ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A1*

Owner of the Declaration	Amorim Cork Flooring
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-AMO-20210078-ICA1-EN
ECO EPD Ref. No.	
Issue date	08/11/2022
Valid to	07/11/2027

Cork Flooring Floating Eco Decor
Amorim Cork Flooring

Institut Bauen und Umwelt e.V.

www.ibu-epd.com | https://epd-online.com

ECO PLATFORM EPD VERIFIED

1. General Information

Amorim Cork Flooring	Cork Flooring Floating Eco Decor
Programme holder IBU – Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany	**Owner of the declaration** Rua do Ribeirinho, 202 4536-907 S. Paio de Oleiros
Declaration number EPD-AMO-20210078-ICA1-EN	**Declared product / declared unit** 1 m^2 of Cork Flooring Floating EcoDecor
This declaration is based on the product category rules: Floor coverings, 02.2018 (PCR checked and approved by the SVR)	**Scope:** The data on which the Life Cycle Assessment is based is from the production process of Cork Flooring Floating Eco Decor taking place in one industrial unit of Amorim Cork Flooring (Oleiros). The data used is from one industrial unit and is referred to the year of 2019.
Issue date 08/11/2022	The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences. The EPD was created according to the specifications of *EN 15804+A1*. In the following, the standard will be simplified as *EN 15804*.
Valid to 07/11/2027	**Verification** The standard *EN 15804* serves as the core PCR Independent verification of the declaration and data according to *ISO 14025:2010* ☐ internally ☒ externally
Dipl. Ing. Hans Peters (chairman of Institut Bauen und Umwelt e.V.)	
Dr. Alexander Röder (Managing Director Institut Bauen und Umwelt e.V.))	Matthias Klingler (Independent verifier)

2. Product

2.1 Information about the enterprise

Created in 1978, Amorim Cork Flooring, Amorim's Business Unit for Floor & Wall Coverings, operates in more than 80 countries. It combines inspiration based on the purest values of nature with advanced technologies to produce a range of high-quality and versatile floor and wall covering solutions that offer undeniable comfort and high sustainability credentials.

2.2 Product description/Product definition

PVC-free surfaces are available in an extensive collection of wood visuals. Designed to withstand the needs of our daily lives and commercial areas due to its wear resistance and indoor air quality credentials.

The extra thick cork top layer gives the product outstanding comfort while reducing the walking sound.

For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) *Regulation (EU) No. 305/2011 CPR* applies. The product needs a Declaration of Performance taking into consideration *EN 14041*: 2004/AC:2006 Resilient, textile and laminate floor coverings - Essential characteristics and the CE-marking. For the application and use the respective national provisions apply.

2.3 Application

① PVC-FREE PROTECTIVE WEAR LAYER

② AGGLOMERATED CORK 1,3MM

③ HDF - HIGH DENSITY FIBERBOARD WITH CORKLOC

④ INTEGRATED CORK UNDERLAY 2,2MM

Cork Flooring Floating Eco Decor has a surface layer and has been specially developed for heavy traffic residential and commercial areas. This flooring product meets the requirements of the usage classes 33 for commercial use and 23 for domestic use according to *ISO 10874*.

2.4 Technical Data

Relevant technical construction data for the product is referred in the following table.

