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-20250275-IBI1-EN
Issue date	20/06/2025
Valid to	19/06/2030

Dryback Luxury Vinyl Tiles (LVT)

Unilin B.V. Division Flooring

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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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-20250275-IBI1-EN

This declaration is based on the product category rules:

Floor coverings, 01/08/2021
(PCR checked and approved by the SVR)

Issue date

20/06/2025

Valid to

19/06/2030

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

Dryback Luxury Vinyl Tiles (LVT)

Owner of the declaration

Unilin BV, division flooring
Ooigemstraat 3
8710 Wielsbeke
Belgium

Declared product / declared unit

1 m² of floor between 2- 2,5 mm thickness dryback PVC Luxury Vinyl Tiles (LVT) floor covering

Scope:

In this EPD flexible dryback Luxury Vinyl Tiles (LVT) floor coverings, between 2 and 2,5 mm, according to EN 16810:2017 Resilient, textile and laminate floor coverings 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 following categories and brands:
Dryback products of 2,5mm thickness with 0,55 mm wearlayer:

- Moduleo Roots 55
- Moduleo Moods
- Design Floors Ultimo
- Design Floors Divino
- Vitality Essential
- Unilin LVT Flex Dryback 2,5mm/0,55mm

Dryback products of 2,35mm thickness with 0,4 mm wearlayer:

- Moduleo Roots 40
- Design Floors Electo
- Unilin LVT Flex Dryback 2,35mm/0,4mm

Dryback products of 2,00mm thickness with 0,30 mm wearlayer:

- Design Floors Primero
- Moduleo Urban Living
- Unilin LVT Flex Dryback 2,00mm/0,3mm

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturerinformation, 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.
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

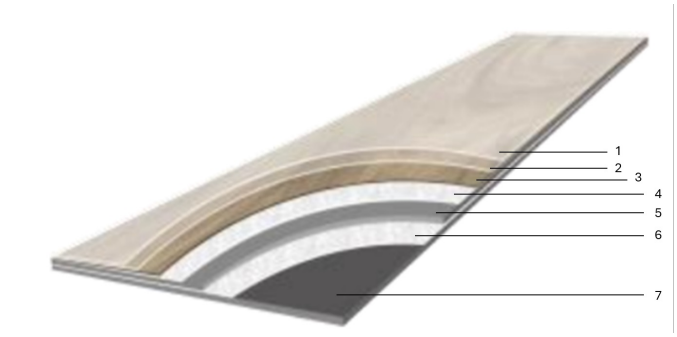
Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

Mr Olivier Muller,
(Independent verifier)

2. Product

2.1 Product description/Product definition

Flexible vinyl floor coverings are made up of several layers. On the top side, there is a PVC decor layer (3) bonded to a glass fiber (4); topped with a transparent PVC wear-resistant contact surface coated with a PU lacquer for a mat aspect with an excellent stain and friction resistance (1+2). On the back side there is a core layer (5-7) made of 2 flexible PVC layers reinforced with unwoven glassfiber. (6) These layers are manufactured and laminated together with the other layers at Unilin's LVT plant in the Avelgem facility. The decorative PVC layer of vinyl floorcovering can be printed with any design and gives the floor its individual appearance.



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 groups (2,5 mm/2,35 mm/2,0 mm) covers the use class 33 (heavy commercial use), class 32 (moderate commercial use), class 31 (light commercial use), respectively.

2.3 Technical Data

The technical specifications of the products within the scope of the EPD shall be listed, including the reference to the test methods/test standards for each specification.

For products with CE marking, the technical specifications must be specified in accordance with information in the declaration of performance. The properties relevant to the product should be specified in the table below. If no information is given for properties, an explanation must be given in the background report to the EPD as to why the property is not relevant to the product.

