

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

Owner of the Declaration	Unilin BV, division flooring
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-UNI-20250640-IBC1-EN
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Valid to	09.03.2031

Rigid Luxury Vinyl Tiles (LVT) class 33 with floating installation Unilin B.V. Division Flooring

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1. General Information

Unilin B.V. Division Flooring

Programme holder

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

Declaration number

EPD-UNI-20250640-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

10.03.2026

Valid to

09.03.2031



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

Rigid Luxury Vinyl Tiles (LVT) class 33 with floating installation

Owner of the declaration

Unilin BV, division flooring
Ooigemstraat 3
8710 Wielsbeke
Belgium

Declared product / declared unit

1 m² of rigid Luxury Vinyl Tiles (LVT) floating floor (4-5 mm thickness with and without underlay) with mechanical locking.

Scope:

In this EPD semi-flexible LVT floating floor with mechanical locking according to EN 16511:2023 Modular mechanical locked floor coverings(MMF) - Specification, requirements and test method for multilayermodular panels for floating installation are declared. The results are representative of production in UNILIN B.V. Division Flooring, Avelgem site (Belgium).

This EPD covers printed laminate polyvinyl chloride floor coverings produced by Unilin under the following commercial names:

Unilin LVT Rigid Click 4 mm CL33 without underlay:

Alpha Vinyl Bloss Base, Alpha Vinyl Oro Base, Loc Tender Base, Vitality Amuse Base, Pergo Otra Pro, Pergo Aura Pro, Pergo Namsen Pro, Pergo Viskan Pro, Hav by Pergo

Unilin LVT Rigid Click Pad 4+1 mm CI33 with underlay

Alpha Vinyl Bloss, Alpha Vinyl Oro, Moduleo Layred 4+1 mm, Design Floors Elita Acoustic, Design Floors Prisma Acoustic, Design Floors Origin 30 Engineered Click Acoustic, Elka 4+1 mm, Loc Tender, Vitality Amuse, Pergo Otra Pad Pro, Pergo Aura Pad Pro, Pergo Namsen Pad Pro, Pergo Viskan Pad Pro, Pergo Namsen Pad Pro, Pergo Viskan Pad Pro

Unilin LVT Rigid Click 5 mm CL33 without underlay

Unilin LVT Rigid Click 5 mm CL33 with underlay

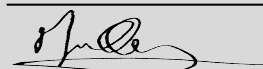
Alpha Vinyl Bloom, Alpha Vinyl Illume, Alpha Vinyl Ciro, Moduleo Layred 5+1 mm, Design Floors Ulyssa Acoustic, Design Floors Textura Acoustic, Elka 5+1 mm, Loc Frame (Herringbone), Vitality Pulse, Pergo Voxnan Pad Pro, Pergo Lysefjord Pad Pro, Pergo Limfjord Pad Pro, Pergo Vormo Pad Pro, Pergo Glomma Pad Pro, Pergo Isefjord Pad Pro, Pergo Vormo Pad Pro, Pergo Glomma Pad Pro, Vibrance by Pergo, Pergo Saimaa, Maxeda, Sens by Quick-Step

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



Mr Olivier Muller,
(Independent verifier)

2. Product

2.1 Product description/Product definition

Rigid vinyl floorings, also known as Luxury Vinyl Tiles (LVT), are composed of multiple layers designed for durability, comfort, and aesthetic appeal. The top layer features a transparent PVC wear-resistant contact surface coated with a PU lacquer (1-2), providing a matte finish with excellent stain and friction resistance. Beneath this is the decorative PVC layer (3), which can be printed with any design to give the floor its unique appearance. In the middle, an additional soft PVC layer (4) enhances acoustic performance and walking comfort. The bottom core layer consists of two rigid PVC layers reinforced with unwoven glass fibres (5,6,10,11), separated by a foamed PVC layer (7-9) to improve stability and prevent the telegraphing effect from subfloor irregularities. Some LVT products include a 1mm pre-attached underlay (12) for quicker and easier installation. The planks are equipped with patented mechanical connections such as Uniclic, Unidrop, or Unizip systems, ensuring secure and efficient assembly.



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.

2.2 Application

According to EN ISO 10874 the area of application for resilient floor coverings is indicated by use classes. The declared product group covers the use classes up to and including 33 based on the EN 16511.