Constructional data

Name	Value	Unit
Dimension (LxWxT)	1220x185x 10,5	mm
Mass per unit	8,37	Kgs / m2
Packaging (box / pallet)	1,806 / 72,24	m2
Thickness ISO 24337	Δtavg ≤ 0,50, relative to nominal value / tmax - tmin ≤ 0,50	mm
Length ISO 24337	≤ 1 500: Δl ≤ 0,5 / > 1 500: Δl ≤ 0,3	mm
Width ISO 24337	Δ wavg ≤ 0,10, relative to nominal value wmax - wmin ≤ 0,20	mm
Squareness ISO 24337	max ≤ 0,20	mm
Straightness ISO 24337	max ≤ 0,30	mm/m
Openings ISO 24337	max ≤ 0,20	mm
Height difference ISO 24337	hmax ≤ 0,15	mm
Flatness of the panel (Length - concave / convex) ISO 24337	concave ≤ 0,50 / convex ≤ 1,0	%
Flatness of the panel (Width - concave / convex) ISO 24337	concave ≤ 0,15 / convex ≤ 0,20	%
Wear resistance IP EN 15468, procedure B	≥ 5 000	cycles
Impact resistance [mm] (big ball) EN 13329:2006+A1:2008, Annex F	≥ 1 600	mm
Castor chair resistance EN 425	25 000	cycles
Resistance to staining EN 438–2	Groups 1 and 2: grade 5 / Group 3: grade 4	
Residual indentation EN ISO 24343-1	≤ 0,2	mm
Swelling ISO 24336	≤ 18	%
Fire resistance EN ISO 11925-2 + EN ISO 9239-1 : Class EN 13501-1	Bfl-s1	Class
Slip Classification EN 13893	DS	Class
Formaldehyde emission EN 717-1	E1	Class
Content pentachlorophenol (PCP) EN 12673	Undetectable	% mg/kg
Impact sound reduction EN ISO 10140	17	dB (Δ Lw)

The Performance data of the product is in accordance with the Declaration of Performance with respect to its Essential Characteristics according to /EN 14041:2004/AC:2006 Resilient, textile and laminate floor coverings - Essential characteristics/.

2.5 Delivery status

The dimensions of rectangular panels of Cork Flooring Floating Eco Decor are declared in the following table.

Dimensions of panels (ISO 24337)	Value	Unit
Dimension (LxWxT)	1220x185x10,5	mm

The layers composing Cork Flooring Floating Eco Decor are shown in the following table.

Products	Component	Thickness (mm)	Total thickness (mm)
Cork Flooring Floating EcoDecor	PVC-FREE PROTECTIVE WEAR LAYER	Max. 0,4	10,5
	AGGLOMERATED CORK	Max. 1,3	
	HDF - HIGH DENSITY FIBERBOARD WITH CORKLOC	Max. 7,0	
	INTEGRATED CORK UNDERLAY	Max. 2,2	

2.6 Base materials/Ancillary materials

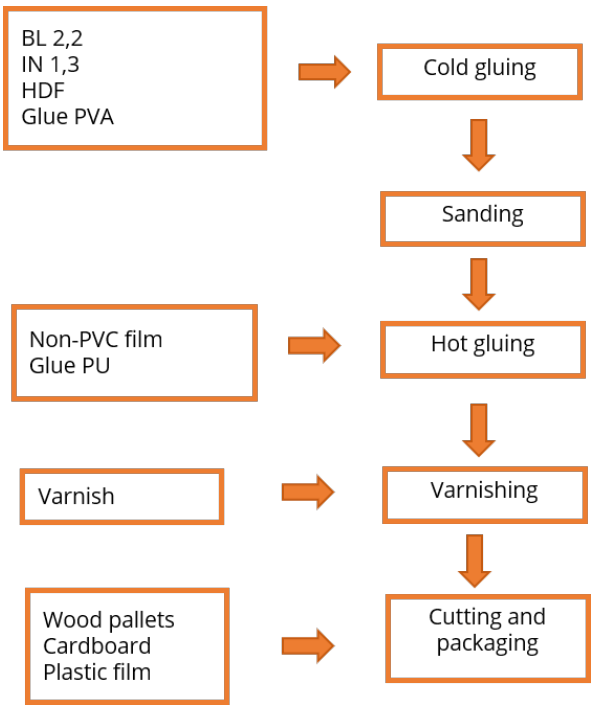
The primary product components and materials of the product are indicated as a percentage mass in the following table.