Constructional data

Name	Value	Unit
Product minimum thickness	2	mm
Product maximum thickness	2,5	mm
Product minimum mass	3360	g/m²
Product maximum mass	4140	g/m²
Product Form	Tiles and planks	-

- 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 *EN16810:2017 Resilient, textile and laminate floorcoverings*. 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)

- 632 x 159 x 2,5 mm
- 1320 x 196 x 2,5 mm
- 1498 x 214 x 2,5 mm
- 493 x 493 x 2,5 mm
- 659 x 329 X 2,5 mm
- 986 x 493 x 2,5 mm
- 1320 x 196 x 2,35 mm
- 659 x 329 x 2,35mm
- 1320 x 196 x 2,0 mm
- 988 x 163 x 2,0 mm
- 659 x 329 x 2,0mm

2.5 Base materials/Ancillary materials

The product group has the following composition:

Name	Value	Unit
Mineral filler	47	%
PVC	34	%
Plasticizer & stabilizers	15	%
Others	4	%

This product contains substances listed in the C*andidate List of Substances of Very High Concern* for Authorization *REACH* (date: 27.06.2024) 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 dryback flooring is produced by calendering and laminating the different parts together. The material efficiency is 98% as all production waste are 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 flexible dryback LVT floor coverings are generally installed using a floor adhesive. Another installation option is being adhered to the looselaid underlay Flexpro. Installation off-cuts 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 a controlled origin. The pallets can be re-used (Euro pallets) or recycled as wood category 03 01 05 according to the *European Waste Catalogue*. The pallets are protected using a stretch film and PET straps which are both recyclable.

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 wearlayer.

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 stateof knowledge.

2.12 Reference service life
The *BBSR* gives a general useful life of 20 years for floor coverings of component group 352.711 (Linoleum, Laminat,PVC, Kunststoff Parkett, Kork, Kautschuk, Sporthallenbeläge). Due to the comparatively high resistance of the LVT floorings, Unilin grants an additional warranty (based on the floor owner 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.

Depending on the application based on *EN ISO 10874*, the technical service life recommended by the manufacturer and the anticipated strain on the floor by customers, the case specific useful life can be established. The effects of Module B2 need to be calculated on the basis of this useful life in order to obtain the overall environmental impacts.

2.13 Extraordinary effects
Fire
The reaction to fire is determined according to *EN 13501-1*. The class for LVT floors produced by UNILIN B.V. Division Flooring, in combination with all underlays of the sales program is Bfl-s1 (Combustible materials – very limited contribution to fire).

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 the flooring 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 1 or 2 compound 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
End of life dryback LVT floor coverings shall be thermally valorized if possible.

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 of in any regulated municipal waste collection point in a 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 floor with 2,5 mm dryback PVC Luxury Vinyl Tiles (LVT) floor covering

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	m^2
Grammage	4.14	kg/m^2
Layer thickness	0.0025	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 modules 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 sales data for global 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 includes 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 postconsumer waste to waste processing. End of life scenarios are declared for:

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

Module D includes potential benefits from all net flows given in module A5 and C3/C4 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 foreach scenario separately (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

Used background data comes from *ecoinvent* database version 3.11 from 2025. It has been selected to be representative of processes geographic location. The background data for A1-A3 heat and electricity was listed: electricity, GWP = 0.057 kg CO_2-eq/MJ and heat, GWP = 0.278 kg CO_2-eq/kWh.

3.6 Data quality

Primary data refer to the year 2023. 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 2023.

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	0.196	kg C

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

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

Transport to the construction site (A4)

Name	Value	Unit
Transport distance by truck	740	km
Transport distance by boat	714	km
Capacity utilisation (including empty runs)	36	%

Installation in the building (A5)

Name	Value	Unit
Auxiliary	0.25	kg
Product installation losses	3	%
Product packaging waste	0.44	kg

Maintenance (B2)

Name	Value	Unit
Water consumption	1.33	kg/m²/year
Detergent	0.0133	kg/m²/year
Electricity consumption (Global mix)	0.0103	kWh/m²/year

Reference service life

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

End of Life (C1-C4)

Name	Value	Unit
Energy recovery from waste (Scenario 1)	4.14	kg
Landfilling (Scenario 2)	4.14	kg

Energy recovery from product waste is assumed in a municipal waste incineration plant with an energy efficiency of < 60%. In line with *EN 15804*, this is therefore declared as part of moduleC4.

5. LCA: Results

The results refer to LVT thickness of 2,5 mm (4.14kg/m²). The information on maintenance is declared per year.

1. Scenario 1: 100% energy recovery from waste (C4/1 &D/1)
2. Scenario 2: 100% landfill (C4/2 & D/2)

Dryback 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 2,5 mm). For A1-A3, A4, A5, B2, C3 and D the LCA results of the declared product (thickness 2,5 mm) can be multiplied by the factors in the conversion tables to get the product impact for the two additional product groups.

