ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Parador GmbH
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-PAR-20230152-IBC1-EN
Issue date	21.09.2023
Valid to	20.09.2028

Vinyl design flooring with HDF core board

Parador GmbH

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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PARADOR

1. General Information

Parador GmbH

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-PAR-20230152-IBC1-EN

This declaration is based on the product category rules:

Floor coverings, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

21.09.2023

Valid to

20.09.2028

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

Vinyl design flooring with HDF core board

Owner of the declaration

Parador GmbH
Millenkamp 7-8
48653 Coesfeld
Germany

Declared product / declared unit

The declared unit is one square metre (m^2) of HDF vinyl design flooring.

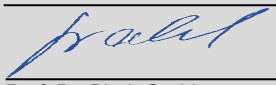
Scope:

This product declaration refers to an average square metre of HDF vinyl design flooring. The average was calculated according to the area produced in one year.
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+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally



Prof. Dr. Birgit Grahl,
(Independent verifier)

2. Product

2.1 Product description/Product definition

Design floorings (vinyl with HDF core board) are an entire product family of flooring solutions that are available in different formats, versions and designs. Depending on their design, they are suitable for a wide range of residential and commercial applications.

Vinyl design floorings with a high density fibreboard (HDF) come with a click system, which allows for easy installation.

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* and the CE-marking.

For the application and use the respective national provisions apply.

2.2 Application

Vinyl design floorings with an HDF core board are suitable for residential and commercial indoor use. They are installed floating either on screed or other existing subfloors in conjunction with a suitable underlay.

The principles of proper installation can be found in the installation instructions enclosed with the packages or in the 'Vinyl and Modular ONE design flooring guide' (see: https://parador.de/services/downloads/designboden)

2.3 Technical Data

Structural data

Name	Value	Unit
Product thickness	9.1 – 9.6	mm
Density	950 ± 5 %	kg/m^3
Wear layer thickness	0.2 – 0.55	mm
Nutzungsklasse	22 + bis 33	
Product Form	Planks	-
Type of manufacture	Lamination / Profiling	-
Length of the surface layer	598 – 2,200	mm
Width of the surface layer	191 – 457	mm
Grammage	8,800 – 9,700	g/m^2

Further technical data can be found on the company website: https://parador.de/services/downloads/designboden.

Certificates can be found on: https://parador.de/services/downloads/designboden under the heading "Certificates".

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to *EN 14041*.

The Declarations of Performance can be found on: https://parador.de/services/downloads/designboden under the heading "Declarations of Performance".

2.4 Delivery status

The vinyl floorings with an HDF core board are delivered in the following condition.

Format		
Length	598 – 2200	mm
Width	191 – 457	mm
Plank thickness	9.1 – 9.6	mm

Other formats are possible – on this point and for details of packaging units, please see the current list of types and technical data sheets for the product in question.

The technical data sheets can be found on: https://parador.de/services/downloads/designboden under the heading "Technical Data Sheets".

2.5 Base materials/Ancillary materials

The averaged percentage of component materials per m² in mass per cent for the EPD is as follows:

- HDF core board > 60 %
- Vinyl carrier/decor/wear layer: 36 % (with 59 % calcium carbonate ($CaCO_3$) and 31 % polyvinyl chloride (PVC))
- Cork backing: 2 %
- Dispersion glue / PUR (polyurethane) adhesive: 1 %
- Bevel lacquer (water-based varnish) < 1 %

This product/article/at least one partial article contains substances listed in the candidate list (date: 18.08.2022) exceeding 0.1 percentage by mass: no.

This product/article/at least one partial article contains other CMR substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: no.

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.

2.6 Manufacture

The HDF core board, the carrier/wear layer and the cork backing are pressed together in a laminating plant using a glue / PUR adhesive to form large-format boards (semi-finished parts).

Afterwards, these semi-finished parts are first formatted into planks in the production facilities before they are provided with a click profile (depending on the type, this is sometimes followed by bevel varnishing).

After the following quality control of the individual flooring elements, they are packed into half-shell cardboard boxes and shrink-wrapped in polyethylene (PE) film.

These individual packaging units are stacked on pallets according to the different formats and made available in the warehouse for subsequent delivery.

All processes are continually inspected and documented as part of the in-house Factory Production Control (FPC) system.

