

# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

|                          |                                      |
|--------------------------|--------------------------------------|
| Owner of the Declaration | Unilin bvba                          |
| Programme holder         | Institut Bauen und Umwelt e.V. (IBU) |
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| Valid to                 | 18/10/2023                           |

## Direct Pressure Laminate Floor Coverings UNILIN Division Flooring

[www.ibu-epd.com](http://www.ibu-epd.com) / <https://epd-online.com>



## 1. General Information

### UNILIN Division Flooring

**Programme holder**

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

**Declaration number**

EPD-UNI-20170035-IBD1-EN

**This Declaration is based on the Product Category Rules:**

Floor coverings, 07.2016  
 (PCR tested and approved by the SVR)

**Issue date**

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18/10/2023



Prof. Dr.-Ing. Horst J. Bossenmayer  
 (President of Institut Bauen und Umwelt e.V.)



Dr. Burkhard Lehmann  
 (Managing Director IBU)

### Direct Pressure Laminate floor coverings

**Owner of the Declaration**

UNILIN Division Flooring  
 Ooigemstraat 3  
 8710 Wielsbeke  
 Belgium

**Declared product / Declared unit**

1m<sup>2</sup> of DPL floor covering with a thickness of 7mm.

**Scope:**

The laminate floor covering described in this EPD has a thickness of 7 mm and meets the requirements of the EN14041:2006 and the use classes 31-34 according to /EN 13329/ and EN ISO 10874/. In order to enable the user of the EPD to calculate the LCA results for different thicknesses and use classes, the EPD contains the respective calculation rules.

The products are available under 4 brandnames: Unilin / Pergo / Quick-Step / Balterio.

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.

**Verification**

The CEN Norm /EN 15804/ serves as the core PCR

Independent verification of the declaration according to /ISO 14025/

internally  externally



Christina Bocher  
 (Independent verifier appointed by SVR)

## 2. Product

### 2.1 Product description / Product definition

DPL (Direct Pressure Laminate) floor coverings described in this EPD are produced by UNILIN division Flooring. The floor coverings meet the requirements of /EN 13329/.

DPL laminate floorings are made up of a number of layers. On the top side, there is a decor with a transparent, wear-resistant contact surface; in the middle, there is a core layer made of high density wood fibre and on the back side, there is a stabilizing layer to guarantee floor stability. The decorative paper of DPL floor covering can be printed with any design and gives the floor its individual appearance.

For placing on the market in the EU/EFTA (with the exception of Switzerland) the Regulation (EU) No 305/211 applies. The products need a Declaration of Performance under consideration of /EN14041:2006/ and all have a CE-marking.

### 2.2 Application

The laminate floor covering as described in this EPD is used as a floating modular flooring system for indoor

use and meets the requirements of the use classes: 31-34 according to /EN 13329/ and / EN ISO 10874/.

### 2.3 Technical Data

**Constructional data**

| Name                                     | Value      | Unit              |
|--|------------|-------------------|
| Grammage                                 | 6400       | g/m <sup>2</sup>  |
| Abrasion Class - /EN 13329/              | AC4        | -                 |
| Product Form                             | panel      | -                 |
| Thickness of the element - /EN 13329/    | 7          | mm                |
| Length of the surface layer - /EN 13329/ | 300 - 2500 | mm                |
| Width of the surface layer - /EN 13329/  | 90 - 600   | mm                |
| Density - /EN 323/                       | >900       | kg/m <sup>3</sup> |

### 2.4 Delivery status

Typical standard dimensions are as follows (length - width - thickness)

- 1200mm x 190mm x 7mm
- 1380mm x 156mm x 8mm

## 2.5 Base materials / Ancillary materials

The composition of a DPL floor covering in mass % is:

- 90-96 % High Density Fibre board (HDF)
- 2-4 % paper
- 4-6 % resin
- <1 % corundum

HDF (high density fibreboard)

The core board is an HDF board >850kg/m<sup>3</sup> composed of wood fibres and a thermosetting resin, mainly MUF (melamine-urea-formaldehyde) resin.

Paper

The renewable resource wood is the main raw material for paper production.

Resins

The used amino resins are melamine-formaldehyde (95%) and urea formaldehyde (5%) resins. Amino

resins are thermosetting resins that are cured using heat and pressure.

