ENVIRONMENTAL PRODUCT DECLARATION

# BIO-BASED POLYURETHANE RESILIENT FLOORING


Shaw Contract furthers its commitment to healthier materials with a collection of coordinating tile and sheet resilient products composed of bio-based polyurethane. These products are manufactured with canola, castor and rapeseed oils-all rapidly renewable, commonly occurring bio-based materials that are free of ortho-phthalates, chlorine and solvents.

shaw contract®

We design products that empower our clients to create safe, sustainable, enduring spaces.

We are not trying to get to zero - our goal is more than zero. By adhering to Cradle to Cradle design principles, our goal is not to do less bad, but to do more good.

We don't focus on just one attribute, because this doesn't help our clients or the planet. It all matters - and we're taking every detail into account.

This is our philosophy and it permeates throughout our entire company. The *Cradle to Cradle Certified*™ Product Standard holds us accountable to this commitment while supporting our drive for continuous improvement. All while contributing to the circular economy.

UL CERTIFIED
ENVIRONMENTAL PRODUCT DECLARATION
UL.COM/EPD

Institut Bauen und Umwelt e.V.

*Registered under the scope of mutual recognition between UL Environment and Institut Bauen und Umwelt e.V.*

# ENVIRONMENTAL PRODUCT DECLARATION

**shaw** contract®

*Shaw Contract®*
*Bio-Based Polyurethane Resilient Flooring*

**According to EN 15804 and ISO 14025**
**Dual Recognition by UL Environment and Institut Bauen und Umwelt e.V.**

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

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|---|---|
| PROGRAM OPERATOR | UL Environment |
| DECLARATION HOLDER | Shaw Contract |
| ULE DECLARATION NUMBER | 4788795916.101.1 |
| IBU DECLRATION NUMBER | EPD-SHA-20180120-CBC1-EN |
| DECLARED PRODUCT | Bio-Based Polyurethane Resilient Flooring |
| REFERENCE PCR | Product Category Rules Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report, 03.2018<br>Product Category Rules Part B: Floor coverings, 02.2018 |

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|---|---|
| DATE OF ISSUE | April 3, 2019 |
| VALIDITY UNTIL | September 17, 2023 |

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|---|---|
| CONTENTS OF THE DECLARATION | General information<br>Product / Product description<br>LCA calculation rules<br>LCA scenarios and further technical information<br>LCA results<br>References |
| The PCR review was conducted by: | IBU – Institut Bauen und Umwelt e.V.<br>PCR was approved by the Independent Expert Committee (IEC) of IBU |
| The CEN Norm EN 15804 serves as the core PCR. This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories<br>☐ INTERNAL ☒ EXTERNAL | Grant R. Martin<br>Grant R. Martin, UL Environment |
| This life cycle assessment was independently verified in accordance with EN 15804 and the reference PCR by: | IBU – Institut Bauen und Umwelt e.V. |

Environment

shaw contract®

## General Information

### Shaw Contract®

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

**Declaration number**
EPD-SHA-20180120-CBC1-EN

**This declaration is based on the product category rules:**
Floor coverings, 02/2018
(PCR checked and approved by the SVR)

**Issue date**
18.09.2018

**Valid to**
17.09.2023

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

Dr. Alexander Röder
(Managing Director IBU)

### Bio-Based Polyurethane Resilient Flooring

**Owner of the declaration**
Shaw Contract®
PO Box 2128
Dalton, GA 30722
United States, Georgia

**Declared product / declared unit**
1 m² Bio-Based Polyurethane Resilient Flooring

**Scope:**
The manufacturer declaration applies to Bio-Based polyurethane Resilient Flooring.
It is manufactured externally in Germany.

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**

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|---|
| The standard /EN 15804/ serves as the core PCR |
| Independent verification of the declaration and data according to /ISO 14025:2010/ |
| ☐ internally ☒ externally |

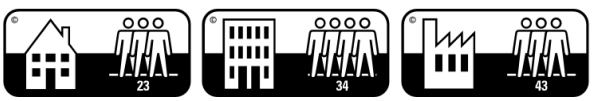
Angela Schindler
(Independent verifier appointed by SVR)

## Product

**Product description / Product definition**
Bio-Based Polyurethane Resilient Flooring is produced with the reactive component castor oil as renewable raw material and with natural inorganic filler.
The total weight of the product is 3.9 kg/m$^2$.