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	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m² Dryback Luxury Vinyl Tiles (LVT)

Parameter	Unit	A1-A3	A4	A5	B2	C2	C3	C4/1	C4/2	D/1	D/2
GWP-total	kg CO_2 eq	6.02E+00	6.25E-01	1.52E+00	2.55E-02	3.87E-02	0	5.32E+00	2.77E-01	-2.15E+00	-2.51E-01
GWP-fossil	kg CO_2 eq	6.65E+00	6.25E-01	7.83E-01	2.23E-02	3.86E-02	0	5.32E+00	2.77E-01	-2.15E+00	-2.5E-01
GWP-biogenic	kg CO_2 eq	-6.38E-01	1.32E-04	7.34E-01	5.16E-05	8.25E-06	0	9.51E-04	1.62E-05	-2.68E-03	-8.18E-04
GWP-luluc	kg CO_2 eq	1.38E-02	2.19E-04	7.71E-04	3.16E-03	1.31E-05	0	2.66E-04	9.95E-06	-2.57E-03	-3.47E-04
ODP	kg CFC11 eq	1.85E-06	3.24E-10	5.61E-08	2.1E-10	2.03E-11	0	5.74E-09	3.91E-11	-5.14E-08	-5.06E-08
AP	mol H^+ eq	7.29E-01	2.19E-03	2.41E-02	1.33E-04	8.29E-05	0	2.14E-03	2.84E-04	-6.52E-03	-8.62E-04
EP-freshwater	kg P eq	1.85E-03	4.23E-05	2.05E-04	1.01E-05	2.68E-06	0	1.9E-04	3.37E-06	-5.67E-04	-7.23E-05
EP-marine	kg N eq	2.91E-01	5.36E-04	9.13E-03	5.8E-05	2E-05	0	7.46E-04	1.59E-03	-1.41E-03	-1.94E-04
EP-terrestrial	mol N eq	2.05E+00	5.86E-03	6.55E-02	2.9E-04	2.16E-04	0	6.3E-03	1.26E-03	-1.41E-02	-1.83E-03
POCP	kg NMVOC eq	7.75E-01	2.71E-03	2.56E-02	8.65E-05	1.32E-04	0	2.21E-03	5.15E-04	-5.77E-03	-9.31E-04
ADPE	kg Sb eq	9.99E-05	2.12E-06	9.51E-06	2.46E-07	1.36E-07	0	4.75E-06	9.16E-08	-3.81E-06	-1.86E-06
ADPF	MJ	1.64E+02	8.81E+00	1.7E+01	3.16E-01	5.49E-01	0	6.1E+00	9.79E-01	-3.23E+01	-5.01E+00
WDP	m^3 world eq deprived	3.66E+00	3.45E-02	3.79E-01	6.31E-02	2.19E-03	0	3.11E-01	-2.13E-02	-2.64E-01	-1.04E-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 Dryback Luxury Vinyl Tiles (LVT)

Parameter	Unit	A1-A3	A4	A5	B2	C2	C3	C4/1	C4/2	D/1	D/2
PERE	MJ	1.25E+01	1.42E-01	1.07E+00	1.45E-01	9.06E-03	0	8.33E-01	2.52E-02	-2.2E+00	-3.86E-01
PERM	MJ	4.74E+00	0	-4.55E+00	0	0	0	0	0	3.58E-01	3.58E-01
PERT	MJ	1.72E+01	1.42E-01	-3.48E+00	1.45E-01	9.06E-03	0	8.33E-01	2.52E-02	-1.84E+00	-2.83E-02
PENRE	MJ	1.1E+02	8.81E+00	1.7E+01	2.11E-01	5.49E-01	0	6.1E+00	9.79E-01	-3.23E+01	-5.01E+00
PENRM	MJ	5.3E+01	0	-5.02E-02	1.09E-01	0	0	-5.24E+01	0	-1.44E-02	-1.44E-02
PENRT	MJ	1.63E+02	8.81E+00	1.7E+01	3.2E-01	5.49E-01	0	-4.63E+01	9.79E-01	-3.23E+01	-5.02E+00
SM	kg	2.51E-01	0	7.53E-03	0	0	0	0	0	2.02E-01	2.02E-01
RSF	MJ	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0
FW	m^3	9.63E-02	1.09E-03	9.79E-03	1.6E-03	6.94E-05	0	1.34E-01	-1.86E-02	-9.26E-03	-2.89E-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 Dryback Luxury Vinyl Tiles (LVT)