Corundum

Bauxite is the mineral resource of corundum. By using aluminium oxide (Al<sub>2</sub>O<sub>3</sub>) the surface layer of a laminate flooring obtains abrasion and wear resistance.

DPL floor coverings do not contain substances that are listed in the "Candidate List of Substances of Very High Concern for Authorisation" /REACH/.

### Factors for different thicknesses

DPL laminate 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 the factors in the following table can be used for the calculation. For A1-A3, A4, A5, B2, C3 and D the LCA results of the declared product (thickness 7 mm) in chapter 5 have to be multiplied with these factors.

| Parameter | Unit                                     | A1-A3 |        | A4            | A5            | B2            | C3   |        | D    |        |
|-----------|--|-------|--------|---------------|---------------|---------------|------|--------|------|--------|
|           |  | 8 mm  | 9.5 mm | 8 mm & 9.5 mm | 8 mm & 9.5 mm | 8 mm & 9.5 mm | 8 mm | 9.5 mm | 8 mm | 9.5 mm |
| GWP       | [kg CO <sub>2</sub> -eq.]                | 0.98  | 0.96   | 1.2           | 1.0           | 1.0           | 1.30 | 1.35   | 1.31 | 1.36   |
| ODP       | [kg CFC11-eq.]                           | 1.26  | 1.31   | 1.2           | 1.0           | 1.0           | -    | -      | 1.28 | 1.33   |
| AP        | [kg SO <sub>2</sub> -eq.]                | 1.26  | 1.31   | 1.2           | 1.0           | 1.0           | -    | -      | 1.30 | 1.35   |
| EP        | [kg PO <sub>4</sub> <sup>3-</sup> - eq.] | 1.34  | 1.41   | 1.2           | 1.0           | 1.0           | -    | -      | 1.23 | 1.28   |
| POCP      | [kg Ethen eq.]                           | 1.23  | 1.27   | 1.2           | 1.0           | 1.0           | -    | -      | 1.29 | 1.34   |
| ADPE      | [kg Sb eq.]                              | 1.42  | 1.50   | 1.2           | 1.0           | 1.0           | -    | -      | 1.28 | 1.33   |
| ADPF      | [MJ]                                     | 1.38  | 1.46   | 1.2           | 1.0           | 1.0           | -    | -      | 1.28 | 1.33   |
| PERT      | [MJ]                                     | 1.25  | 1.30   | 1.2           | 1.0           | 1.0           | -    | -      | 1.28 | 1.33   |
| PENRT     | [MJ]                                     | 1.37  | 1.44   | 1.2           | 1.0           | 1.0           | -    | -      | 1.28 | 1.33   |

**Figure 1:** Factors to get the results for 8 mm & 9.5 mm (weighted average of Belgian and Russian production)

| Parameter | Unit                                     | A1-A3                                 | A4   | A5   | B2   | C3   | D    |
|-----------|--|---------------------------------------|------|------|------|------|------|
|           |  | To get 12 mm, only Belgian production |      |      |      |      |      |
| GWP       | [kg CO <sub>2</sub> -eq.]                | 1.09                                  | 0.88 | 0.87 | 1.00 | 1.72 | 1.69 |
| ODP       | [kg CFC11-eq.]                           | 1.84                                  | 0.88 | 0.87 | 1.00 | -    | 1.75 |
| AP        | [kg SO <sub>2</sub> -eq.]                | 1.61                                  | 0.88 | 0.91 | 1.00 | -    | 1.80 |
| EP        | [kg PO <sub>4</sub> <sup>3-</sup> - eq.] | 1.87                                  | 0.88 | 0.87 | 1.00 | -    | 1.61 |
| POCP      | [kg Ethen eq.]                           | 1.62                                  | 0.88 | 0.88 | 1.00 | -    | 1.77 |
| ADPE      | [kg Sb eq.]                              | 1.99                                  | 0.88 | 0.94 | 1.00 | -    | 1.75 |
| ADPF      | [MJ]                                     | 1.98                                  | 0.88 | 0.90 | 1.00 | -    | 1.75 |
| PERT      | [MJ]                                     | 1.65                                  | 0.88 | 0.90 | 1.00 | -    | 1.75 |
| PENRT     | [MJ]                                     | 1.97                                  | 0.88 | 0.90 | 1.00 | -    | 1.75 |

**Figure 2:** Factors to get the results for 12 mm (Belgian production)

## 2.6 Manufacture

### Impregnation & Resin production:

The resin production is included in the LCA; it is produced by UNILIN bvba, division Flooring. The different components are mixed together and used to impregnate the different paper layers (overlay, décor and backing).