Parador's quality management system is certified according to *ISO 9001* and ensures that all processes are documented and, where necessary, amended.

2.7 Environment and health during manufacturing

Wood chips resulting from the production process are burned in a solid-fuel boiler to generate heat at the Coesfeld site.

Wood chips contaminated with vinyl are disposed of in a targeted manner via specialist disposal companies.

Parador is certified according to the European Eco-Management and Audit System *EMAS* which audits both the environmental and the energy-related aspects of the site and requires the site to undergo continual improvement.

2.8 Product processing/Installation

For the installation of these design floorings, Parador recommends the use of the following tools and aids: measuring tape or folding ruler, cutter knife, pencil, handsaw, Parador plastic spacer wedges, Parador MultiTool, Parador vinyl flooring installation aid, hammer, drill and jigsaw, cross-cut saw or circular saw.

The usual safety precautions (e.g. safety goggles and dust mask when sawing) must be observed. The resulting shavings and sawdust should be extracted. If the products are used for commercial purposes, the provisions of the employers' liability insurance association shall apply.

The residual material and packaging must be disposed of separately according to waste category. Further information can be found in the installation instructions enclosed with the product or in the 'Vinyl and Modular ONE design flooring guide' (see https://parador.de/services/downloads/designboden).

2.9 Packaging

The planks are packed in half-shell cardboard boxes which are shrink-wrapped in polyethylene (PE) film for better protection against moisture. Exchangeable Euro-pallets and PET strapping are also used for transport.

All packaging components can be recycled pursuant to their category.

2.10 Condition of use

Wood is a hygroscopic material, which means it can absorb and release moisture. For use it is therefore important to ensure a balanced room climate in order to avoid possible dimensional changes. The room climate should be at a temperature of approx. 20 °C and a relative humidity of between 35 and 60 % all year round.

Cleaning and care of these Parador products must be carried out in accordance with the 'Vinyl and Modular ONE design flooring guide' (see https://parador.de/services/downloads/designboden).

2.11 Environment and health during use

There are no known negative effects between product, environment, and health. Risks to water, air, and soil cannot occur when used as intended. Emissions of pollutants are below the legal limits.

In terms of emission behaviour, the vinyl design floorings with an HDF core board meet the requirements of the *AgBB* (Committee for Health-related Evaluation of Building Products) scheme, as well as class A+ according to the French *VOC regulation* (Decrét no 2011-321).

2.12 Reference service life

The Sustainable Building Assessment System (*BNB*) takes a useful life of 20 years as a basis under code no. 352.711.

2.13 Extraordinary effects

Fire

In the area of fire protection, the following building material class is complied with according to *EN 13501-1*.

Fire protection

Name	Value
Building material class	Bfl
Smoke gas development	s1

Water

An edge swell protection exists against short-term exposure to water. This design floor covering is not resistant to permanent exposure to water; irreversible swelling is possible. However, a dangerous impact on the environment is not to be expected when exposed to water.

Mechanical destruction

Mechanical destruction is not expected to have any negative consequences for the environment.

2.14 Re-use phase

In case of selective dismantling, the product can easily be reused even after the end of the useful life. Residues and waste from vinyl flooring with HDF core boards are to be recycled in accordance with *AVV* 17 02 03.

2.15 Disposal

Disposal is to be organised under the following *AVV code*: *AVV code* 17 02 03.

If repeated use as a floor covering is no longer possible, the product can be sent for thermal recycling to generate heat and electricity.

Open burning or burning in a chimney is not possible, as the combustion of plastics leads to harmful emissions. Incineration should therefore take place in a plant with a connected flue gas cleaning system, such as a waste incineration plant.

2.16 Further information

Additional information about the company and other products as well as information brochures – including the *EMAS* Environmental Statement – are available to download on the company website: www.parador.de

3. LCA: Calculation rules

3.1 Declared Unit

The declared unit is an average square metre ($1m^2$) of HDF vinyl design flooring. The average value was calculated from the data collected from the input quantities of the components based on the quantities during the period 12.2020 - 11.2021.

Declared unit

Name	Value	Unit
Declared unit	1	m^2
Grammage	8.716	kg/m^2
Layer thickness	0.0092	m
Gross density	950	kg/m^3

3.2 System boundary

Type of EPD: Cradle to factory gate with options.