2.3 Technical Data

Constructional data

Name	Value	Unit
Product minimum thickness	4	mm
Product maximum thickness	5+1	mm
Product minimum mass	6,400	kg/m ²
Product maximum mass	7,950	kg/m ²
Product form	Planks & Tiles	

- Performance data of the product 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 and the CE marking.
- Voluntary data: The product complies with the requirements of the following standard, too

EN16511:2023 Modular mechanical locked floor coverings (MMF) - Specification, requirements and test method for multilayer modular panels for floating installation. For the application and use the respective national provisions apply.

2.4 Delivery status

LVT floor covering is delivered in planks or tiles. Typical standard dimensions are as follows (length - width-thickness)

- 1251 mm x 189 mm x 5 mm (4+1 mm)
- 610 mm x 303 mm x 5 mm (4+1 mm)
- 630 mm x 126 mm x 6 mm (5+1 mm)
- 1494 mm x 209 mm x 6 mm (5+1 mm)
- 856 mm x 428 mm x 6 mm (5+1 mm)
- 1253 mm x 189 mm x 6 mm (5+1 mm)
- 1317 mm x 189 mm x 6 mm (5+1 mm)
- 610 mm x 303 mm x 6 mm (5+1 mm)
- 1251 mm x 189 mm x 4 mm
- 610 mm x 303 mm x 4 mm

2.5 Base materials/Ancillary materials

The product group has the following composition:

Name	Value	Unit
Fillers	50	%
Polymers (PVC)	31	%
Plasticizers and stabilizers	8	%
Other	11	%

Substances of Very High Concern for Authorisation REACH (date: 16.11.2023) exceeding 0.1 percentage by mass: **NO**

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**

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

LVT Rigid flooring is produced by calendering and laminating the different parts together. The material efficiency is 99 % as all production waste is internally recycled as raw material. In production a certified ISO9001 quality control system is in place.

2.7 Environment and health during manufacturing

The production conditions do not demand any special health protection measures over and beyond the legal requirements. **Water**

Production uses river water for cooling. The use of water in the LVT flooring production process is negligible. Where water is needed, it is re-used in the internal water loop and eventually reinjected into the river after controlling quality and temperature.

Air

The constitutional valid regulations are observed

Soil

There is no impact on soil. In production, a certified ISO 14001 environmental management system is in place

2.8 Product processing/Installation

UNILIN LVT click floor coverings are generally installed floating. This means that the floor covering is not fixed to the sub-floor using glue, nails etc. The floor covering panels are mainly mechanically assembled glue-less by means of tongue and groove. Underlay material is needed when installing LVT click floor coverings in order to achieve a leveling effect, thermal or acoustical insulation.

Installation offcuts are collected through our recycling program RECOVER.

2.9 Packaging

LVT tiles are packed together. The packs are protected using cardboard 6-sided boxes. The (packaging) cardboard is fully recyclable. The packs are palletized on wooden pallets using wood from controlled origin. The pallets can be re-used (Euro pallets) or recycled as wood *category 03 01 05 according to the European Waste Catalogue*.

2.10 Condition of use

A Polyurethan-based lacquer is used for the production of the flooring panels. After exposure to a strong UV light under anaerobic conditions, this coating is 3D crosslinked by an irreversible reaction and completely closing the flooring surface. Under normal conditions, the coating is chemically stable and mechanically firmly bonded to the PVC wear layer.

2.11 Environment and health during use

Environmental protection

When the products are used as designated and according to the current state of knowledge, there are no hazards for water, air and soil.

Health protection

When used normally and in accordance with the designated purpose, no health risks or restrictions are to be anticipated by UNILIN LVT floor coverings. This is in line with the current state of knowledge.

2.12 Reference service life

The BBSR gives a general useful life of 20 years for floor coverings of component group 352.711. Due to the comparatively high resistance of the LVT floorings, Unilin grants an additional warranty (based on the floor owner's life according to the manufacturer's warranty conditions) for the declared product. In order to increase the life duration of the floorcovering, the manufacturer's instructions concerning warranty and care must be observed, available for download at www.unilin.com/en/flooring. The use stage is declared in this EPD for a one-year usage.

2.13 Extraordinary effects

Fire

The reaction to fire is determined according to EN 13501-1. The class for LVT floors produced by UNILIN BV division Flooring, in combination with all underlays of the sales program is Bfl-s1.