### Pressing:

The resin impregnated papers (overlay, décor and backing) are pressed under heat with the HDF core board in a single stage process. In this process the resin cures and the different layers are laminated together.

### Cutting and milling:

The pressed boards are cut to size and equipped with a tongue and-groove assembly system. Eventually the boards are provided with a bevel.

### Packaging:

The laminate floorings are unit-packed and edge-protected using ribbed cardboard and shrink-wrapped in foil.

Laminate floor coverings are intended for use as floor covering within a building. According to the area of application floor coverings are classified in use classes.

## 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 related waste water from the HDF production process is purified in a waste water treatment plant. The use of water in the DPL flooring production process is negligible. Where water is needed, it either evaporates or is re-used in the internal water loop.

Air: The constitutional valid regulations are observed. The emissions to air are far below the legally required thresholds.

Soil: There is no impact on soil.

## 2.8 Product processing/Installation

UNILIN Laminate 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 laminate floor coverings in order to achieve a levelling effect, thermal or acoustical insulation or protection against rising dampness.

## 2.9 Packaging

Packaging requirements according to /EN 13329/: Laminate floor coverings are delivered in packages designed to protect the corners, edges and surfaces of the product, under normal conditions of transport and handling. Laminate flooring is accordingly unit-packed and edge-protected using ribbed cardboard and shrink-wrapped in foil. Pallets are finally used for the delivery. The pallets can also be reused.

## 2.10 Condition of use

The substantial composition during the use phase refers to the composition during the manufacturing. The conditions of use are described in the producer's documentation.

## 2.11 Environment and health during use

Environmental protection: When the products are used as designated and according 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 DPL floor coverings. This is in line with the current state of knowledge.

## 2.12 Reference service life

The estimated service life of floor covering depends e.g. on the type of floor covering and the area of application, the users themselves and the maintenance of the product. Comparisons of different floor coverings are only allowed, if these parameters are considered in a consistent way. A minimum service life of 20 years can be assumed /BBSR/, technical service life can be considerably longer. The use stage is declared in this EPD for a one year usage.

Influences on ageing when applied in accordance with the rules of technology.

## 2.13 Extraordinary effects

### Fire

The reaction to fire is determined according to /EN 13501-1/. The class for laminate floors produced by UNILIN bvba-division Flooring, in combination with all underlays of the sales program is Cfl-s1. The higher classes 33 and 34 in the Pergo range are Bfl-s1.

### Fire protection

| Name                    | Value      |
|-------------------------|------------|
| Building material class | Cfl or Bfl |
| Smoke gas development   | s1         |
| Burning droplets        | -          |

### Water

In case of a leak or a flood where the flooring has been soaked for a longer period of time (days) the flooring will most probably be considered a total loss. In case of short or shorter time of exposure and after drying, no visible damage may be expected. If the water came under the floorcovering (floating installation) it may be necessary to unclick the panels and let them dry. The subfloor will most probably also be wet and should be given the time to come to equilibrium moisture content before re-installation of the dry panels.

### Mechanical destruction

Small or smaller damages in the flooring surface can be repaired by using coloured solvent-free melt waxes. In case of more severe damage the damaged panels can be replaced. The damaged panels go into the normal end-of-life treatment.

## 2.14 Re-use phase

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

## 2.15 Disposal

Post-installation and post-consumer flooring panels are considered as wood waste. The European Waste Code /EWC/ is 030105. It can be disposed in any regulated municipal waste collection point as wood waste.

## 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 homepages [www.quick-step.com](http://www.quick-step.com) or [www.pergo.com](http://www.pergo.com) or can be requested at [Unilin bvba division flooring](mailto:Unilin bvba division flooring) [www.unilin.com](http://www.unilin.com) or [info@unilin.com](mailto:info@unilin.com).

## 3. LCA: Calculation rules

### 3.1 Declared Unit

The declared unit is 1 m<sup>2</sup> laminate flooring with a thickness of 7 mm and a weight of 6.4 kg. It has the use class 32 as this is the most common product.