Product	Component		Percentage (in weight) (%)
Cork Flooring Floating EcoDecor	INTEGRATED CORK UNDERLAY (BL 2,2)	Cork	5,8%
		Resin PU	0,5%
	AGGLOMERATED CORK (IN 1,3)	Cork	6,8%
		Resin MUF	4,2%
	HDF		73,4%
	Adhesive PVA		1,8%
	Adhesive PU		0,7%
	PVC-FREE PROTECTIVE WEAR LAYER		5,5%
	UV primer		0,1%
	UV sealer		1,2%
	UV Top coat		0,1%

1) This product contains substances listed in the candidate list (date: 24.10.2022) exceeding 0.1 percentage by mass: no.
2) This product contains other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B, which are not on the candidate list, exceeding 0.1 percentage by mass: no.
3) Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Ordinance on Biocide Products No. 528/2012): no

2.7 Manufacture

General flow production of Cork Flooring Floating Eco Decor is represented in the following graphic.



2.8 Environment and health during manufacturing

During the production process, the environmental and health aspects are considered.
Air: The emission of particles and pollutants are collected in filter systems and the levels are below the permissible limits.
Water: The product requires a low water consumption that is totally treated in an Industrial Waste Water Treatment Plant (IWWTP).
Noise: Noise resulting from operation during the production process is below the permissible limits.

2.9 Product processing/Installation

In order to install the product, the following equippment is needed:
a padsaw or a fine-toothed handsaw; spacer blocks; pencil; set square; 0.2 mm PE film and adhesive tape.
More information on installing the flooring product can be found on the manufacturer's website.

2.10 Packaging

Resilient floor coverings are delivered in packages designed to protect the corners, edges and surfaces of the product, under normal conditions of transport and handling (compliant with *EN 13329*).
Product planks are laid in cardboard boxes, wrapped in packaging film and placed on wooden pallets, secured by plastic straps.
These packaging materials can be collected separately and recycled.
Pallets can either be re-used (Euro pallets) or recycled as wood.

2.11 Condition of use

No changes in material composition are detected over the service life of the product.
Cork Flooring Floating Eco Decor products contain a significant amount of natural renewable raw materials, meaning that they have stored about 13,78 kg CO2/m² of product resulting from photosynthesis.

2.12 Environment and health during use

The following table indicates the information about safety properties.

Safety properties - EN 14041	Standard Unit Value	Standard Unit Value	Standard Unit Value
Fire resistance	EN ISO 11925-2 + EN ISO 9239-1 : Class EN 13501-1	Class	Bfl-s1
Slip Classification	EN 13893	Class	DS
Formaldehyde emission	EN 717-1	Class	E1
Content pentachlorophenol (PCP)	EN 12673	% mg/kg	Undetectable

2.13 Reference service life

The expected service life of the product was determined based on empirical experience of the manufacturer, considering the different use classes, according to *ISO 10874*. The following table indicates the expected service life for domestic and commercial uses.

Application area	Class	Expected service life
Domestic	23	25
Commercial	33	15

2.14 Extraordinary effects

Fire

Fire performance according to *EN ISO 11925-2 + EN ISO 9239-1: Class EN 13501-1* (building products) of Cork Flooring Floating Eco Decor is Bfl-s1.

Water
There are no environmental impacts on water identified in the use stage of the product since the product is mainly composed of natural materials that are not hazardous to water masses.

Mechanical destruction
There is no potential harm to health and environment known resulting from mechanical destruction of the product.

2.15 Re-use phase
The product is mainly composed of cork and high density fiberboard (HDF). Wood and cork can also be suitable for composting.
Waste from this flooring product can be reused in the process as a replacement (for?)of some of the raw materials.
This type of flooring product can also be reused, although its service life is expected to be less than the original warranty from the manufacturer. Regarding energy recovery, wood and cork can be incinerated in order to produce thermal energy or electricity.

2.16 Disposal
According to the *European Waste Catalogue Directive* the used floor covering can be classified in the main category "17 Construction and Demolition Waste (including road construction)".
Considering the specific constitution of this floor covering, and assuming that the layers cannot be separated at the end of life, the waste code applied is the following:
17 09 04 Mixed construction and demolition waste other than those mentioned in 17 09 01, 17 09 02 and 17 09 03.
These types of waste materials can be reused/recycled according to the *European Waste Framework Directive*.