Fire protection

Name	Value
Building material class	Bfl
Smoke gas development	s1

Water

In case of a leak or a flood where the flooring has been soaked no visible damage is expected. This is because the product is primarily made of PVC, a material that does not absorb water or degrade upon exposure to moisture.

Mechanical destruction

Small damages in the flooring surface can be repaired by using colored solvent-free melt waxes. Scratches in the transparent wear layer can be repaired with an adapted new coating of 1 or 2 compounds following the manufacturer's instructions. In case of more severe damage, the damaged panels can be replaced. Procedures to repair or replace a damaged plank are available on request. The damaged panels go into the normal end-of-life treatment.

2.14 Re-use phase

A LVT Rigid floor covering, which is not at the end-of-life stage, may be un-installed and re-used as a floor covering. Post-consumer LVT floor covering waste can be recycled as PVC-based products. When appropriate recycling facilities do not exist, LVT floor coverings shall be thermally valorized.

2.15 Disposal

Post-installation and post-consumer flooring panels are considered PVC waste. The *European Waste Code EWC* is 070213. It can be disposed in any regulated municipal waste collection point in the combustible waste container. Unilin offers a take-back program named Recover to enable circularity of PVC flooring. Please contact your local Unilin dealer to check the availability of this Recover program in your country.

2.16 Further information

All information about the product composition, technical performance, instructions for installation and maintenance, precautionary instructions for use, CE marking and relevant DOP (declaration of performance) documents, are available either in the packs or can be found on the homepage www.unilin.com/en/flooring or can be requested at Unilin B.V. Division Flooring info@unilin.com.

3. LCA: Calculation rules

3.1 Declared Unit

1 m² of Luxury Vinyl Tiles (LVT) floor covering with floating installation

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	m ²
Grammage	6.5	kg/m ²
Layer thickness	0.004	m

3.2 System boundary

Type of EPD according to EN 15804+A2: cradle to gate with options, modules C1–C4, and module D (A1–A3 + C + D and additional module A4, A5, B2).

Modules A1-A3 include processes that provide materials and energy input for the system, manufacturing and transport processes up to the factory gate, as well as waste processing. Module A4 includes transport of the floor covering to the place of installation. A4 data are based on an average distance for European deliveries.

Module A5 includes the production of offcuts for the installation of the floor covering, and recycling of offcuts and European end-of-life scenarios for packaging material.

Module B2 is including provision of cleaning agent, energy and water consumption for the cleaning of the floor covering. The LCA results in this EPD are declared for a one-year usage. Module C2 includes transportation of the post-consumer waste to waste processing.

End-of-life scenarios are declared for:

- 100 % recycling (Scenario 0, C3)
- 100 % landfill (Scenario 1, C4/1)
- 100 % incineration in a waste incineration plant (Scenario 2, C3/2)

Module D includes potential benefits from all net flows given module A1 inflows and module A5 and C3/C4 outflows that leave the product boundary system after having passed the end-of-waste state in the form of recovery and/or recycling potentials. Module D is declared for each scenario separately (D, D/1 and D/2)

3.3 Estimates and assumptions

No additional estimates or assumptions had to be made beyond the information stated in clauses 3 and 4.

3.4 Cut-off criteria

In the assessment, all available data from the production process are considered, i.e. all raw materials used, utilized thermal energy, and electric power consumption using the best available LCI datasets. Thus material and energy flows contributing less than 1 % of mass or energy are also considered. No flows were cut - off that are known to have significant environmental impacts.

3.5 Background data

Background data used, comes from ecoinvent database version

3.11 from 2024. It has been selected to be representative of the geographic location. The background data for A1-A3

heat and electricity was listed: electricity, GWP = 0.057 kg CO₂-eq/MJ and heat, GWP = 0.278 kg CO₂-eq/kWh.

3.6 Data quality

Primary data refer to the year 2024. The data of the foreground processes is based on input-output analyses at the Belgian production site. The primary data collection was done thoroughly, all relevant flows were considered.

3.7 Period under review

The period under review for primary data is 2024.

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: Global

3.9 Allocation

The overall production of UNILIN comprises further products besides the products considered in this study. Data for thermal and electrical energy as well as auxiliary material refer to the declared product. During data collection the allocation is done via mass (kg). Specific information on allocation within the background data is given in the ecoinvent documentation.