Modules A1 to A3 and A5

The product stage (A1–A3) begins with considering the production of the necessary raw materials and energies, including all corresponding upstream chains and the procurement transports. Furthermore, the entire manufacturing phase was mapped, including treatment of production waste until end-of-waste status (EoW) was reached. Module A5 considers the disposal of packaging materials. Product losses as well as power-consuming tools, auxiliary materials and installation materials, on the other hand, were not taken into account in A5, as the amount of waste depends on the type of room (more waste is to be expected in rooms with corners than in rectangular rooms).

Modules C1–C4

The modules include the environmental impacts for the treatment of the waste categories until the end-of-waste (EoW) status is reached, including the associated transports at the end of the product life cycle. No expenses are considered for dismantling (module C1), as manual dismantling is used as a basis. In Module C3, thermal recovery is modelled. No materials are sent to landfill so no negative or positive effects are accounted for in Module C4.

Module D

Identification of the benefits and costs of the product outside the system boundary. These consist of energy credits from thermal utilisation (C3) in the form of the average European electricity mix or thermal energy from natural gas.

3.3 Estimates and assumptions

In the model, combustion of the cork portion at end of life was combined with HDF boards, since a specific data set is not available.

It was also assumed that thermal waste processing at end of life uses systems with an R1 factor (efficiency of energy conversion or energy efficiency of waste incineration plants according to the European Waste Framework Directive) > 0.6.

3.4 Cut-off criteria

Components in the decor/wear layer for which no matching data sets are available and whose mass fraction is significantly less than 0.1 % in each case, were partially truncated.

The sum of the neglected substances falls below 5 % of the material use and the influence on impact categories.

3.5 Background data

The software system for holistic balancing *GaBi* and the GaBi database were used to model the life cycle. The entire manufacturing process as well as the energy consumption were modelled on the basis of manufacturer-specific data. However, generic background datasets were used for the upstream and downstream processes. Where possible, country-specific datasets were used for modules A1–A3, and the corresponding European datasets for the disposal scenarios (C modules).

3.6 Data quality

The foreground data was provided by Parador and has been tested for plausibility. The quality of the foreground data and the extent to which the data is representative can therefore be considered to be high.

The data quality of the background data has been rated as good in regard to the extent to which it is representative in temporal, technical and geographical terms.

With regard to the robustness of the life cycle assessment values, it can be stated that the potential impacts on the environment that have been taken into account result for the most part from the background data.

Thus, the impact of background data and primary products is high compared to the environmental impacts caused by the actual production.

3.7 Period under review

Foreground data was collected for the period 12/2020 to 11/2021.

3.8 Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Europe

3.9 Allocation

All required energies, raw materials, and supplies could be clearly assigned to the declared product. No by-products are produced and no allocation is required.

The input energy was divided among the products studied. The total energy consumed in the production of floor coverings was broken down by area of the different production processes (i.e. lamination and profiling) and then by weight of the materials processed.

In modules A1–A3, the declared benefits and negative effects from the net flows for the thermal recovery of production waste are offset. Packaging materials and the product are incinerated at the end of life in a waste incineration plant. Any emissions that occur are taken into account in the model. The declared benefits and negative effects from the net flows resulting from the thermal recovery of the packaging waste - PE film (module A5) and from the recovery processes related to the product in the end of life (module C3) are assigned to module D. Cardboard boxes in A5 were modelled as cardboard in sink. As secondary material has entered the system unencumbered, no declared benefits and negative effects from net flows are given in the end of life for corrugated cardboard.

3.10 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 background database used is GaBi version 10.6.2.9, content version 2022.2.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2

Information describing the biogenic carbon content at the factory gate

Name	Value	Unit
Biogenic carbon content in product	2.02	kg C
Biogenic carbon content in accompanying packaging	0.037	kg C

Reference useful life

Name	Value	Unit
Life Span (according to BBSR)	20	a

End of life (C1–C4)

Name	Value	Unit
Energy recovery waste type	8.716	kg
Landfilling waste type	-	kg
Transport distance truck to waste incineration plant	75	km
Truck capacity (including empty runs)	50	%

Potential for reuse, recovery and recycling (D), relevant scenario data

Name	Value	Unit
Combustible material	8.716	kg
R1 factor waste incineration plant	> 60	%
Lower heating value	15.04	MJ/kg

