# ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A1*

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|---|---|
| Owner of the Declaration | Findeisen GmbH |
| Programme holder | Institut Bauen und Umwelt e.V. (IBU) |
| Publisher | Institut Bauen und Umwelt e.V. (IBU) |
| Declaration number | EPD-FND-20200262-CCA1-EN |
| Issue date | 16.11.2020 |
| Valid to | 15.11.2025 |

## FINETT DIMENSION

needle felt floor covering
with a use layer made of polyamide 6.10

## FINDEISEN

Institut Bauen und Umwelt e.V.

**www.ibu-epd.com | https://epd-online.com**

## General Information

**FINDEISEN**

**FINETT DIMENSION**
needle felt floor covering
with a use layer made of PA 6.10

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

**Owner of the declaration**
Findeisen GmbH
Bulacher Straße 53
76275 Ettlingen
Germany

**Declaration number**
EPD-FND-20200262-CCA1-EN

**Declared product / declared unit**
1 m² needle felt floorcovering FINETT DIMENSION

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

**Scope:**
The manufacturer declaration applies to the needle felt floor covering FINETT DIMENSION. The product is produced in the Findeisen manufacturing site in Ettlingen, Germany.
The declaration is only valid in conjunction with a valid GUT-*PRODIS* license of the product.

**Issue date**
16.11.2020

**Valid to**
15.11.2025

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+A1*. In the following, the standard will be simplified as *EN 15804*.

**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 |

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

Dr. Alexander Röder
(Managing Director Institut Bauen und Umwelt e.V.))

Angela Schindler
(Independent verifier)

## Product

**Information about the enterprise**
FINDEISEN is world leader with the main brand FINETT for needled floor coverings. FINETT floor coverings stand for reliability, quality as well as for a successful connection of tradition and innovation. The family-owned company was established in Ettlingen (Germany) in 1921. To this day, all FINETT products are fabricated exclusively in the Ettlingen factory and, therefore, 100 % Made in Germany. FINETT floor coverings are hard-wearing and durable. This is why FINETT needled floor coverings are especially used in public areas that are highly frequented.

**Product description/Product definition**
FINETT DIMENSION - needle felt floor covering with a use layer made of solution-dyed polyamide 6.10 and a base layer made of recycled torn fibres. The polyamide 6.10 fibres contain renewable raw materials. The recycled content out of total weight amounts to 41 %.
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 Product Regulation (CPR) applies. The product needs a Declaration of Performance (DoP) taking into consideration *EN 14041* and the CE-marking. The DoP of the product can be found on the manufacturer's technical information section. For the application and use of the product the respective national provisions apply.

**Application**
According to the use class as defined in *EN 1307* the product can be used in professional or private areas. The use class of the product can be taken from the manufacturer's technical information section.

**Technical Data**
The performance data listed in the DoP apply.

| Name | Value | Unit |
|---|---|---|
| Type of manufacture | Needle felt textile floor covering, type A3 | - |
| Product Form | Rolls of 2 m width or modules 50cm x 50cm or 100cm x 25cm | - |
| Material of the use layer | Solution dyed polyamide 6.10 | |
| Use layer weight | 520 | g/m² |
| Secondary backing | Finish | - |
| Total weight of the textile floor covering | max. 1470 | g/m² |

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to *EN 14041*. Additional product properties in accordance with *EN 1307* can be found on the Product Information System *PRODIS* using the *PRODIS* registration number of the product (www.pro-dis.info) or on the manufacturer's technical information section (www.nadelvlies.de).

**Base materials/Ancillary materials**

| Name | Value | Unit |
|---|---|---|
| Polyamide 6.10 | 35.4 | % |
| Polypropylene | 3.2 | % |
| Recycled mixed fibres | 41.0 | % |
| Ethylene vinyl acetate (EVA) | 20.4 | % |

The products are registered in the GUT-*PRODIS* Information System. The *PRODIS* system ensures the compliance with limitations of various chemicals and Volatile Organic Compound (VOC)-emissions and a ban on the use of all substances that are listed as 'Substances of Very High Concern' (SVHC) under *REACH*.
This product contains substances listed in the *REACH* candidate list (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 textile floor coverings strongly 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 10 years can be assumed, technical service life can be considerably longer.

## LCA: Calculation rules

**Declared Unit**

| Name | Value | Unit |
|---|---|---|
| Declared unit | 1 | m² |
| Conversion factor to 1 kg | 0.6803 | - |
| Mass reference | 1.47 | kg/m² |

The declared unit refers to 1 m² produced textile floor covering. The output of module A5 'Assembly' is 1 m² installed textile floor covering.

**System boundary**

*Type of EPD:* Cradle-to-grave

*System boundaries of modules A, B, C, D:*
Modules C3, C4 and D are indicated separately for three end-of-life scenarios:
1 - landfill disposal
2 - municipal waste incineration
3 - recovery in a cement plant

A1-A3 Production:
Energy supply and production of the basic material, processing of secondary 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. Biogenic carbon that is stored in renewable material (PA 6.10, paper) is taken into account as well as the associated carbon dioxide uptake from the air from which this biogenic carbon comes. The same principle was used for recycled renewable material (waste paper).