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. Background database is as described in chapter 3.5.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	0.2	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO₂.

The following technical information is a basis for the declared modules. Scenarios correspond to the worldwide production and consumption.

Transport to the construction site (A4)

Product shipping stage A4 represents weighted average based on worldwide sales.

Name	Value	Unit
Transport distance - truck	798	km
Transport distance - ship	360	km

Installation in the building (A5)

Name	Value	Unit
Product installation losses	3	%
Product packaging	0.458	kg

Maintenance (B2)

Maintenance scenario is:

- 1 vacuum cleaning per week,
- 1 wet cleaning (water and detergent) per month

Name	Value	Unit
Water consumption	1.33	kg/m ² /year
Detergent	0.0133	kg/m ² /year
Electricity consumption (European mix)	0.54	kWh/m ² /year

Reference service life

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

End of Life (C1-C4)

Name	Value	Unit
Recycling	6.5	kg
Energy recovery	6.5	kg
Landfilling	6.5	kg

Energy recovery from product waste is assumed in a municipal waste incineration plant with energy efficiency > 60 %. In line with EN 15804, this is therefore declared as part of module C3.

5. LCA: Results

The results refer to LVT thickness of 4 +1 mm (6.5kg/m²). The information on maintenance is declared per year.

1. Scenario 0: 100 % recycling (C3, C4 & D)
2. Scenario 1: 100 % landfill (C3/1, C4/1 & D/1)
3. Scenario 2: 100 % energy recovery from waste (C3/2, C4/2 & D/2)

Luxury Vinyl Floor Coverings are available in different thicknesses. In order to enable the user of the EPD to calculate the results for different thicknesses and use classes, conversion tables were included under the results of the standard declared product (thickness 4+1 mm). For A1-A3, A4, A5, B2, C3 and D the LCA results of the declared product (thickness 4+1 mm) can be multiplied by the factors in the conversion tables to get the product impact for the additional product group.

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	X	X	MND	X	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m² LVT flooring with floating installation

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2
GWP-total	kg CO ₂ eq	8.08E+00	1.06E+00	1.05E+00	6.52E-02	0	6.07E-02	4.28E-02	0	8.13E+00	0	4.35E-01	0	-7.28E+00	2.93E-02	-2.83E+00
GWP-fossil	kg CO ₂ eq	8.7E+00	1.06E+00	3.03E-01	6.19E-02	0	6.07E-02	4.26E-02	0	8.12E+00	0	4.35E-01	0	-7.27E+00	3.02E-02	-2.82E+00
GWP-biogenic	kg CO ₂ eq	-6.56E-01	2.25E-04	7.44E-01	1.23E-04	0	1.3E-05	9.81E-05	0	1.43E-03	0	2.55E-05	0	-7.74E-03	-7.49E-04	-3.54E-03
GWP-luluc	kg CO ₂ eq	3.47E-02	3.65E-04	1.07E-03	3.24E-03	0	2.06E-05	1.27E-04	0	4E-04	0	1.56E-05	0	-5.39E-03	-1.75E-04	-3.52E-03
ODP	kg CFC11 eq	2.92E-06	5.52E-10	8.77E-08	2.62E-10	0	3.19E-11	3.73E-11	0	8.64E-09	0	6.13E-11	0	-2.89E-06	1.12E-07	1.11E-07
AP	mol H ⁺ eq	3E-02	2.97E-03	1.04E-03	3.43E-04	0	1.3E-04	2.12E-04	0	3.23E-03	0	4.45E-04	0	-2.44E-02	1.34E-04	-8.37E-03
EP-freshwater	kg P eq	2.48E-03	7.25E-05	8.07E-05	3.02E-05	0	4.21E-06	3.92E-05	0	2.86E-04	0	5.28E-06	0	-2.1E-03	9.06E-06	-7.35E-04
EP-marine	kg N eq	6.89E-03	7.21E-04	2.7E-04	9.84E-05	0	3.14E-05	3.74E-05	0	1.12E-03	0	2.5E-03	0	-5.01E-03	-2.89E-06	-1.83E-03
EP-terrestrial	mol N eq	6.43E-02	7.84E-03	2.36E-03	6.96E-04	0	3.39E-04	3.21E-04	0	9.48E-03	0	1.98E-03	0	-4.95E-02	1.19E-04	-1.84E-02
POCP	kg NMVOC eq	3.42E-02	4.08E-03	1.21E-03	2.07E-04	0	2.07E-04	1.03E-04	0	3.32E-03	0	8.09E-04	0	-2.96E-02	3E-04	-6.97E-03
ADPE	kg Sb eq	1.27E-04	3.66E-06	3.95E-06	4.89E-07	0	2.13E-07	9.44E-08	0	7.15E-06	0	1.44E-07	0	-8.52E-05	1.59E-06	-1.35E-06
ADPF	MJ	2.19E+02	1.5E+01	7.12E+00	8.46E-01	0	8.62E-01	9.87E-01	0	9.19E+00	0	1.54E+00	0	-1.71E+02	1.8E+00	-3.92E+01
WDP	m ³ world eq deprived	4.96E+00	5.92E-02	1.52E-01	6.92E-02	0	3.44E-03	9.52E-03	0	4.69E-01	0	-3.35E-02	0	-4.36E+00	6.72E-02	-1.73E-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 LVT flooring with floating installation