5. LCA: Results

The environmental impacts for 1 m^2 of HDF vinyl flooring are shown below. The following tables show the results of the impact assessment, the use of resources, waste and other output streams in relation to the declared unit.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR 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	MND	X	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m² HDF-Vinylboden

Parameter	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	2.85E+00	1.71E-01	0	6.13E-02	1.13E+01	0	-3.49E+00
GWP-fossil	kg CO_2 eq	1.04E+01	4.05E-02	0	6.09E-02	3.9E+00	0	-3.49E+00
GWP-biogenic	kg CO_2 eq	-7.54E+00	1.3E-01	0	0	7.41E+00	0	0
GWP-luluc	kg CO_2 eq	9.97E-03	4.69E-06	0	4.11E-04	3.63E-04	0	-3.81E-04
ODP	kg CFC11 eq	1.93E-10	1.78E-15	0	5.99E-15	4.67E-12	0	-2.34E-11
AP	mol H^+ eq	5.7E-02	6.45E-06	0	2.2E-04	6.2E-03	0	-4.57E-03
EP-freshwater	kg P eq	4.38E-05	2.86E-09	0	2.18E-07	1.64E-06	0	-4.77E-06
EP-marine	kg N eq	1.51E-02	1.98E-06	0	1.02E-04	2.76E-03	0	-1.24E-03
EP-terrestrial	mol N eq	1.5E-01	3.14E-05	0	1.14E-03	3.22E-02	0	-1.33E-02
POCP	kg NMVOC eq	4.06E-02	4.7E-06	0	1.98E-04	7.19E-03	0	-3.48E-03
ADPE	kg Sb eq	1.42E-05	1.11E-10	0	6.15E-09	1.19E-07	0	-5.24E-07
ADPF	MJ	1.95E+02	1.37E-02	0	8E-01	1.08E+01	0	-5.93E+01
WDP	m^3 world eq deprived	1.12E+00	3.68E-03	0	6.81E-04	1.48E+00	0	-3.65E-01

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; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m² HDF-Vinylboden

Parameter	Unit	A1-A3	A5	C1	C2	C3	C4	D
PERE	MJ	5.19E+01	3.89E+00	0	5.55E-02	9.58E+01	0	-1.62E+01
PERM	MJ	9.7E+01	-3.89E+00	0	0	-9.31E+01	0	0
PERT	MJ	1.49E+02	1.72E-03	0	5.55E-02	2.73E+00	0	-1.62E+01
PENRE	MJ	1.65E+02	2.24E-01	0	8.04E-01	4.11E+01	0	-5.93E+01
PENRM	MJ	3.06E+01	-2.1E-01	0	0	-3.04E+01	0	0
PENRT	MJ	1.96E+02	1.37E-02	0	8.04E-01	1.08E+01	0	-5.93E+01
SM	kg	7.89E-02	0	0	0	0	0	1.01E-02
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	m^3	4.88E-02	8.68E-05	0	6.4E-05	3.57E-02	0	-1.55E-02

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+A2: 1 m² HDF-Vinylboden

Parameter	Unit	A1-A3	A5	C1	C2	C3	C4	D
HWD	kg	1.24E-06	4.85E-13	0	4.25E-12	1.1E-09	0	-8.05E-09
NHWD	kg	3.36E-01	1.59E-04	0	1.31E-04	2.58E+00	0	-2.99E-02
RWD	kg	5.37E-03	2.98E-07	0	1.49E-06	5.15E-04	0	-4.64E-03
CRU	kg	0	0	0	0	0	0	0
MFR	kg	0	8.2E-02	0	0	0	0	0
MER	kg	7.84E-01	1.27E-02	0	0	8.72E+00	0	0
EEE	MJ	0	8.5E-02	0	0	1.55E+01	0	1.56E+01
EET	MJ	0	1.51E-01	0	0	2.82E+01	0	2.84E+01

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; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:
1 m² HDF-Vinylboden

Parameter	Unit	A1-A3	A5	C1	C2	C3	C4	D
PM	Disease incidence	ND	ND	ND	ND	ND	ND	ND
IR	kBq U235 eq	ND	ND	ND	ND	ND	ND	ND
ETP-fw	CTUe	ND	ND	ND	ND	ND	ND	ND
HTP-c	CTUh	ND	ND	ND	ND	ND	ND	ND
HTP-nc	CTUh	ND	ND	ND	ND	ND	ND	ND
SQP	SQP	ND	ND	ND	ND	ND	ND	ND