#### Declared unit

| Name   | Value | Unit              |
|--|-------|-------------------|
| Declared unit                                  | 1     | m <sup>2</sup>    |
| Grammage                                       | 6.4   | kg/m <sup>2</sup> |
| layer thickness                                | 0.007 | m                 |
| Conversion factor to 1 kg (kg/m <sup>2</sup> ) | 6.4   | -                 |

### 3.2 System boundary

This is an EPD of the type 1b) Declaration of a specific product from several of the manufacture's plants.

The **production stage** (A1-A3) includes all relevant processes from "cradle-to-factory gate" within the cut-off rules. This includes for example the extraction and manufacture of all raw materials and their delivery to the production site.

The **constructional process stage** includes the delivery of the parquet floor covering to the point of installation (A4).

A5 is declared, but only includes the treatment of packaging waste. Underlayment and glue in case of a glued down installation is not included.

The **use stage** (B2) includes the cleaning of the laminate floor covering for 1 year. The cleaning frequencies are described in chapter 4. For the calculation of an average cleaning scenario, 90% domestic and 10% commercial level of use is assumed, according to the market shares of distribution. Provision of water, cleaning agent and electricity for the cleaning of the floor covering is considered, including waste water treatment.

In module C3 only the release of biotic CO<sub>2</sub> is declared in order to guarantee carbon neutrality within the product system.

Module D includes benefits from all net flows in the end-of-life stage that leave the product boundary system after having passed the end-of-waste state. It is assumed that post-consumer flooring waste reaches the end-of-waste state after dismantling from the building and is 100% incinerated in a European biomass power plant. Loads from material incineration and resulted energy credits are declared within module D.

### 3.3 Estimates and assumptions

Specific life cycle inventories are available for nearly all input materials. Laminate floor covering elements

reach the end-of waste state after being dismantled in a building. It is assumed that post-consumer laminate floor coverings are 100% incinerated in a European biomass power plant.

### 3.4 Cut-off criteria

In the assessment, all available data from the production process are considered, i.e. all raw materials used, utilised thermal energy, and electric power consumption using best available LCI datasets. Thus material and energy flows contributing less than 1% of mass or energy are also considered. The only exception are wooden pallets used as packaging materials. The wood pallets are not considered in this study due to negligible amounts.

### 3.5 Background data

The used background data are from the GaBi ts software and the /GaBi ts/ background database. The reference years of the background data sets range from 2013 to 2017.

### 3.6 Data quality

The used data refer to the year 2015. The data of the foreground processes is based on input-output analyses at the Belgian and Russian production sites and European distribution facilities. The primary data collection was done thoroughly, all flows were considered.

### 3.7 Period under review

The period under review is 2015.

### 3.8 Allocation

The overall production of UNILIN comprises further products beside the product 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 area (m<sup>2</sup>). Specific information on allocation within the background data is given in the GaBi dataset documentation. (<http://www.gabi-software.com/databases/>).

### 3.9 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to /EN 15804/ and the building context, respectively the product-specific characteristics of performance, are taken into account. The used background database has to be mentioned.

## 4. LCA: Scenarios and additional technical information

The following technical information is a basis for the declared modules or can be used for developing specific scenarios in the context of a building assessment if modules are not declared (MND).

#### Transport to the construction site (A4)

| Name  | Value | Unit              |
|---|-------|-------------------|
| Transport distance (from Russia)            | 3000  | km                |
| Transport distance (from Belgium)           | 250   | km                |
| Capacity utilisation (including empty runs) | 85    | %                 |
| Gross density of products transported       | 800   | kg/m <sup>3</sup> |

#### Installation in the building (A5)

| Name   | Value  | Unit |
|--|--------|------|
| Output substances following waste treatment on site (only packaging) | 0.0814 | kg   |

#### Maintenance, per year (B2)

| Name                    | Value   | Unit           |
|-------------------------|---------|----------------|
| Water consumption       | 0.00324 | m <sup>3</sup> |
| Detergent               | 0.0327  | m <sup>3</sup> |
| Electricity consumption | 0.664   | kWh            |

**Service life**

| Name                                      | Value | Unit |
|---|-------|------|
| Service life declared by the manufacturer | 20    | a    |

**End of Life (C1-C4)**

| Name            | Value | Unit |
|-----------------|-------|------|
| Energy recovery | 6.37  | kg   |

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

| Name  | Value | Unit |
|---|-------|------|
| 100% incineration in a biomass power plant. |       |      |

## 5. LCA: Results

The results refer to the thickness of 7 mm (6.4 kg/m<sup>2</sup>) with use class 32. The information on maintenance is declared per year. The factors to calculate other thicknesses can be found in chapter 2.5.