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2
PERE	MJ	1.31E+01	2.44E-01	6.85E-01	2.29E-01	0	1.42E-02	2.25E-01	0	1.25E+00	0	3.96E-02	0	-7.27E+00	2.32E-01	-2.5E+00
PERM	MJ	3.35E+00	0	-3.93E+00	0	0	0	0	0	0	0	0	0	5.07E-01	5.07E-01	5.08E-01
PERT	MJ	1.65E+01	2.44E-01	-3.24E+00	2.29E-01	0	1.42E-02	2.25E-01	0	1.25E+00	0	3.96E-02	0	-6.76E+00	7.39E-01	-1.99E+00
PENRE	MJ	1.49E+02	1.5E+01	7.13E+00	7.4E-01	0	8.62E-01	9.87E-01	0	7.84E+01	0	1.54E+00	0	-1.71E+02	1.8E+00	-3.92E+01

PENRM	MJ	6.86E+01	0	-5.58E-02	1.09E-01	0	0	-6.92E+01	0	-6.92E+01	0	0	0	-1.58E-02	-1.58E-02	-1.59E-02
PENRT	MJ	2.18E+02	1.5E+01	7.08E+00	8.49E-01	0	8.62E-01	-6.83E+01	0	9.19E+00	0	1.54E+00	0	-1.71E+02	1.78E+00	-3.92E+01
SM	kg	5.25E-01	0	1.57E-02	0	0	0	0	0	0	0	0	0	6.42E+00	-7.9E-02	-7.9E-02
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m ³	1.28E-01	1.88E-03	3.9E-03	1.84E-03	0	1.09E-04	6.14E-04	0	2.02E-01	0	-2.92E-02	0	-1.13E-01	1.56E-03	-8.02E-03

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 LVT flooring with floating installation

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2
HWD	kg	4.51E-02	4.61E-04	3.37E-03	4.89E-05	0	2.69E-05	3.34E-05	0	5.23E-01	0	1.52E-04	0	-1.37E-02	-1.46E-04	-1.09E-03
NHWD	kg	4.69E+00	8.79E-01	1.95E-01	5.69E-02	0	5.15E-02	1.36E-02	0	1.14E+00	0	6.52E+00	0	-3.87E+00	2.58E-02	-1.31E+00
RWD	kg	6.01E-04	4.4E-06	1.88E-05	2.11E-06	0	2.57E-07	7.24E-06	0	1.94E-05	0	5.58E-07	0	-1.81E-04	1.63E-06	-4.97E-05
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	1.93E-01	0	4.78E-01	0	0	0	6.5E+00	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EEE	MJ	1.04E-01	0	2.85E-01	0	0	0	0	0	7.61E+00	0	0	0	0	0	0
EET	MJ	2.18E-01	0	5.73E-01	0	0	0	0	0	1.77E+01	0	0	0	0	0	0

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 LVT flooring with floating installation