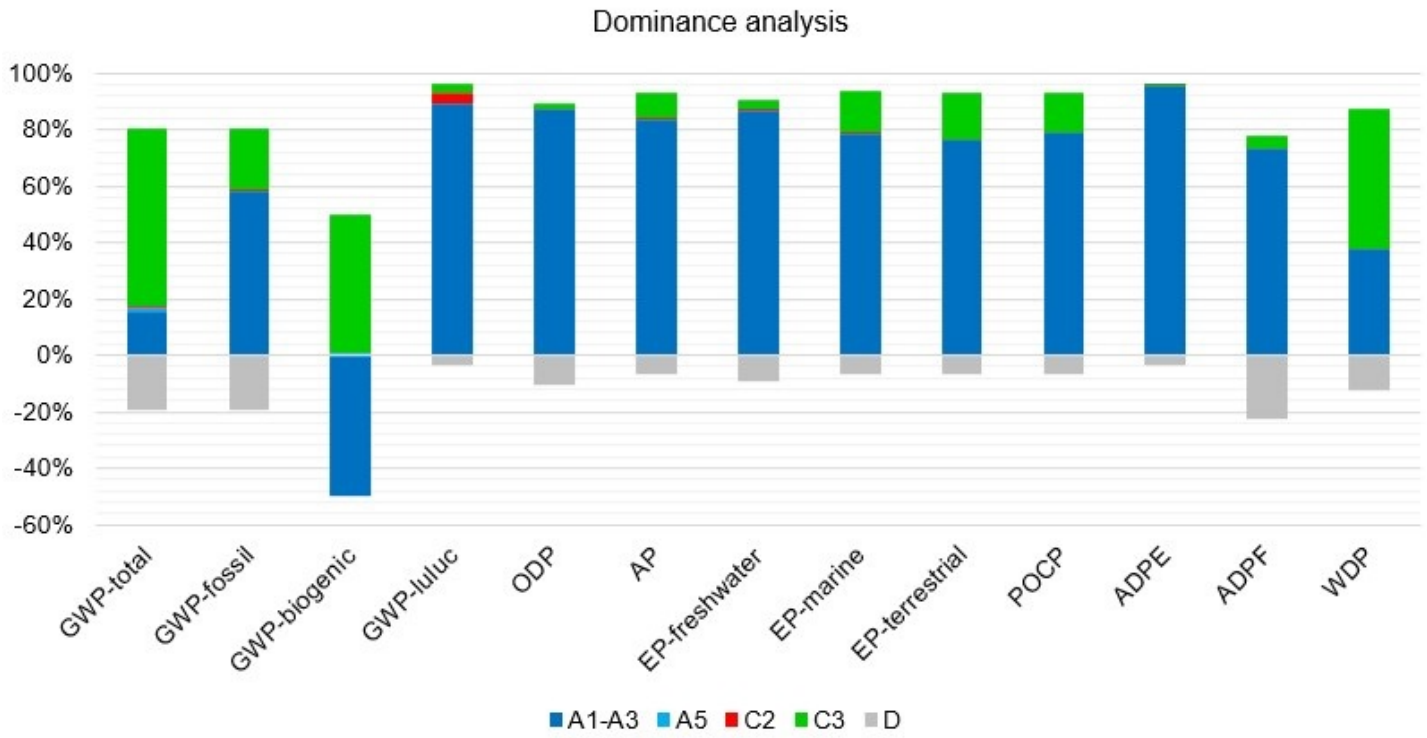
PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

The designation of the additional indicators according to EN 15804+A2 is optional. The indicators are not shown in the EPD ("ND").

Disclaimer 1 – for the indicator 'Potential Human exposure efficiency relative to U235'. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators 'abiotic depletion potential for non-fossil resources', 'abiotic depletion potential for fossil resources', 'water (user) deprivation potential, deprivation-weighted water consumption', 'potential comparative toxic unit for ecosystems', 'potential comparative toxic unit for humans – cancerogenic', 'Potential comparative toxic unit for humans - not cancerogenic', 'potential soil quality index'. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

6. LCA: Interpretation



Environmental impacts
The dominance analysis shows that the manufacturing phase (modules A1–A3) is dominant in most impact categories over the life cycle of the floor covering.