Parameter	Unit	A1-A3	A4	A5	B2	C2	C3	C4/1	C4/2	D/1	D/2
HWD	kg	3.71E-02	2.68E-04	3.7E-03	2.14E-05	1.71E-05	0	3.48E-01	9.71E-05	-1.2E-03	-5.73E-04
NHWD	kg	3.98E+00	5.07E-01	4.45E-01	1.89E-02	3.28E-02	0	7.59E-01	4.15E+00	-1.01E+00	-1.16E-01
RWD	kg	3.75E-04	2.55E-06	2.45E-05	7.51E-07	1.64E-07	0	1.29E-05	3.55E-07	-4.02E-05	-6.04E-06
CRU	kg	0	0	0	0	0	0	0	0	0	0
MFR	kg	3.32E-01	0	3.85E-01	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0
EEE	MJ	9.41E-02	ND	3.03E-01	ND	ND	0	5.06E+00	ND	ND	ND
EET	MJ	1.94E-01	ND	6.08E-01	ND	ND	0	1.18E+01	ND	ND	ND

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 Dryback Luxury Vinyl Tiles (LVT)

Parameter	Unit	A1-A3	A4	A5	B2	C2	C3	C4/1	C4/2	D/1	D/2
PM	Disease incidence	3.94E-06	3.45E-06	4.54E-08	1.29E-07	1.38E-09	0	1.59E-08	6.74E-09	-5.82E-08	-8.24E-09
IR	kBq U235 eq	2.09E+00	9.27E-01	1.04E-02	9.73E-02	2.99E-03	0	5.09E-02	1.54E-03	-1.64E-01	-2.38E-02
ETP-fw	CTUe	3.4E+02	4.45E+00	1.16E+00	4.9E+00	1.71E-01	0	2.68E+02	2.59E+01	-3.99E+00	-1.12E+00
HTP-c	CTUh	1.44E-08	8.3E-10	1.06E-10	3.49E-10	1.21E-11	0	1.18E-09	1.07E-11	-4.26E-10	-1.84E-10
HTP-nc	CTUh	1.77E-07	1.78E-08	5.39E-09	3.33E-08	4.12E-10	0	1.52E-08	8.34E-10	-9.07E-09	-1.88E-09
SQP	SQP	8.17E+01	4.01E+01	5.09E+00	3.32E+00	3.07E-01	0	2.27E+00	2.35E+00	-3.24E+00	-1.09E+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 - 2,35mm/0,4mm wearlayer

Indicator	A1-A3	A4	A5	B2	C2	C4/1	C4/2	D/1	D/2
GWP-total	0,91	0,99	0,99	1,00	0,96	0,93	0,95	0,92	0,98
GWP - fossil	0,92	0,99	0,98	1,00	0,96	0,93	0,95	0,92	0,98
GWP - biogenic	1,01	0,97	1,00	1,00	0,96	0,91	0,95	0,94	0,99
GWP- luluc	0,97	1,03	0,99	1,00	0,96	0,91	0,95	0,92	0,99
ODP	0,90	0,96	0,91	1,00	0,96	0,91	0,95	0,96	0,96
AP	0,99	1,60	1,00	1,00	0,96	0,91	0,95	0,92	0,98
EP-freshwater	0,92	0,95	0,98	1,00	0,96	0,91	0,95	0,92	0,98
EP-marine	0,99	1,62	1,00	1,00	0,96	0,91	0,95	0,92	0,98
EP - terrestrial	0,99	1,63	1,00	1,00	0,96	0,91	0,95	0,92	0,98
POCP	0,99	1,33	1,00	1,00	0,96	0,91	0,95	0,92	0,97
ADPE	0,94	0,93	0,98	1,00	0,96	0,91	0,95	0,94	0,96
ADPF	0,92	0,98	0,98	1,00	0,96	0,91	0,95	0,92	0,97
WDP	0,91	0,95	0,98	1,00	0,96	0,91	0,95	0,93	0,97
PERE	0,94	0,94	0,98	1,00	0,96	0,91	0,95	0,93	0,98
PERM	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
PERT	0,96	0,94	1,01	1,00	0,96	0,91	0,95	0,91	0,78
PENRE	0,93	0,98	0,98	1,00	0,96	0,91	0,95	0,92	0,97
PENRM	0,90	1,00	1,00	1,00	1,00	0,91	1,00	1,00	1,00
PENRT	0,92	0,98	0,98	1,00	0,96	0,91	0,95	0,92	0,97
SM	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,98	0,98
RSF	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
FW	0,91	0,94	0,98	1,00	0,96	0,91	0,95	0,93	0,97
HWD	0,94	0,94	0,98	1,00	0,96	0,91	0,95	0,95	0,98
NHWD	0,94	0,91	0,98	1,00	0,96	0,91	0,95	0,92	0,98
RWD	0,93	0,93	0,97	1,00	0,96	0,91	0,95	0,92	0,97
CRU	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
MFR	0,96	1,00	0,98	1,00	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
EEE	0,95	1,00	1,00	1,00	1,00	0,91	1,00	1,00	1,00
EET	0,95	1,00	1,00	1,00	1,00	0,91	1,00	1,00	1,00
PM	0,91	0,01	2,84	0,01	2,00	0,92	0,95	0,92	0,98
IR	0,67	0,01	9,14	0,03	0,21	0,91	0,95	0,92	0,98
ETF-fw	0,10	0,25	4,15	0,03	0,41	0,91	0,95	0,93	0,97
HTP-c	0,44	0,13	3,13	0,03	0,51	0,91	0,95	0,93	0,97
HTP-nc	0,39	0,28	6,14	0,01	0,80	0,91	0,95	0,92	0,97
SQP	0,68	0,12	0,64	0,09	1,03	0,91	0,95	0,94	0,99