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2
PM	Disease incidence	2.61E-07	7.81E-08	1.06E-08	3.23E-09	0	4.55E-09	7.3E-10	0	2.4E-08	0	1.06E-08	0	-2.14E-07	3.41E-10	-7.48E-08
IR	kBq U235 eq	2.43E+00	1.79E-02	7.58E-02	8.57E-03	0	1.04E-03	2.82E-02	0	7.66E-02	0	2.43E-03	0	-7E-01	5.8E-03	-2.05E-01
ETP-fw	CTUe	4.24E+01	1.99E+00	1.45E+00	2.77E-01	0	1.16E-01	9.43E-02	0	4.03E+02	0	4.07E+01	0	-4.16E+01	4.22E-01	-3.89E+00
HTP-c	CTUh	9.21E-09	1.78E-10	2.96E-10	1.86E-11	0	1.01E-11	6.22E-12	0	1.78E-09	0	1.67E-11	0	-8.77E-09	1.47E-10	-2.16E-10
HTP-nc	CTUh	9.34E-08	9.28E-09	3.43E-09	7.89E-10	0	5.41E-10	2.95E-10	0	2.29E-08	0	1.31E-09	0	-6.29E-08	6.36E-10	-1.02E-08
SQP	SQP	3.94E+01	8.83E+00	2.23E+00	4E-01	0	5.17E-01	1.42E-01	0	3.42E+00	0	3.69E+00	0	-1.73E+01	1.32E+00	-1.92E+00

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

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.

Extrapolation table - 5+1mm

Rigid 5 mm pad attached

Indicator	A1-A3	A4	A5	B2	C2	C3	C3/2	C4/1	D	D/1	D/2
GWP-total	1,27	1,26	1,03	1,00	1,22	1,22	1,23	1,22	1,22	2,27	1,23
GWP - fossil	1,24	1,26	1,23	1,00	1,22	1,22	1,23	1,22	1,22	2,23	1,23
GWP - biogenic	0,91	1,26	0,94	1,00	1,22	1,22	1,24	1,22	1,19	0,93	1,17
GWP- luluc	1,31	1,27	1,30	1,00	1,22	1,22	1,24	1,22	1,21	0,80	1,22
ODP	1,25	1,25	1,25	1,00	1,22	1,22	1,24	1,22	1,22	1,21	0,85
AP	1,23	1,40	1,23	1,00	1,22	1,22	1,24	1,22	1,22	1,93	1,23
EP-freshwater	1,23	1,25	1,21	1,00	1,22	1,22	1,24	1,22	1,22	2,18	1,23
EP-marine	1,23	1,41	1,20	1,00	1,22	1,22	1,24	1,22	1,22	-8,13	1,22
EP - terrestrial	1,23	1,41	1,22	1,00	1,22	1,22	1,24	1,22	1,22	3,19	1,22
POCP	1,24	1,33	1,23	1,00	1,22	1,22	1,24	1,22	1,22	1,47	1,23
ADPE	1,18	1,25	1,18	1,00	1,22	1,22	1,24	1,22	1,22	1,23	1,25
ADPF	1,24	1,26	1,24	1,00	1,22	1,22	1,24	1,22	1,22	1,45	1,23
WDP	1,24	1,25	1,23	1,00	1,22	1,22	1,24	1,22	1,22	1,28	1,22
PERE	1,64	1,25	0,99	1,00	1,22	1,22	1,24	1,22	1,22	1,34	1,23
PERM	0,84	1,00	0,91	1,00	1,00	1,00	1,00	1,00	0,99	0,99	0,99
PERT	1,48	1,25	0,90	1,00	1,22	1,22	1,24	1,22	1,24	1,10	1,29
PENRE	1,24	1,26	1,23	1,00	1,22	1,22	1,24	1,22	1,22	1,45	1,23
PENRM	1,25	1,00	1,10	1,00	1,00	1,25	1,25	1,00	0,89	1,13	1,13
PENRT	1,24	1,26	1,24	1,00	1,22	1,25	1,24	1,22	1,22	1,45	1,23
SM	1,13	1,00	1,13	1,00	1,00	1,00	1,00	1,00	1,22	1,42	1,42
RSF	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
NRSF	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
FW	1,24	1,25	1,24	1,00	1,22	1,22	1,24	1,22	1,22	1,32	1,22
HWD	1,22	1,25	1,05	1,00	1,22	1,22	1,24	1,22	1,22	0,57	1,15
NHWD	1,22	1,25	1,19	1,00	1,22	1,22	1,24	1,22	1,22	1,76	1,23
RWD	1,23	1,25	1,22	1,00	1,22	1,22	1,24	1,22	1,22	1,55	1,23
CRU	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
MFR	1,22	1,00	1,07	1,00	1,00	1,22	1,00	1,00	1,00	1,00	1,00
MER	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
EEE	1,22	1,00	0,93	1,00	1,00	1,00	1,24	1,00	1,00	1,00	1,00
EET	1,22	1,00	0,93	1,00	1,00	1,00	1,24	1,00	1,00	1,00	1,00
PM	1,25	1,25	1,23	1,00	1,22	1,22	1,24	1,22	1,22	4,50	1,22
IR	1,23	1,25	1,22	1,00	1,22	1,22	1,24	1,22	1,22	1,60	1,23
ETF-fw	1,24	1,25	1,21	1,00	1,22	1,22	1,24	1,22	1,22	1,43	1,22
HTP-c	1,27	1,26	1,22	1,00	1,22	1,22	1,24	1,22	1,22	1,26	1,22
HTP-nc	1,19	1,25	1,17	1,00	1,22	1,22	1,24	1,22	1,22	1,46	1,22
SQP	1,78	1,25	1,11	1,00	1,22	1,22	1,24	1,22	1,22	1,23	1,25