2.17 Further information
Further information can be found on the website of the different brands of the manufacturer Amorim Cork Flooring:
http://www.wicanders.com/

3. LCA: Calculation rules

3.1 Declared Unit
The declared unit is 1 m^2 of floor covering with the following characteristics:

Declared unit

Name	Value	Unit
Declared unit	1	m^2
Grammage	8.74	kg/m^2
Layer thickness	0.0105	m

3.2 System boundary
Type of the EPD: cradle to grave.
A1-A3: production process of Cork Flooring Floating Eco Decor.
A4-A5: transport and impacts of installation, including auxiliary materials and waste produced.
B1-B5: Only maintenance (cleaning) operations are applied.
B6-B7: Not applicable to this product.
C1-C4: Dismantling, transport to waste processing units and final recycling and incineration are considered.
D: Benefits and loads beyond the product system boundary are considered.

3.3 Estimates and assumptions
Information on components and average weight percentage of adhesives was obtained from their technical data sheets.
Existing inventory data were not available for the particular Resin PU, Resin MUF, adhesive PVA and UV varnishes used in the product, so these were modelled based on alternative materials as a proxy. The impact of using the HDF is withdrawn from the EPD of the product.

3.4 Cut-off criteria
All available data associated directly to the manufacture of the product was included in the LCA, with the exception of infrastructure and buildings.
Hence, the study complies with the cut-off criteria of 1 % of renewable and non-renewable primary energy usage and 1 % of the total mass of that unit process.

3.5 Background data
Specific data was used based on the average production of 2019. For processes on which the producer has no influence or specific information, like the extraction of raw materials, generic data from the *Ecoinvent* 3.6 database has been considered.

3.6 Data quality
Specific data refers to the production of 2019. Data sets of processes from *Ecoinvent* database are less than 8 years old. Data sets are based on literature and average data from specific industrial units. Regarding geography coverage, whenever possible average European data and a Portugal-specific energy mix were used. In cases where no average European data was available, the most approximate data set was used.
Considering these aspects, the data used in this study is of high quality.

3.7 Period under review
The specific data collected from the manufacturer refers to the year of 2019.

3.8 Allocation
Energy, water, wastewater and air emissions allocated to this product were determined by the manufacturer, considering the different processes involved in the production of the product.

3.9 Comparability
Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

The data sets used are from *Ecoinvent 3.6* database..

4. LCA: Scenarios and additional technical information

Transport to the construction site (A4)

Name	Value	Unit
Transport distance	2760	km
Capacity utilisation (including empty runs)	20	%

Installation in the building (A5)

Name	Value	Unit
Auxiliary PE film + tape	0.192	kg
Material loss	0.3933	kg
Output substances following waste treatment on site packaging + material loss	1.03	kg

Maintenance (B2)

Name	Value	Unit
Information on maintenance Vaccum + wet cleaning	-	-
Maintenance cycle Vaccum	1040	Number/RSL
Maintenance cycle Wet cleaning	520	Number/RSL
Water consumption	0.052	m^3
Auxiliary Detergent	0.13	L
Electricity consumption Vaccum cleaning	2427	kWh

Reference service life

Name	Value	Unit
Reference service life average	20	a
Life Span according to the manufacturer	20	a

End of Life (C1-C4)

Name	Value	Unit
Collected as mixed construction waste	8.93	kg
Recycling	0.192	kg
Energy recovery	8.74	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

According to default assumptions, postconsumer product is used as a secondary fuel for energy recovery in a biomass combustion plant.