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 Construction Producs Regulation /CPR/ applies.
The Declaration of Performance of the products taking into consideration /EN 14041/ and the CE-marking of the products can be found on the manufacturer's technical information section.

**Application**
According to the use class as defined in /ISO 10874/ the product can be used
- in all domestic areas, classified as use class 23,
- in all commercial areas, classified as use class 34
- in all industrial areas, classified as use class 43




**Technical Data**

| Name | Value | Unit |
|---|---|---|
| Grammage | 3.9 | kg/m² |
| Product thickness | 2.5 | mm |
| Product Form | several dimensions | - |

Additional product properties in accordance with /EN 16776/ and performance data of the product in accordance with the Declaration of Performance with respect to its Essential Characteristics according to /EN 14041/ can be found on the manufacturer's technical information section (www.shawcontract.com).

**Base materials / Ancillary materials**

| Name | Value | Unit |
|---|---|---|
| Polyurethane including 64% renewable material | 45.2 | % |
| Filler | 50.2 | % |
| Paper | 1.7 | % |
| Glass fibre | 0.8 | % |
| Polyester | 2.1 | % |

This product contains substances listed in the /REACH/ Candidate List of Substances of Very High Concern for Authorisation" (SVHC) (27.06.2018) exceeding 0.1 percentage by mass: no

**Reference service life**
A calculation of the reference service life according to /ISO 15686/ is not possible.
The service life of resilient floor coverings depends on the correct installation taking into account the declared use classification and the adherence to cleaning and maintenance instructions.
A minimum service life of 20 years can be assumed /BNB/, technical service life can be considerably longer.

## LCA: Calculation rules

**Declared Unit**

| Name | Value | Unit |
|---|---|---|
| Declared unit | 1 | $m^2$ |
| Conversion factor to 1 kg | 0.26 | - |
| Mass reference | 3.9 | kg/m² |

The declared unit refers to 1 $m^2$ produced floor covering. Output of module A5 'Assembly' is 1 $m^2$ installed floor covering.

**System boundary**

*Type of EPD:* Cradle-to-grave

*System boundaries of modules A, B, C, D:*

A1-A3 Production:
Energy supply and production of the basic material, auxiliary material, transport of the material to the manufacturing site, emissions, waste water treatment, packaging material and waste processing up to the landfill disposal of residual waste (except radioactive waste). Benefits for generated electricity and steam due to the incineration of production waste are aggregated.

A4 Transport:
Transport of the packed floor covering from factory gate to the place of installation.

A5 Installation:
Installation of the floor covering, processing of installation waste and packaging waste up to the landfill disposal of residual waste (except radioactive waste), the production of the amount of floor covering that occurs as installation waste including its transport to the place of installation.
Generated electricity and steam due to the incineration of waste are listed in the result table as exported energy.
Preparing of the floor and adhesives are beyond the system boundaries and not taken into account.

B1 Use:
Indoor emissions during the use stage. After the first year, no product related VOC emissions are relevant due to VOC decay curves of the product.

B2 Maintenance:
Cleaning of the floor covering for a period of 1 year:
Vacuum cleaning – electricity supply
Wet cleaning – water consumption, production of the cleaning agent, waste water treatment.
The declared values in this module have to be multiplied by the assumed service life of the floor covering in the building in question.

B3 - B7:
The modules are not relevant and therefore not declared.

C1 De-construction:
Energy consumption of the de-construction machine.

C2 Transport:
Transport of the floor covering waste to a landfill or to the municipal waste incineration plant (MWI).

C3 Waste processing:
C3-1: Landfill disposal needs no waste processing.
C3-2: Impact from waste incineration (plant with R1>0.6), generated electricity and steam are listed in the result table as exported energy.