6. LCA: Interpretation

Figure 1 (Indicator results of LVT floor covering over its life cycle (Scenario 0: Recycling at the end-of-life))

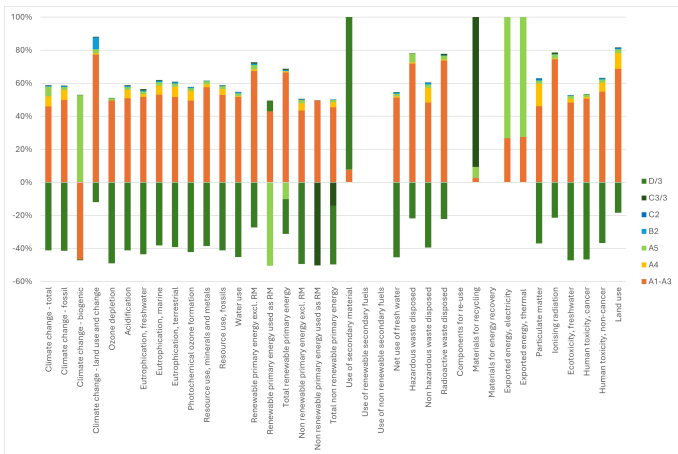


Figure 2 (Indicator results of LVT floor covering over its life cycle (Scenario 2: Landfill at the end-of-life))

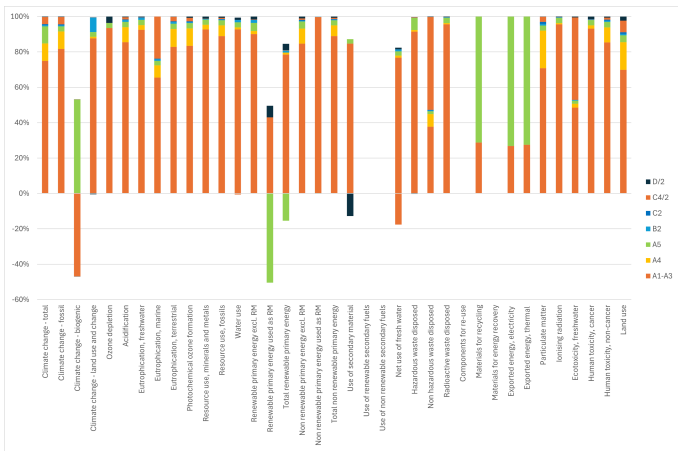


Figure 3 (Indicator results of LVT floor covering over its life cycle (Scenario 1: Recycling at the end-of-life))

7. Requisite evidence

7.1 Formaldehyde emissions

Determination of the formaldehyde emissions of a LVT flooring according to EN 16516 and evaluation according to different labels. – Eurofins Product Testing Denmark A/S - Smedskovvej 38 8464 Galten Denmark Test Report nr 392-2025- 00324501_A_EN 'Unilin LVT Rigid Click Pad 5+1mm CL33 Extra Matt'.