Name	Value	Unit
Incineration of Cork Flooring Floating Eco Decor with heat recovery (100%)	8.74	kg
Avoided use of electricity due to incineration of Cork Flooring Floating Eco Decor, including extra material losses	-1.09E+01	KWh
Avoided use of electricity due to incineration of packaging (wood and paper)	-2.77E-01	KWh
Avoided use of plastic material (from PE moisture barrier film)	-1.92E-01	kg
Avoided use of plastic material (from packaging, PEBD and PP)	-5.72E-03	kg

5. LCA: Results

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED; MNR = MODULE NOT RELEVANT)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	X	MNR	MNR	MNR	MND	MND	MND	X	X	MND	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A1: 1 m2 Cork Flooring Floating EcoDecor

Parameter	Unit	A1-A3	A4	A5	B2	C2	C3	D
GWP	[kg CO_2-Eq.]	-1.30E+1	4.25E-1	2.22E+0	1.24E+0	1.20E-1	1.39E+1	-8.54E-1
ODP	[kg CFC11-Eq.]	9.53E-7	7.56E-8	2.86E-7	6.43E-8	2.21E-8	8.98E-9	-6.87E-8
AP	[kg SO_2-Eq.]	5.04E-2	4.15E-3	1.14E-2	7.71E-3	1.99E-4	3.35E-4	-1.39E-2
EP	[kg $(PO_4)^{3-}$-Eq.]	7.84E-3	4.14E-4	1.60E-3	2.07E-3	2.35E-5	4.43E-5	-4.49E-3
POCP	[kg ethene-Eq.]	3.04E-3	1.21E-4	6.58E-4	4.08E-4	1.01E-5	1.32E-5	-9.42E-4
ADPE	[kg Sb-Eq.]	2.57E-5	2.21E-8	4.15E-6	4.96E-6	7.12E-9	8.87E-8	-9.68E-7
ADPF	[MJ]	2.03E+2	5.84E+0	3.70E+1	1.20E+1	1.71E+0	8.68E-1	-1.82E+1

Caption	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A1: 1 m2 Cork Flooring Floating EcoDecor

Parameter	Unit	A1-A3	A4	A5	B2	C2	C3	D
PERE	[MJ]	1.53E+2	7.92E-3	5.23E+1	9.12E+0	2.35E-3	2.51E-1	-1.73E+2
PERM	[MJ]	1.23E+2	0.00E+0	9.69E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	[MJ]	3.18E+4	7.92E-3	5.33E+1	9.12E+0	2.35E-3	2.51E-1	-1.73E+2
PENRE	[MJ]	6.65E+1	5.78E+0	3.21E+1	1.34E+1	1.69E+0	1.58E+0	-1.89E+1
PENRM	[MJ]	1.42E+2	0.00E+0	8.06E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PENRT	[MJ]	2.09E+2	5.78E+0	4.01E+1	1.34E+1	1.69E+0	1.58E+0	-1.89E+1
SM	[kg]	2.07E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
RSF	[MJ]	1.01E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	[m^3]	1.94E-1	1.07E-4	4.06E-2	3.23E-2	3.38E-5	1.24E-3	-2.06E-3