Extrapolation table - 2,00mm/0,3mm wearlayer

Indicator	A1-A3	A4	A5	B2	C2	C4/1	C4/2	D/1	D/2
GWP-total	0,78	0,78	0,97	1,00	0,81	0,79	0,81	0,74	0,90
GWP - fossil	0,80	0,78	0,94	1,00	0,81	0,79	0,81	0,74	0,90
GWP - biogenic	1,02	0,78	1,00	1,00	0,81	0,78	0,81	0,77	0,97
GWP- luluc	0,93	0,78	0,96	1,00	0,81	0,78	0,81	0,71	0,95
ODP	0,76	0,78	0,76	1,00	0,81	0,78	0,81	0,81	0,81
AP	0,98	0,75	0,98	1,00	0,81	0,78	0,81	0,71	0,90
EP-freshwater	0,80	0,78	0,95	1,00	0,81	0,78	0,81	0,71	0,90
EP-marine	0,98	0,75	0,98	1,00	0,81	0,78	0,81	0,72	0,91
EP - terrestrial	0,98	0,75	0,98	1,00	0,81	0,78	0,81	0,72	0,91
POCP	0,98	0,77	0,98	1,00	0,81	0,78	0,81	0,74	0,88
ADPE	0,84	0,78	0,95	1,00	0,81	0,78	0,81	0,78	0,83
ADPF	0,79	0,78	0,94	1,00	0,81	0,78	0,81	0,75	0,88
WDP	0,78	0,78	0,94	1,00	0,81	0,78	0,81	0,75	0,85
PERE	0,84	0,78	0,94	1,00	0,81	0,78	0,81	0,72	0,93
PERM	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
PERT	0,88	0,78	1,02	1,00	0,81	0,78	0,81	0,67	0,01
PENRE	0,81	0,78	0,94	1,00	0,81	0,78	0,81	0,75	0,88
PENRM	0,77	1,00	1,00	1,00	1,00	0,77	1,00	1,00	1,00
PENRT	0,79	0,78	0,94	1,00	0,81	0,77	0,81	0,75	0,88
SM	0,92	1,00	0,92	1,00	1,00	1,00	1,00	0,89	0,89
RSF	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
FW	0,78	0,78	0,94	1,00	0,81	0,78	0,81	0,74	0,86
HWD	0,83	0,78	0,95	1,00	0,81	0,78	0,81	0,80	0,92
NHWD	0,86	0,78	0,95	1,00	0,81	0,78	0,81	0,71	0,90
RWD	0,81	0,78	0,91	1,00	0,81	0,78	0,81	0,71	0,88
CRU	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
MFR	0,86	1,00	0,94	1,00	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
EEE	0,83	1,00	1,00	1,00	1,00	0,78	1,00	1,00	1,00
EET	0,83	1,00	1,00	1,00	1,00	0,78	1,00	1,00	1,00
PM	0,90	0,01	2,80	0,01	1,70	0,78	0,81	0,72	0,92
IR	0,59	0,01	8,59	0,03	0,18	0,78	0,81	0,71	0,89
ETF-fw	0,09	0,20	4,02	0,03	0,35	0,78	0,81	0,75	0,87
HTP-c	0,38	0,10	2,86	0,03	0,43	0,78	0,81	0,78	0,85
HTP-nc	0,35	0,24	6,10	0,01	0,68	0,78	0,81	0,73	0,88
SQP	0,65	0,10	0,62	0,09	0,87	0,78	0,81	0,77	0,94