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

| 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                        | MND       | X                | MND      | X   |

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1m<sup>2</sup> direct pressure laminate floor coverings

| Parameter  | Unit                                       | A1-A3    | A4       | A5       | B2       | C3      | D         |
|--|--|----------|----------|----------|----------|---------|-----------|
| Global warming potential   | [kg CO <sub>2</sub> -Eq.]                  | -2.96E+0 | 1.53E-1  | 1.86E-1  | 3.34E-1  | 1.09E+1 | -6.58E+0  |
| Depletion potential of the stratospheric ozone layer             | [kg CFC11-Eq.]                             | 3.28E-9  | 1.25E-13 | 3.91E-14 | 1.55E-11 | IND     | -1.78E-10 |
| Acidification potential of land and water                        | [kg SO <sub>2</sub> -Eq.]                  | 1.60E-2  | 6.44E-4  | 2.62E-5  | 9.53E-4  | IND     | 3.12E-3   |
| Eutrophication potential   | [kg (PO <sub>4</sub> ) <sup>3-</sup> -Eq.] | 3.75E-3  | 1.60E-4  | 3.74E-6  | 1.08E-4  | IND     | -7.34E-5  |
| Formation potential of tropospheric ozone photochemical oxidants | [kg ethene-Eq.]                            | 2.96E-3  | -2.33E-4 | 1.58E-6  | 6.18E-5  | IND     | 1.00E-3   |
| Abiotic depletion potential for non-fossil resources             | [kg Sb-Eq.]                                | 1.37E-6  | 1.39E-8  | 5.01E-9  | 2.10E-7  | IND     | -1.70E-6  |
| Abiotic depletion potential for fossil resources                 | [MJ]                                       | 9.41E+1  | 2.12E+0  | 4.24E-2  | 3.81E+0  | IND     | -8.48E+1  |

### RESULTS OF THE LCA - RESOURCE USE: 1m<sup>2</sup> direct pressure laminate floor coverings

| Parameter  | Unit              | A1-A3   | A4      | A5       | B2      | C3      | D        |
|--|-------------------|---------|---------|----------|---------|---------|----------|
| Renewable primary energy as energy carrier                 | [MJ]              | 4.82E+1 | 7.97E-2 | 1.03E+0  | IND     | IND     | IND      |
| Renewable primary energy resources as material utilization | [MJ]              | 9.49E+1 | 0.00E+0 | -1.02E+0 | IND     | 9.49E+1 | IND      |
| Total use of renewable primary energy resources            | [MJ]              | 1.43E+2 | 7.97E-2 | 7.73E-3  | 1.79E+0 | IND     | -2.38E+1 |
| Non-renewable primary energy as energy carrier             | [MJ]              | 1.01E+2 | 1.55E+0 | 6.06E-1  | IND     | IND     | IND      |
| Non-renewable primary energy as material utilization       | [MJ]              | 2.08E+1 | 0.00E+0 | -5.56E-1 | IND     | 2.08E+1 | IND      |
| Total use of non-renewable primary energy resources        | [MJ]              | 1.22E+2 | 1.55E+0 | 4.95E-2  | 5.86E+0 | IND     | -1.12E+2 |
| Use of secondary material                                  | [kg]              | 0.00E+0 | 0.00E+0 | 0.00E+0  | 0.00E+0 | IND     | 0.00E+0  |
| Use of renewable secondary fuels                           | [MJ]              | 0.00E+0 | 0.00E+0 | 0.00E+0  | 0.00E+0 | IND     | 0.00E+0  |
| Use of non-renewable secondary fuels                       | [MJ]              | 0.00E+0 | 0.00E+0 | 0.00E+0  | 0.00E+0 | IND     | 0.00E+0  |
| Use of net fresh water                                     | [m <sup>3</sup> ] | 3.27E-2 | 1.47E-4 | 4.53E-4  | 2.85E-3 | IND     | -2.53E-2 |

### RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES:

#### 1m<sup>2</sup> direct pressure laminate floor coverings

| Parameter                     | Unit | A1-A3   | A4      | A5       | B2      | C3      | D        |
|-------------------------------|------|---------|---------|----------|---------|---------|----------|
| Hazardous waste disposed      | [kg] | 2.91E-3 | 8.09E-8 | 1.15E-10 | 2.27E-6 | IND     | -2.67E-8 |
| Non-hazardous waste disposed  | [kg] | 1.30E-1 | 1.23E-4 | 5.38E-3  | 8.73E-3 | IND     | 5.71E-2  |
| Radioactive waste disposed    | [kg] | 1.11E-2 | 3.20E-6 | 2.80E-6  | 8.15E-4 | IND     | -1.09E-2 |
| Components for re-use         | [kg] | 0.00E+0 | 0.00E+0 | 0.00E+0  | 0.00E+0 | IND     | 0.00E+0  |
| Materials for recycling       | [kg] | 0.00E+0 | 0.00E+0 | 0.00E+0  | 0.00E+0 | IND     | 0.00E+0  |
| Materials for energy recovery | [kg] | 0.00E+0 | 0.00E+0 | 0.00E+0  | 0.00E+0 | 6.37E+0 | 0.00E+0  |
| Exported electrical energy    | [MJ] | 0.00E+0 | 0.00E+0 | 2.70E-1  | 0.00E+0 | IND     | 3.17E+1  |
| Exported thermal energy       | [MJ] | 0.00E+0 | 0.00E+0 | 6.24E-1  | 0.00E+0 | IND     | 3.79E+1  |

## 6. LCA: Interpretation

All environmental impact categories are mainly determined by the HDF and the production of the direct pressure laminate floor coverings.

The HDF plays an important role in **GWP** (Global Warming Potential). The negative contribution to the GWP is due to the greenhouse gas carbon dioxide which is incorporated via photosynthesis (A1-A3) and locked in the wooden HDF board during the use stage of the product. It is released again into the atmosphere during the EOL-incineration process. The release of biotic CO<sub>2</sub> is declared in C3.

The use stage (B2) is determined by cleaning the laminate flooring with water and detergent.

HDF is the main contributor as well to the **ODP** (Ozone Depletion Potential). This due to the presence of glue in the HDF boards.

**Primary energy from renewables (PERT)** is mainly determined by the wood in the HDF-board and thermal energy from renewable resources.

## 7. Requisite evidence

PEFC certificate

The product fulfills the requirements according to /PEFC ST 2002: 2010/: "Chain of Custody of Forest Based Products - Requirements" second edition. CTIB - TCHN- Hof ter Vleest dreef 3 - 1070 Brussel - Belgium.

#### VOC emissions - Formaldehyde

Determination of the VOC and formaldehyde emission of a laminate flooring according to /compliance with AgBB-Scheme/, /ISO 16000/ part 3, 6 and 9. – EPH Laboratory Chemical Testing – Zellescher Weg 24 – 01217 Dresden – Germany.

#### AgBB 28 days break-off criteria

|                   |                         |
|-------------------|-------------------------|
| TVOC (C6-C16)     | 0,129 mg/m <sup>3</sup> |
| Σ SVOC (C16-C22)  | 0 mg/m <sup>3</sup>     |
| R                 | 0,034                   |
| Σ VOC without LCI | 0 mg/m <sup>3</sup>     |
| Σ Cancerogene     | 0 mg/m <sup>3</sup>     |

#### CE marking

CE-labelling according to EN 14041, type 3 – notified body: 0380-1161.

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#### ISO 14041:2016

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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.

#### EN ISO 10874:

Resilient, textile and laminate floor coverings -- Classification

#### FCSS:

Floor Covering Standard Symbols

#### BBSR:

Bundesinsitut für Bau-, Stadt- und Raumforschung.

#### EWC-94/3/EC:

Commission Decision of 20 December 1993 establishing a list of wastes pursuant to Article 1a of Council Directive 74/442/EEC on waste, 1993 - European Waste Catalogue and Hazardous Waste List valid from 1 January 2002.

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Declarations — Core rules for the product category of  
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**EN 15804**

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construction works — Environmental Product

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