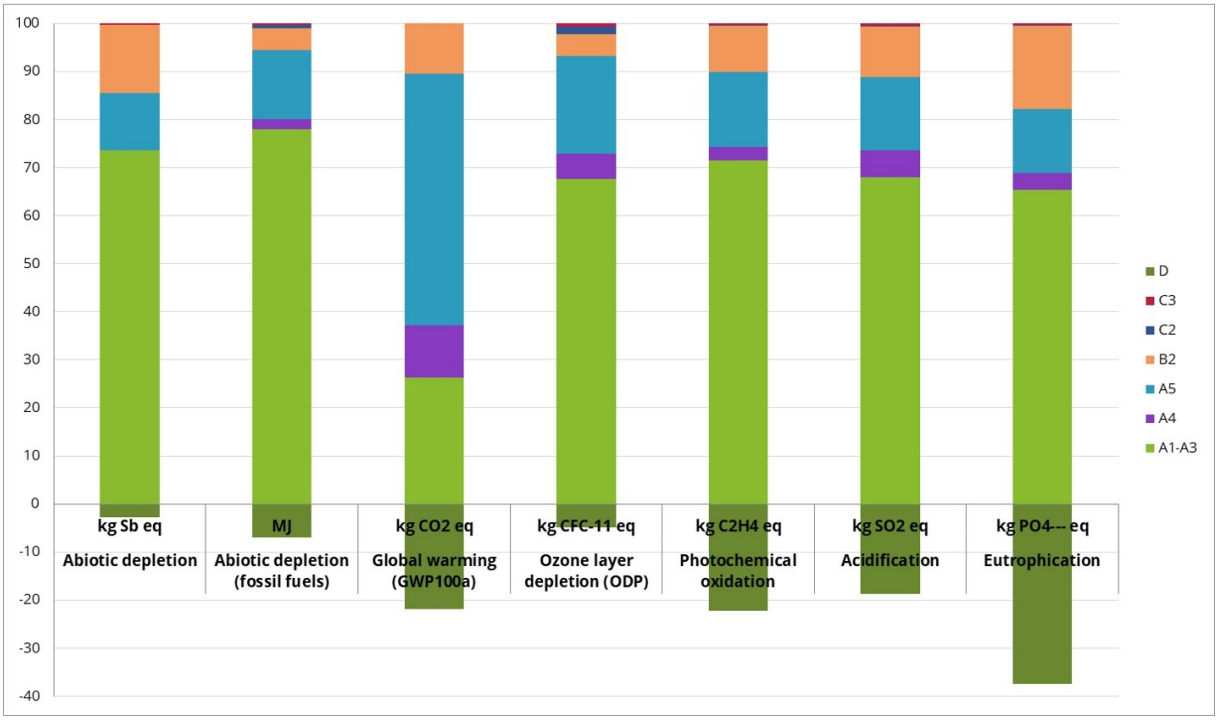
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable 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 resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A1: 1 m2 Cork Flooring Floating EcoDecor

Parameter	Unit	A1-A3	A4	A5	B2	C2	C3	D
HWD	[kg]	1.08E+0	1.16E-5	3.27E-4	1.35E-5	4.52E-6	6.12E-7	-1.82E-5
NHWD	[kg]	5.84E-1	3.38E-4	1.44E-1	2.78E-2	9.12E-5	1.94E-1	-6.30E-2
RWD	[kg]	2.37E+0	4.23E-5	9.24E-5	2.70E-5	1.24E-5	1.13E-5	-4.18E-5
CRU	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	[kg]	5.38E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MER	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EEE	[MJ]	2.10E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.30E+1
EET	[MJ]	2.40E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.67E+1

Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EEE = Exported thermal energy

6. LCA: Interpretation



Analysing the impacts of the total life cycle of the product, the graphic shows that the stage with more impact is the production.

In the production stage (module A1-A3) of Cork Flooring Floating EcoDecor, the process with the highest impact is the production of HDF.

Abiotic Depletion (ADP)
As for ADP, the component with the highest impacts is the HDF. According to the EPD of this material, the impacts are “caused almost completely by infrastructure processes, such as the buildings required for the production of UF/MUF resins (about 80 %); the main resources contributing to the ADP (elements) are gold and copper; The impacts regarding the HDF are associated to the urea formaldehyde resin in the dataset, necessary to agglomerate the wood fibres.”

Abiotic Depletion (fossil fuels)
The main contribution on ADP fossil fuels is also HDF (associated to assembling stage). Regarding the HDF, the EPD indicates that the impacts are “caused mainly by the consumption of natural gas and crude oil for the production of the UF/MUF resins and to a much smaller extend for the generation of electricity.

Global Warming Potential (GWP)
This category is affected negatively mainly by the use of the non-PVC film and the resin MUF. This is associated with electricity use and the impacts are linked to the emission of global warming gases into the atmosphere while burning fossil fuels.
The positive impact in this category is due to the CO2 stored in the products, due to cork and wood from cork layers, HDF and wood pallets.

Ozone layer Depletion (ODP)
Ozone layer depletion is influenced mainly by HDF and adhesive PVA. Impacts on PVA are related to the emissions of chlorine associated to the PVC included in the dataset. The impacts of assembling the layers related to HDF are due to “around 60 % of the ODP and are associated with the use of natural gas in upstream processes for the production of UF/MUF resins”, with the release of pollutants during the transport of natural gas. These pollutants are mainly halons and CFCs that are released in the combustion of fuels.