Name	Value	Unit
Formaldehyde CAS nr. 50-00-0	<3	µg/m ³

7.2 VOC emissions

8. References

IBU

Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V., Version 2.0,

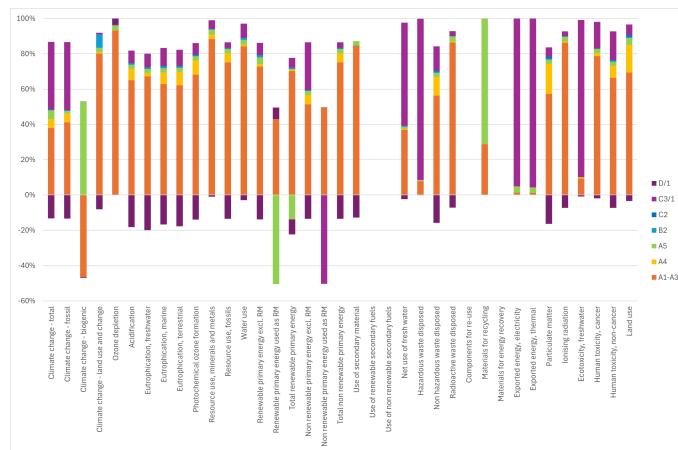
Berlin: Institut Bauen und Umwelt e.V., 2021 www.ibu.-epd.com

EN 15804

EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

EN ISO 14044

cycle (Scenario 2: Energy recovery at the end-of-life)



In all scenarios, the majority of environmental impacts arise during production (modules A1-A3). Transport to the construction site has a comparatively minor effect. Maintenance (module B2) is presented for 1 year of product use, so its impact can be significant over the reference service life, depending on the considered indicator.

In Scenario 0 (Recycling), recycling's benefits (module D) reduce the life cycle impact by about 40 %, largely due to avoided raw material extraction (Figure 1).

In Scenario 1 (Landfill), cradle-to-gate production dominates, with minimal environmental benefits from end-of-life disposal (less than 1 %) (Figure 2).

In Scenario 2 (Incineration), end-of-life processing (module C4/2) also has a notable impact, with around 10 % of the life cycle impacts linked to energy recovery, substituting natural gas and electricity (Figure 3).

Determination of the VOC emissions of a flexible LVT flooring according to EN 16516 and evaluation according to different labels. – Eurofins Product Testing Denmark A/S - Smedskovvej 38 8464 Galten Denmark Test Report nr 392-2025- 00324501_A_EN 'Unilin LVT Rigid Click Pad 5+1 mm CL33 Extra Matt'.

- Compliant with AgBB-Scheme 2021
- Compliant with the French VOC-Regulation: A+

Environmental management - Life cycle assessment - Requirements and guidelines (ISO 14044:2006); German and English version

ISO 14025

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

ISO 14040

ISO 14040:2006, Environmental management - Life cycle

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CEN/TR 15941

Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data; German version CEN/TR 15941

EN 16511:2023+A1:2025 Modular mechanical locked floor coverings (MMF) - Specification, requirements and test method for multilayer modular panels for floating installation

ISO 16000-3:2011

ISO 16000-3:2011 – Indoor air – part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air – Active sampling method.

AgBB evaluation scheme 2021

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ISO 16000-9:2006

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

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Resilient, textile, laminate and modular multilayer floorcoverings - Essential characteristics

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PCR Part A

Product Category Rules for Building-Related Products and Services. Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report according to EN 15804+A2:2019, Version 1.4. Berlin: Institut Bauen und Umwelt e.V. (eds.), 2024.

PCR Part B

Product Category Rules for Building-Related Products and Services. Part B: Requirements on the EPD for Floor coverings.

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List of Substances of Very High Concern (SVHC). Candidate for Authorisation (ECHA Candidate List), dated 27.06.2024, published in accordance with Article 59(10) of the REACH Regulation. Helsinki: European Chemicals Agency.

BBSR:

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EWG-94/3/EC

Commission Decision of 20 December 1993 establishing a list of wastes pursuant to Article 1a of Council Directive

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EN 16810:2017 Resilient, textile and laminate floor coverings - Environmental product declarations - Product category rules

Regulation (EU) No. 305/2011 (CPR)

Ordinance on Biocide Products No. 528/2012

ISO 9001:2015

ISO 9001:2015 Quality management systems — Requirements

ISO 14001:2015

ISO 14001:2015 Environmental management systems — Requirements with guidance for use

EN 13501-1

Standard for fire classification of construction materials

European Waste Code (EWC)

Ecoinvent database version 3.11

EN 16516:2017

Construction products: Assessment of release of dangerous substances - Determination of emissions into indoor air

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