6. LCA: Interpretation

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

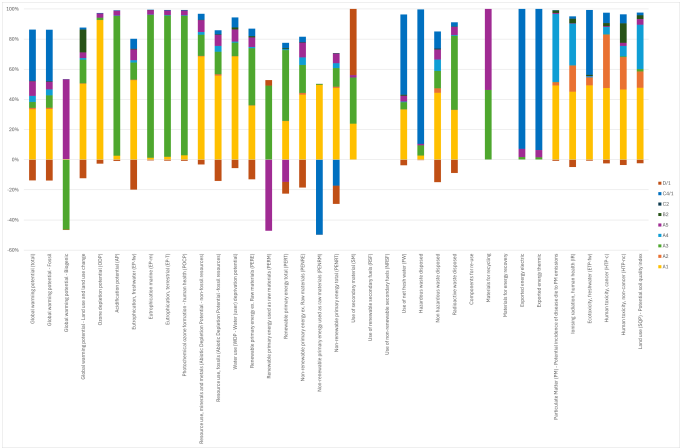
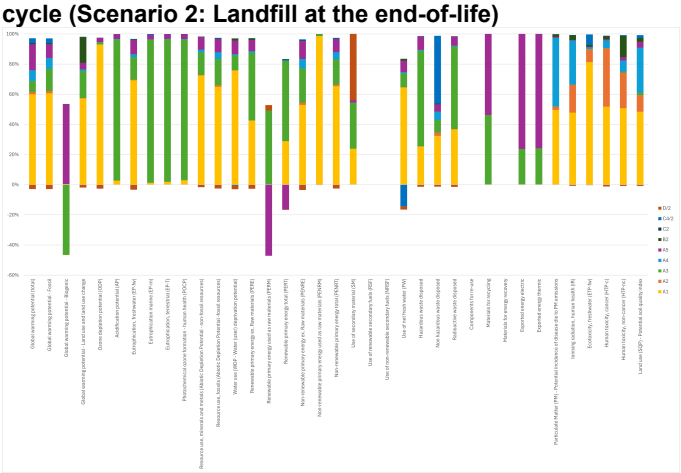


Figure 2 (Indicator results of LVT floor covering over its life cycle (Scenario 2: Landfill at the end-of-life)



In both 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 1 (Incineration), end-of-life processing (moduleC4/1) also has a notable impact, with around 10% of the life cycle impacts linked to energy recovery, substituting natural gas and electricity (Figure 1).
In Scenario 2 (Landfill), cradle-to-gate production dominates, with minimal environmental benefits from end-of-life disposal(less than 1%) (Figure 2).

7. Requisite evidence

7.1 Formaldehyde emissions

Determination of the formaldehyde emissions of a LVT flooring according to according to *EN 16516* and evaluation accordingto different labels. – Eurofins Product Testing Denmark A/S - Smedeskovvej 38 8464 Galten Denmark Test Report nr 392-2023-00576401_A_EN 'Unilin LVT Flex Dryback 2.5 mm - 0.55 mm'.

Name	Value	Unit
Formaldehyde CAS nr. 50-00-0	<3	µg/m³

7.2 VOC emissions on 2.5 mm flexible LVT Flooring

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 - Smedeskovvej 38 8464 Galten Denmark Test Report nr 392-2023- 00559101_A_EN_rev1 'Unilin LVT Flex Dryback 2.5 mm - 0.55mm'.

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

Name	Value	Unit
TVOC	6.4	µg/m³
Formaldehyde	<3	µg/m³
Acetaldehyde	<3	µg/m³
Toluene	<2	µg/m³
Tetrachloroethylene	<2	µg/m³
Ethylbenzene	<2	µg/m³
Xylene	<2	µg/m³
Styrene	<2	µg/m³
2-butoxyethanol	<2	µg/m³
1,2,4-Trimethylbenzene	<2	µg/m³
1,4-Dichlorobenzene	<2	µg/m³

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