Photochemical Oxidation (POCP)
The components/processes with more significant impacts in this category are HDF and emissions related to the production of the cork layers of particles, NOx and VOC. As for the HDF, around 60 % of the ODP is associated with the use of natural gas in upstream processes for the production of UF/MUF resins.

Acidification Potential (AP)
The component/process with more impact on acidification potential is HDF. The impacts of HDF are caused by the use of urea in the process and by the upstream processes for the production of UF/MUF resins used in the production of the uncoated MDF (electricity generation, transport of raw materials, onsite combustion processes for the production of heat).

Eutrophication Potential (EP)
EP impacts are due to the HDF. The impacts are caused by the use of melamine and urea and associated with the production process (the same is

responsible for AP impacts). The impacts of thermal energy are linked to the combustion of wood ashes.

7. Requisite evidence

As a general rule, all statements must be documented with measured data (presented by the corresponding test certificates). The methods of evidence and the test conditions have to be described together with the results.

If substances are not detected, the limit of detection must be included in the declaration.

Interpreting statements such as "… free of …" or "… are entirely harmless …" are not allowed.

If evidence required by the specific PCR part B is not provided, this has to be justified under the respective title for the required evidence.

If relevant for the scope of application of the declared product, or if derivable from its material composition, it is recommended to provide additional adequate evidence.

7.1 Formaldehyde

Name of testing Institute: Entwicklungs- und Prueflabor Holztechnologie GmbH
Number of report: Order no.2117110/2020/2
Testing method: Chamber test - ISO 16000 part 9 / EN 16516

The determination of formaldehyde and other aldehydes was carried out by DNPH-method. The results are in the following table:

Parameter	Results (µg/m³)			Requirements			
	3 days	7 days	28 days	Class A+	Class A	Class B	Class C
Formaldehyde	6	6	5	<10	<60	<120	120

The product complies with emission class A+ according to the French regulation on VOC 'Decret n° 2011-321 du 23 mars 2011'.

7.2 VOC

Name of testing Institute: Entwicklungs- und Prueflabor Holztechnologie GmbH
Number of report: Order no.2117110/2020/2
Testing method: Chamber test - ISO 16000 part 9 / EN 16516

The determination of the VOC was carried out by aschromatography after previous adsorption on tenax and following thermodesorption with cryo focussion (GC-MS). The results are in the following table:

Parameter	Day 3		Day 7		Day 28	
	Results (mg/m³)	Requirements (mg/m³)	Results (mg/m³)	Requirements (mg/m³)	Results (mg/m³)	Requirements (mg/m³)
TVOC	0.1	0.3	0.1	0.5	0.1	1.0
∑ SVOC	0.00	0.03	0.00	0.05	0.00	0.1
R-Value	0.2	0.5	0.1	0.5	0.0	1
∑ VOC w/o LCI	0.02	0.05	0.00	0.05	0.00	0.1
∑ Carcinogens	0.000	0.001	0.000	0.001	0.000	0.001
Formaldehyde	0.006	0.060	0.006	0.060	0.005	0.120
∑ VVOC	0	-	0	-	0	-

The product complies with AgBB scheme, August 2018.

8. References

IBU 2021
Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V., Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021. www.ibu-epd.com

AgBB scheme, June 2021
Evaluation procedure for VOC emissions from building products

EN 425
EN 425:2002 Resilient and laminate floor coverings. Castor chair test

EN 438–2
EN 438-2:2016 High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (usually called laminates) - Part 2: Determination of properties

EN 717-1
EN 717-1:2004 Wood-based panels. Determination of formaldehyde release. Formaldehyde emission by the chamber method

EN 12673
EN 12673:1999, BS 6068-2.65:1999 Water quality. Gas chromatographic determination of some selected chlorophenols in water

EN 13329
EN 13329:2006+A1:2008 Laminate floor coverings. Elements with a surface layer based on aminoplastic thermosetting resins. Specifications, requirements and test methods

EN 13501-1
EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests

EN 13893
EN 13893:2002 Resilient, laminate and textile floor coverings. Measurement of dynamic coefficient of friction on dry floor surfaces.

