinding (internal recycling), Components Mixing, Pressing, Agglomeration, Demoulding & Stabilisation, Split, Division, Rewinding & Cutting and Packaging.

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	x	x	x	X	x	x	x	x	x	x	x	x	x
Geography	EU	EU	PT	-	-	EU							EU				EU	
Specific data used	27%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

x: included / ND: not declared / PT: Portugal / EU: European.



## Content information

### Underscreed U85 [4/2]\*

Product components	Weight, kg/m <sup>2</sup>	Post-consumer material, weight-%	Biogenic material, weight (C)	
			%	kg C/m <sup>2</sup>
Cork	1,05E-01	0,00	100,00	4,97E-02
Rubber granulates	5,27E-01	100,00	0,00	0,00E+00
PU foam	6,86E-01	0,00	0,00	0,00E+00
Binder	1,81E-01	0,00	0,00	0,00E+00
TOTAL	1,50E+00	35,16	7,02	4,97E-02
Packaging materials	Weight, kg/m <sup>2</sup>	Weight-% (versus the product)	Weight biogenic carbon, kg C/m <sup>2</sup>	
Plastic film	1,78E-03	0,12	0,00E+00	
Cardboard	3,74E-02	2,49	1,61E-02	
Wooden pallet	5,55E-02	3,70	2,61E-02	
TOTAL	9,46E-02	6,31	4,21E-02	

\*The product does not contain any substance included in the Candidate List of Substances of Very High Concern (SVHCs) for authorization with concentrations higher than 0.1% weight by weight (w/w).

## Results of the environmental performance indicators

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. The use of the results of modules A1-A3 without considering the results of module C is discouraged. A1-A3 results include the “balancing-out reporting” of biogenic CO<sub>2</sub> of packaging released in module A5.

### Mandatory impact category indicators according to EN 15804 (based on EF 3.1)

	Results per declared unit (1 m <sup>2</sup> )							
Indicator	Unit	A1-A3	B1-B7	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	1,25E+00	0,00E+00	0,00E+00	2,03E-02	0,00E+00	9,79E-02	0,00E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	-7,15E-02	0,00E+00	0,00E+00	6,07E-06	0,00E+00	1,49E-01	0,00E+00
GWP-luluc	kg CO <sub>2</sub> eq.	7,36E-03	0,00E+00	0,00E+00	3,94E-07	0,00E+00	7,92E-06	0,00E+00
GWP-total	kg CO <sub>2</sub> eq.	1,19E+00	0,00E+00	0,00E+00	2,03E-02	0,00E+00	2,47E-01	0,00E+00
ODP	kg CFC 11 eq.	4,40E-08	0,00E+00	0,00E+00	4,34E-10	0,00E+00	9,61E-11	0,00E+00
AP	mol H <sup>+</sup> eq.	5,98E-03	0,00E+00	0,00E+00	2,45E-05	0,00E+00	7,25E-05	0,00E+00
EP-freshwater	kg P eq.	2,28E-04	0,00E+00	0,00E+00	1,37E-07	0,00E+00	1,83E-06	0,00E+00
EP-marine	kg N eq.	1,78E-03	0,00E+00	0,00E+00	5,79E-06	0,00E+00	1,03E-02	0,00E+00
EP-terrestrial	mol N eq.	1,38E-02	0,00E+00	0,00E+00	5,63E-05	0,00E+00	3,04E-04	0,00E+00
POCP	kg NMVOC eq.	2,09E-02	0,00E+00	0,00E+00	4,59E-05	0,00E+00	1,11E-04	0,00E+00
ADP-minerals&metals*	kg Sb eq.	3,46E-06	0,00E+00	0,00E+00	6,91E-10	0,00E+00	3,03E-10	0,00E+00
ADP-fossil*	MJ	2,08E+01	0,00E+00	0,00E+00	2,67E-01	0,00E+00	1,12E-01	0,00E+00
WDP*	m <sup>3</sup>	9,37E-01	0,00E+00	0,00E+00	2,45E-04	0,00E+00	6,90E-04	0,00E+00
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							

\* 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 declared unit (1 m <sup>2</sup> )								
Indicator	Unit	A1-A3	B1-B7	C1	C2	C3	C4	D
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	1,26E+00	0,00E+00	0,00E+00	2,03E-02	0,00E+00	9,80E-02	0,00E+00
<i>Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017</i>								

## Resource use indicators

Results per declared unit (1 m <sup>2</sup> )								
Indicator	Unit	A1-A3	B1-B7	C1	C2	C3	C4	D
PERE	MJ	1,85E+01	0,00E+00	0,00E+00	7,03E-04	0,00E+00	6,38E-03	0,00E+00
PERM	MJ	2,75E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,12E+01	0,00E+00	0,00E+00	7,03E-04	0,00E+00	6,38E-03	0,00E+00
PENRE	MJ	7,51E+00	0,00E+00	0,00E+00	2,67E-01	0,00E+00	1,12E-01	0,00E+00
PENRM	MJ	1,33E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	2,08E+01	0,00E+00	0,00E+00	2,67E-01	0,00E+00	1,12E-01	0,00E+00
SM	kg	1,08E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	1,15E+00	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	0,00E+00
FW	m <sup>3</sup>	2,33E-02	0,00E+00	0,00E+00	1,12E-05	0,00E+00	2,86E-05	0,00E+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							

<sup>1</sup> 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<sub>2</sub> is set to zero.

## Waste indicators

		Results per declared unit (1 m <sup>2</sup> )						
Indicator	Unit	A1-A3	B1-B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	4,07E-05	0,00E+00	0,00E+00	1,76E-06	0,00E+00	4,85E-07	0,00E+00
Non-hazardous waste disposed	kg	5,02E-01	0,00E+00	0,00E+00	1,32E-05	0,00E+00	1,08E+00	0,00E+00
Radioactive waste disposed	kg	1,96E-05	0,00E+00	0,00E+00	2,29E-08	0,00E+00	1,33E-07	0,00E+00

## Output flow indicators

		Results per declared unit (1 m <sup>2</sup> )						
Indicator	Unit	A1-A3	B1-B7	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	0,00E+00
Material for recycling	kg	4,14E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery	kg	6,02E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	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	0,00E+00

## Additional environmental information

ACC favors innovation projects that enhance the added value of its products, the safety of people and goods, as well as efficiency in all its aspects.

Within the scope of its sustainability strategy, ACC assumes the following environmental management commitments, as well as compliance with legal compliance obligations or others: “We assess the environmental aspects of our activities, with the aim of protecting the Environment, adopting practices that potentiate the prevention of pollution, as well as the improvement of our environmental performance.”

The sustainability of the business involves the integration in the strategic planning of the different aspects of management, which is why the approach to Quality, Environment, Safety, Energy, Forestry Chain of Custody and System code Management is carried out in an integrated manner in the ACC management system.

ACC has a management system that integrates the different normative references:

- Quality according to the NP EN ISO 9001 standard;
- Environment according to the NP EN ISO 14001 standard;
- Security according to the ISO 450001 standard;
- Energy according to the NP EN ISO 50001 standard
- Forest sustainability (chain of custody) according to Standard FSC-STD-40-004;
- Forest sustainability (chain of custody) According to Norm PEFC ST 2002;
- Systecode according to CIPR (International Code of Cork Stopper Practices).

The management system, its planning, revision and improvement, is carried out in accordance with the methodology of the PR 101 process - Strategic Management.

## References

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