C4 Disposal
C4-1: Impact from landfill disposal,
C4-2: The floor covering waste leaves the system in module C3-2,

D Recycling potential:
D-A5: Benefits for generated energy due to incineration of packaging and installation waste (incineration plant with R1 > 0.6),
D-1: Benefits for generated energy due to landfill disposal of floor covering waste at the end-of-life,
D-2: Benefits for generated energy due to incineration of floor covering waste at the end-of-life (incineration plant with R1 > 0.6),

**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 data are taken from the /GaBi database 2018/, service pack 35 and from the /ecoinvent 3.3/ database

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## LCA: Scenarios and additional technical information

The following information refer to the declared modules and are the basis for calculations or can be used for further calculations. The indicated values refer to the declared functional unit.

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

| Name | Value | Unit |
|---|---|---|
| Litres of fuel , diesel, truck EURO 0-6 mix | 0.009 | l/100km |
| Litres of fuel , heavy fuel oil, ship | 0.001 | l/100km |
| Transport distance truck | 540 | km |
| Transport distance ship | 750 | km |
| Capacity utilisation (including empty runs) truck | 60 | % |
| Capacity utilisation (including empty runs) ship | 48 | % |

**Installation in the building (A5)**

| Name | Value | Unit |
|---|---|---|
| Material loss | 0.12 | kg |

Coated packaging paper and installation waste are considered to be incinerated in a municipal waste incineration plant. Pure cardboard packaging waste is going to be recycled.
Preparation of the floor and adhesives are not taken into account.

**Maintenance (B2)**

The values for cleaning refer to 1 $m^2$ floor covering used in commercial areas per year.
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.

| Name | Value | Unit |
|---|---|---|
| Maintenance cycle (wet wiping) | 103,2 | 1/year |
| Maintenance cycle (vacuum cleaning) | 37,4 | 1/year |
| Water consumption (wet wiping) | 0.026 | $m^3$ |
| Cleaning agent (wet wiping) | 0.05 | kg |
| Electricity consumption | 0.09 | kWh |

Further information on cleaning and maintenance see www.shawcontract.com

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

Two different end-of-life scenarios are declared and the results are indicated separately in module C.
Each scenario is calculated as a 100% scenario.

Scenario 1: 100% landfill disposal
Scenario 2: 100% municipal waste incineration (MWI) with R1>0.6

If combinations of these scenarios have to be calculated this should be done according to the following scheme:

EOL-impact = x% impact (Scenario 1)
+ y% impact (Scenario 2)

| Name | Value | Unit |
|---|---|---|
| Collected as mixed construction waste (scenario 1 and 2) | 3.9 | kg |
| Landfilling (scenario 1) | 3.9 | kg |
| Energy recovery (scenario 2) | 3.9 | kg |

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

Recovery potentials due to the two end-of-life scenarios (module C) are indicated separately.

## LCA: Results

The declared result figures in module B2 have to be multiplied by the assumed service life (in years) of the floor covering in the building under consideration.
Information on un-declared modules:
Modules B3 - B7 are not relevant during the service life of the floor covering and are therefore not declared.
Modules C3/1 and C4/2 cause no additional impact (see "LCA: Calculation rules") and are therefore not declared.
Module C2 represents the transport for scenarios 1 and 2. Column D represents module D/A5.
The /CML/ characterisation factors version January 2016 are applied.

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

| 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 | X | X | MNR | MNR | MNR | MND | MND | X | X | X | X | X |

**RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m² floorcovering**

**CML 2001 – April 2013**

| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | C1 | C2 | C3/2 | C4/1 | D | D/1 | D/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GWP | [kg $CO_2$ eq.] | 4.26E+0 | 1.92E-1 | 3.68E-1 | 0.00E+0 | 2.88E-1 | 6.55E-3 | 1.18E-2 | 7.23E+0 | 3.01E+0 | -5.52E-2 | 0.00E+0 | -1.65E+0 |
| ODP | [kg CFC11 eq.] | 1.47E-7 | 5.11E-15 | 4.26E-9 | 0.00E+0 | 2.07E-8 | 2.90E-14 | 3.24E-16 | 8.69E-13 | 7.40E-14 | -1.19E-13 | 0.00E+0 | -3.55E-12 |
| AP | [kg $SO_2$ eq.] | 4.80E-2 | 1.54E-3 | 1.50E-3 | 0.00E+0 | 8.50E-4 | 1.85E-5 | 5.01E-5 | 2.02E-3 | 7.48E-4 | -9.20E-5 | 0.00E+0 | -2.75E-3 |
| EP | [kg $(PO_4)^{3-}$ eq.] | 3.27E-2 | 2.69E-4 | 9.77E-4 | 0.00E+0 | 4.99E-4 | 1.74E-6 | 1.28E-5 | 4.98E-4 | 7.65E-4 | -9.96E-6 | 0.00E+0 | -2.98E-4 |
| POCP | [kg ethene eq.] | 1.43E-3 | -2.60E-4 | 2.41E-5 | 1.79E-6 | 1.02E-4 | 1.16E-6 | -2.09E-5 | 1.33E-4 | 8.18E-5 | -7.22E-6 | 0.00E+0 | -2.16E-4 |
| ADPE | [kg Sb eq.] | 2.51E-5 | 1.44E-8 | 7.33E-7 | 0.00E+0 | 8.33E-7 | 3.47E-9 | 9.83E-10 | 1.39E-7 | 5.93E-8 | -1.55E-8 | 0.00E+0 | -4.63E-7 |
| ADPF | [MJ] | 1.10E+2 | 2.58E+0 | 3.42E+0 | 0.00E+0 | 3.58E+0 | 6.94E-2 | 1.61E-1 | 2.03E+0 | 3.97E+0 | -7.58E-1 | 0.00E+0 | -2.27E+1 |

**TRACI 2.1**

| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | C1 | C2 | C3/2 | C4/1 | D | D/1 | D/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GWP | [kg $CO_2$ eq.] | 4,31E+00 | 1,92E-01 | 3,69E-01 | 0,00E+00 | 2,85E-01 | 6,52E-03 | 1,18E-02 | 7,23E+00 | 3,01E+00 | -5,49E-02 | 0,00E+00 | -1,65E+00 |
| ODP | [kg CFC11 eq.] | 1,61E-07 | 5,11E-15 | 4,66E-09 | 0,00E+00 | 2,19E-08 | 2,90E-14 | 3,24E-16 | 9,15E-13 | 7,40E-14 | -1,19E-13 | 0,00E+00 | -3,55E-12 |
| AP | [kg $SO_2$ eq.] | 5,48E-02 | 1,84E-03 | 1,74E-03 | 0,00E+00 | 9,46E-04 | 1,88E-05 | 6,78E-05 | 2,76E-03 | 7,93E-04 | -9,63E-05 | 0,00E+00 | -2,88E-03 |
| EP | [kg N eq.] | 5,91E-02 | 1,10E-04 | 1,72E-03 | 0,00E+00 | 9,40E-04 | 1,41E-06 | 5,66E-06 | 2,03E-04 | 3,67E-04 | -6,76E-06 | 0,00E+00 | -2,02E-04 |
| SFP | [kg $O_3$ eq.] | 5,47E-01 | 3,77E-02 | 2,01E-02 | 3,29E-05 | 1,13E-02 | 2,33E-04 | 1,50E-03 | 8,65E-02 | 1,36E-02 | -1,48E-03 | 0,00E+00 | -4,43E-02 |
| ARDP | [MJ] | 1,37E+01 | 3,71E-01 | 4,27E-01 | 0,00E+00 | 4,12E-01 | 3,89E-03 | 2,32E-02 | 2,43E-01 | 5,14E-01 | -8,67E-02 | 0,00E+00 | -2,60E+00 |

| Caption | GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources, SMP = Smog Formation Potential, ARDP = Abiotic Resource Depletion Potential for Non-renewable (fossil) energy ressources |
|---|---|