One exception is the indicator Global Warming Potential biogenic (GWP-biogenic).

GWP-biogenic in modules A1–A3 is negative due to the proportion of biogenic carbon in the cardboard for the packaging and that of the HDF core board. When recycling at the end of the life cycle in module A5 (packaging) or C3 (product), the biogenic carbon leaves the product system under consideration and is thus offset.

In the following, the modelled influences in the manufacturing phase (modules A1–A3) of the environmental impact indicators considered are discussed.

The indicators Global Warming Potential fossil (GWP- fossil), Abiotic Depletion Potential fossil fuels (ADPF) and Water Demand Potential (WDP) are dominated by the HDF core

board, the energy demand for the production of the vinyl layer and the proportion of PVC in the vinyl layer.

Global warming potential luluc (GWP-luluc) is most influenced by the HDF core board.

Stratospheric ozone depletion potential (ODP) is dominated by the amount of PVC in the vinyl layer. Acidification potential of soil and water (AP) is dominated by the energy demand for the production of the vinyl layer as well as the container ship transports.

Freshwater eutrophication potential (EP-freshwater) is dominated by the HDF core board as well as the additives in the vinyl layer. The additives for the vinyl layer have the highest contribution to the potential for abiotic depletion of non-fossil resources (ADPE).

Eutrophication Potential - salt water (EP marine), Eutrophication Potential - land (EP terrestrial), Photochemical Ozone Creation Potential (POCP) are dominated by the HDF core board, the energy demand for the production of the vinyl layer and the container ship transports.

Primary energy

For both renewable and non-renewable primary energy (PERT and PENRT respectively), the influences are mainly in the manufacturing phase and there in the upstream chains of the HDF core board and the PVC for the vinyl layer.

Range of the results
The variability of the results comes in particular from the energy data from the upstream chains. For the GWP-fossil indicator in modules A1–A3, a range of results from -22 % to +30 % compared to the declared average was calculated.

7. Requisite evidence

The following are the valid verifications / certificates for the product and the manufacturer.

VOC emissions AgBB
Testing laboratory:
eco-INSTITUT Germany GmbH
Schanzenstrasse 6-20
Carlswerk 1.19
D-51063 Cologne

Test report: 57544-A002 dated 06.09.2022
Testing method: Emission analysis according to *EN 16516*

Results overview (7 days)

Name	Value	Unit
TVOC	100	µg/m3
TSVOC	< 5	µg/m3
KMR1	< 1	µg/m3

Fulfilment of the requirements of the AgBB scheme.

VOC emissions French VOC Regulation (Decrét no 2011321)
Testing laboratory:
eco-INSTITUT Germany GmbH
Schanzenstrasse 6-20
Carlswerk 1.19
D-51063 Cologne

Test report: 57544-A002-FVO-L dated 06.09.2022

Testing method: Emission analysis according to *EN 16516*

Fulfilment of the emission requirements of **class A+**

Fire behaviour
Testing laboratory:
Exova Warringtonfire, Frankfurt
Industriepark Höchst, C369
D-65926 Frankfurt am Main

Test report: 2012-1845-K1-2 dated 03.09.2012

Testing method: Fire behaviour classification according to s

Plasticiser screening (regular monitoring)
Testing laboratory:
eco-INSTITUT Germany GmbH
Schanzenstrasse 6-20
Carlswerk 1.19
D-51063 Cologne

Test report: 57362-003 dated 17.05.2022

Testing method: Gas chromatographic determination of plasticisers in consumer articles by GC/MSD

Result: No deviations from the internal specification.

PEFC certificate
The *PEFC* certificate (see https://parador.de/services/downloads/allgemein) confirms that the processes for the production of Parador GmbH's vinyl design flooring with HDF core board meet the requirements of the current *PEFC CoC* standard.

8. References

Standards

ISO 9001
DIN EN ISO 9001:2015-11, Quality management Systems - Requirements.

EN 13501-1
DIN EN 13501-1:2019-05, Classification of construction products and types of construction according to their reaction to fire - Part 1: Classification using the results of tests on the reaction to fire of construction products.