EN 14041
EN 14041: 2004/AC:2006 Resilient, textile and

laminate floor coverings - Essential characteristics/ and the CE-marking.

EN 15468
EN 15468:2016 Laminate floor coverings - Elements with directly applied printing and resin surface layer - Specifications, requirements and test methods

EN 15804
EN 15804:2012-04+A1 2013, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

EN 16516
EN 16516:2017+A1:2020 Construction products: Assessment of release of dangerous substances. Determination of emissions into indoor air.

EN ISO 9239-1
ISO 9239-1:2010 Reaction to fire tests for floorings — Part 1: Determination of the burning behaviour using a radiant heat source.

EN ISO 10140
ISO 10140-1:2010 Acoustics — Laboratory measurement of sound insulation of building elements — Part 1: Application rules for specific products.

EN ISO 11925-2
ISO 11925-2:2020 Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test.

ISO 14025
DIN EN ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

EN ISO 24343-1
EN ISO 24343-1:2007 Resilient and laminate floor coverings — Determination of indentation and residual indentation — Part 1: Residual indentation

ISO 10874
ISO 10874:2009 Resilient, textile and laminate floor coverings — Classification.

ISO 16000-9
ISO 16000-9:2006 Indoor air — Part 9: Determination of the emission of volatile organic compounds from building products and furnishing — Emission test chamber method.

ISO 24336
ISO 24336:2005 Laminate floor coverings — Determination of thickness swelling after partial immersion in water.

ISO 24337
ISO 24337:2006 Laminate floor coverings — Determination of geometrical characteristics.

European Waste Catalogue Directive
Waste classification and the European List of Waste[AR1]

French regulation "Décret n° 2011-321“
VOC regulation for construction and furnishing products[AR2]

Regulation (EU) No. 305/2011 /CPR
Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC.

PCR 2018, Part A
Institut Bauen und Umwelt e.V., Berlin (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report. March 2018 (www.bau-umwelt.de).

PCR 2018, Part B
Institut Bauen und Umwelt e.V., Königswinter (pub.): PCR Guidance-Texts for Building-Related Products and Services From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU) Part B: Requirements on the EPD for Floor coverings. February 2018 (www.bau-umwelt.de)

Software

SimaPro version 9.1.1.1
Pré Consultants, 2020. Software SimaPro version 9.1.1.1.

Database

Ecoinvent v3.6[BSJ1]
Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B., 2016. The ecoinvent database version 3 (part I): overview and methodology. The International Journal of Life Cycle Assessment, [online] 21(9), pp.1218–1230. Available at: http://link.springer.com/10.1007/s11367-016-1087-8
[BSJ1]Please list in a proper way, title, version. Editor..etc

Publisher
Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Tel +49 (0)30 3087748- 0
Fax +49 (0)30 3087748- 29
Mail info@ibu-epd.com
Web **www.ibu-epd.com**

Programme holder
Institut Bauen und Umwelt e.V.
Panoramastr 1
10178 Berlin
Germany

Tel +49 (0)30 - 3087748- 0
Fax +49 (0)30 – 3087748 - 29
Mail info@ibu-epd.com
Web **www.ibu-epd.com**

s+a green lab
think . act

Author of the Life Cycle Assessment
Greenlab
R. Cintura do Porto de Lisboa B
5A-B
1950 323 Lisboa
Portugal

Tel +351 213 879 414
Fax n/a
Mail kbenis@greenlab.com.pt
Web **www.saraivaeassociados.com/pt/green-lab/**

AMORIM
CORK
FLOORING

Owner of the Declaration
Amorim Cork Flooring, S. A.
Rua do Ribeirinho 202
4536-907 S. PAIO DE OLEIROS
Portugal

Tel +351 227 475 600
Fax +351 227 475 601
Mail geral.ar@amorim.com
Web **www.amorimcorkflooring.com**