**RESULTS OF THE LCA - RESOURCE USE: 1 m² floorcovering**

| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | C1 | C2 | C3/2 | C4/1 | D | D/1 | D/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PERE | [MJ] | 6.57E+1 | 1.26E-1 | 3.00E+0 | 0.00E+0 | 6.30E-1 | 4.48E-2 | 8.93E-3 | 3.80E+1 | 3.07E-1 | -1.84E-1 | 0.00E+0 | -5.51E+0 |
| PERM | [MJ] | 3.77E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | -3.77E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| PERT | [MJ] | 1.03E+2 | 1.26E-1 | 3.00E+0 | 0.00E+0 | 6.30E-1 | 4.48E-2 | 8.93E-3 | 3.13E-1 | 3.07E-1 | -1.84E-1 | 0.00E+0 | -5.51E+0 |
| PENRE | [MJ] | 1.03E+2 | 2.59E+0 | 3.60E+0 | 0.00E+0 | 4.07E+0 | 1.19E-1 | 1.62E-1 | 1.50E+1 | 4.12E+0 | -9.61E-1 | 0.00E+0 | -2.88E+1 |
| PENRM | [MJ] | 1.27E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | -1.27E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| PENRT | [MJ] | 1.16E+2 | 2.59E+0 | 3.60E+0 | 0.00E+0 | 4.07E+0 | 1.19E-1 | 1.62E-1 | 2.31E+0 | 4.12E+0 | -9.61E-1 | 0.00E+0 | -2.88E+1 |
| SM | [kg] | 1.41E-1 | 0.00E+0 | 4.24E-3 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| RSF | [MJ] | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| NRSF | [MJ] | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| FW | [m³] | 8.20E+0 | 2.32E-4 | 2.38E-1 | 0.00E+0 | 7.45E-3 | 6.10E-5 | 1.65E-5 | 1.55E-2 | -1.06E-5 | -2.51E-4 | 0.00E+0 | -7.51E-3 |

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

**RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES:**
**1 m² floorcovering**

| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | C1 | C2 | C3/2 | C4/1 | D | D/1 | D/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HWD | [kg] | 3.23E-7 | 1.31E-7 | 1.93E-8 | 0.00E+0 | 1.33E-9 | 5.59E-11 | 9.36E-9 | 1.31E-8 | 1.76E-8 | -3.91E-10 | 0.00E+0 | -1.17E-8 |
| NHWD | [kg] | 1.69E-1 | 1.91E-4 | 3.05E-2 | 0.00E+0 | 3.84E-2 | 8.40E-5 | 1.36E-5 | 8.42E-1 | 3.89E+0 | -4.10E-4 | 0.00E+0 | -1.23E-2 |
| RWD | [kg] | 1.94E-3 | 3.49E-6 | 6.00E-5 | 0.00E+0 | 1.29E-4 | 1.97E-5 | 2.22E-7 | 1.11E-4 | 5.85E-5 | -8.09E-5 | 0.00E+0 | -2.42E-3 |
| CRU | [kg] | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| MFR | [kg] | 0.00E+0 | 0.00E+0 | 1.29E-1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| MER | [kg] | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| EEE | [MJ] | 0.00E+0 | 0.00E+0 | 2.32E-1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 6.93E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| EET | [MJ] | 0.00E+0 | 0.00E+0 | 4.26E-1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.28E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |

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

The $CO_2$ uptake during the growth phase of renewable materials in the product is 2.74 kg. This amount is stored in the material as biogenic carbon. At the end of life the stored carbon is released into the air again as 2.74 kg $CO_2$ emissions.

## References


**/IBU 2016/**
IBU (2016): General Programme Instructions for the Preparation of EPDs at the Institut Bauen und Umwelt e.V., Version 1.1 Institut Bauen und Umwelt e.V., Berlin.
www.ibu-epd.de

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

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

**/EN 16810/**
DIN EN 16810: 2017-08: Resilient, textile and laminate floor coverings – Environmental product declarations – Product category rules

**/PCR Part A/**
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