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

EN 14041
DIN EN 14041:2018-05, Resilient, textile, laminate and modular multilayer floor coverings - Essential characteristics.

EN 16516
DIN EN 16516:2020-10, Construction products: Assessment of release of hazardous substances - Determination of emissions

to indoor air.

Further literature

AgBB
Requirements for indoor air quality in buildings: health assessment of emissions of volatile organic compounds (VVOC, VOC, and SVOC) from building products.

AVV
Waste Catalogue Regulation (AVV) of 10 December 2001 (Federal Law Gazette I p. 3379), which was last amended by Article 2 of the Regulation, dated 30 June 2020 (Federal Law Gazette I p. 1533).

BNB
BNB Code No. 352.711 Useful lives of building components for life cycle analyses according to the evaluation system for sustainable building, 2017: Linoleum, laminate, PVC, plastic engineered wood flooring, cork, rubber, sports hall coverings. Berlin: Federal Ministry of the Interior, for Building and Home Affairs.

ECHA
List of Candidate Substances of Very High Concern (ECHA Candidate List), dated 19 January 2021, published in accordance with Article 59 (10) of the REACH Regulation. Helsinki: European Chemicals Agency.

EMAS
Regulation (EC) No. 1221/2009 of the European Parliament and of the Council on the voluntary participation by organisations in a community system for environmental management and environmental auditing and repealing Regulation (EC) No. 761/2001, as well as the decisions of the Commission 2001/681/EC and 2006/193/EC. https://www.emas.de/home

GaBi
GaBi 10.6.2.9 : Software System and Database for Life Cycle Engineering, Sphera Solutions GmbH, Leinfelden Echterdingen, 2022.

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

PEFC
Chain of Custody of Forest and Trees Based Products - Requirements PEFC ST 2002:2020 & PEFC Trademark Rules - Requirements PEFC ST 2001:2020 - Production and distribution of laminate, resilient flooring, engineered wood flooring, ceilings and other wood products; Parador Certificate No.: BMCERT-PEFC-COC- 00076; Latvia, Riga: BM Certification Ltd., 6.10.2022.

PCR Part A
Product category rules for building-related products and services. Part A: Calculation rules for the LCA and requirements for the project report according to EN 15804+A2:2019, version 1.3. Berlin: Institut Bauen und Umwelt e.V. (ed.), 31.08.2022.

PCR: Floor coverings
PCR instruction texts for building-related products and services. Part B: Requirements of the EPD for floor coverings, version v4. Berlin: Institut Bauen und Umwelt e.V. (publ.), 13.06.2023

Regulation (EU) No. 305/2011
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. https://eur-lex.europa.eu/legalcontent/DE/TXT/PDF/?uri=CELEX:02011R0305-20210716&from=ENV0C-Verordnung

Regulation (EU) No. 528/2012
Regulation (EU) No. 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the availability on the market and use of biocide products.

Test report 57544-A002
Emission analysis of HDF vinyl flooring according to EN 16516. Cologne: eco-INSTITUT Germany GmbH. 06.09.2022.

Test report: 57544-A002-FVO-L
Emission analysis of HDF vinyl flooring according to EN 16516. Cologne: eco-INSTITUT Germany GmbH. 06.09.2022.

Test report: 2012-1845-K1-2
Classification of HDF vinyl flooring for reaction to fire according to EN 13501-1:2010. Frankfurt am Main: Exova Warringtonfire, Frankfurt. 03.09.2012.

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Gas chromatographic determination of plasticisers in consumer articles by GC/MSD Cologne: eco-INSTITUT Germany GmbH. 17.05.2022.

VOC Regulation FR
A+ émissions dans l'air intérieur according to French VOC regulation, France, 2011.

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Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

+49 (0)30 3087748- 0
info@ibu-epd.com
www.ibu-epd.com

Programme holder

Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

+49 (0)30 3087748- 0
info@ibu-epd.com
www.ibu-epd.com

Author of the Life Cycle Assessment

brands & values GmbH
Altenwall 14
28195 Bremen
Germany

+49 421 70 90 84 33
info@brandsandvalues.com
www.brandsandvalues.com

Owner of the Declaration

Parador GmbH
Millenkamp 7-8
48653 Coesfeld
Germany

02541 736 678
info@parador.de
www.parador.de