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

A5 Installation:
Installation of the textile 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.
Biogenic carbon that is stored in renewable materials in the installation waste and in the packaging material is released as carbon dioxide emissions into the air at the end of life in module A5.
Preparation of the floor and auxiliary materials (adhesives, fixing agents, PET connectors) 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 Volatile Organic Compound (VOC) emissions are relevant due to known VOC decay curves of the product.

B2 Maintenance:
Cleaning of the textile floor covering for a period of 1 year:
Vacuum cleaning – electricity supply

Wet cleaning – electricity, 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:
The floor covering is de-constructed manually and no additional environmental impact is caused.

C2 Transport:
Transport of the floor covering waste to a landfill, to the municipal waste incineration plant (MWI) or to the waste collection facility for recycling.

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. The biogenic carbon that is stored in the renewable materials of the floor covering is released into the air as carbon dioxide emissions.
C3-3: Collection of the used floor covering, waste processing (granulating). The biogenic carbon that is stored in the renewable materials of the floor covering is released into the air as carbon dioxide emissions.

C4 Disposal
C4-1: Impact from landfill disposal. The biogenic carbon that is stored in the renewable materials of the floor covering is released into the air as carbon dioxide emissions.
C4-2: The floor covering waste leaves the system in module C3-2,
C4-3: The pre-processed floor covering waste leaves the system in module C3-3.

D Recycling potential:
Calculated benefits result from materials exclusive secondary materials (net materials).
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),
D-3: Benefits for saved fossil energy and saved inorganic material due to recovery of the textile floor covering in a cement plant at the end-of-life, transport from the reprocessing plant to the cement kiln.

**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 2020*, service pack 40. Remaining data gaps are covered by the *ecoinvent 3.6* database.

## 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.

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

| Name | Value | Unit |
|---|---|---|
| Litres of fuel (truck, EURO 0-6 mix) | 0.0034 | l/100km |
| Transport distance | 700 | km |
| Capacity utilisation (including empty runs) | 55 | % |

**Installation in the building (A5)**

| Name | Value | Unit |
|---|---|---|
| Material loss | 0.13 | kg |

Polyethylene packaging waste and installation waste are considered to be incinerated in a municipal waste incineration plant. Cardboard is going to be recycled. Preparation of the floor and auxiliaries (adhesives, fixing agents, PET connectors etc.) 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 *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 based on the useful life to obtain the overall environmental impacts.

| Name | Value | Unit |
|---|---|---|
| Maintenance cycle (wet cleaning) | 0.9 | 1/year |
| Maintenance cycle (vacuum cleaning) | 156 | 1/year |
| Water consumption (wet cleaning) | 0.003 | $m^3$ |
| Cleaning agent (wet cleaning) | 0.06 | kg |
| Electricity consumption | 0.326 | kWh |

Further information on cleaning and maintenance see www.nadelvlies.de

**End of Life (C1-C4)**
Three 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
Scenario 3: 100% recycling in the cement industry

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)
+ z% impact (Scenario 3)
with x% + y% + z% = 100%

| Name | Value | Unit |
|---|---|---|
| Collected as mixed construction waste (scenario 1 and 2) | 1.47 | kg |
| Collected separately (scenario 3) | 1.47 | kg |
| Landfilling (scenario 1) | 1.47 | kg |
| Energy recovery (scenario 2) | 1.47 | kg |
| Energy recovery (scenario 3) | 1,47 | kg |
| Recycling (scenario 3) | 0 | kg |

**Reuse, recovery and/or recycling potentials (D), relevant scenario information**
Recovery or recycling potentials due to the three end-of-life scenarios (module C) are indicated separately.

Recycling in the cement industry (scenario 3)
The organic material of the textile floor covering is used as secondary fuel in a cement kiln. It mainly substitutes for lignite (64.5%), hard coal (26.5%) and petrol coke (9.0%) *VDZ e.V.*

## 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 textile floor covering and are marked as 'not declared'.

Modules C1, C3/1, C4/2 and C4/3 cause no additional impact (see "LCA: Calculation rules") and are marked as 'not declared'. Module C2 represents the transport for scenarios 1, 2 and 3. 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; 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 | X | X | MNR | MNR | MNR | MND | MND | MND | X | X | X | X |

**RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A1: 1 m² textile floor covering**

| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | C2 | C3/2 | C3/3 | C4/1 | D | D/1 | D/2 | D/3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GWP | [kg $CO_2$-Eq.] | 5.70E+0 | 8.98E-2 | 9.86E-1 | 0.00E+0 | 2.32E-1 | 4.87E-3 | 3.93E+0 | 8.40E-1 | 9.31E-1 | -7.17E-2 | 0.00E+0 | -7.36E-1 | -1.78E-1 |
| ODP | [kg CFC11-Eq.] | 1.53E-12 | 1.47E-17 | 1.38E-13 | 0.00E+0 | 7.40E-9 | 7.99E-19 | 5.96E-16 | 2.41E-16 | 3.21E-16 | -1.02E-15 | 0.00E+0 | -1.05E-14 | -6.76E-16 |
| AP | [kg $SO_2$-Eq.] | 2.86E-2 | 3.78E-4 | 2.77E-3 | 0.00E+0 | 8.20E-4 | 2.05E-5 | 1.82E-3 | 1.69E-5 | 2.69E-4 | -9.05E-5 | 0.00E+0 | -9.30E-4 | -5.67E-4 |
| EP | [kg $(PO_4)^{3-}$-Eq.] | 1.73E-2 | 9.50E-5 | 1.61E-3 | 0.00E+0 | 2.06E-4 | 5.15E-6 | 4.62E-4 | 1.87E-6 | 2.81E-4 | -1.13E-5 | 0.00E+0 | -1.16E-4 | -6.66E-5 |
| POCP | [kg ethene-Eq.] | 9.86E-4 | -1.59E-4 | 8.39E-5 | 6.29E-5 | 9.84E-5 | -8.64E-6 | 1.11E-4 | 1.21E-6 | 3.04E-5 | -8.24E-6 | 0.00E+0 | -8.47E-5 | -9.47E-5 |
| ADPE | [kg Sb-Eq.] | 3.61E-6 | 7.58E-9 | 3.29E-7 | 0.00E+0 | 2.72E-6 | 4.11E-10 | 3.64E-8 | 2.70E-9 | 1.92E-8 | -1.34E-8 | 0.00E+0 | -1.38E-7 | -1.71E-8 |
| ADPF | [MJ] | 1.06E+2 | 1.22E+0 | 9.73E+0 | 0.00E+0 | 4.71E+0 | 6.63E-2 | 9.58E-1 | 8.93E-2 | 1.48E+0 | -1.00E+0 | 0.00E+0 | -1.03E+1 | -2.89E+1 |

| 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 |
|---|---|

**RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A1: 1 m² textile floor covering**

| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | C2 | C3/2 | C3/3 | C4/1 | D | D/1 | D/2 | D/3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PERE | [MJ] | 5.08E+1 | 6.89E-2 | 5.83E+0 | 0.00E+0 | 1.16E+0 | 3.73E-3 | 1.13E+1 | 1.12E+1 | 1.07E-1 | -2.71E-1 | 0.00E+0 | -2.78E+0 | -1.60E-1 |
| PERM | [MJ] | 1.14E+1 | 0.00E+0 | -2.13E-1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | -1.11E+1 | -1.11E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| PERT | [MJ] | 6.22E+1 | 6.89E-2 | 5.62E+0 | 0.00E+0 | 1.16E+0 | 3.73E-3 | 1.37E-1 | 6.40E-2 | 1.07E-1 | -2.71E-1 | 0.00E+0 | -2.78E+0 | -1.60E-1 |
| PENRE | [MJ] | 9.20E+1 | 1.23E+0 | 1.06E+1 | 0.00E+0 | 5.75E+0 | 6.65E-2 | 2.24E+1 | 2.15E+1 | 1.53E+0 | -1.24E+0 | 0.00E+0 | -1.27E+1 | -2.90E+1 |
| PENRM | [MJ] | 2.15E+1 | 0.00E+0 | -1.47E-1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | -2.14E+1 | -2.14E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| PENRT | [MJ] | 1.14E+2 | 1.23E+0 | 1.04E+1 | 0.00E+0 | 5.75E+0 | 6.65E-2 | 1.05E+0 | 1.45E-1 | 1.53E+0 | -1.24E+0 | 0.00E+0 | -1.27E+1 | -2.90E+1 |
| SM | [kg] | 6.99E-1 | 0.00E+0 | 6.29E-2 | 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 |
| 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 | 1.12E+1 |
| 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 | 2.14E+1 |
| FW | [$m^3$] | 2.19E+0 | 7.97E-5 | 1.98E-1 | 0.00E+0 | 3.09E-3 | 4.32E-6 | 7.32E-3 | 7.41E-5 | 1.87E-5 | -3.14E-4 | 0.00E+0 | -3.22E-3 | -2.35E-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 – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A1: 1 m² textile floor covering**

| Parameter | Unit | A1-A3 | A4 | A5 | B1 | B2 | C2 | C3/2 | C3/3 | C4/1 | D | D/1 | D/2 | D/3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HWD | [kg] | 1.36E-7 | 5.71E-8 | 1.76E-8 | 0.00E+0 | 9.83E-10 | 3.09E-9 | 1.14E-9 | 5.98E-11 | 5.57E-9 | -4.93E-10 | 0.00E+0 | -5.07E-9 | 2.06E-9 |
| NHWD | [kg] | 9.20E-2 | 1.88E-4 | 1.42E-2 | 0.00E+0 | 4.11E-3 | 1.02E-5 | 6.49E-2 | 1.03E-4 | 1.46E+0 | -5.72E-4 | 0.00E+0 | -5.88E-3 | -6.34E-4 |
| RWD | [kg] | 3.03E-3 | 1.52E-6 | 2.76E-4 | 0.00E+0 | 3.51E-4 | 8.23E-8 | 3.70E-5 | 2.19E-5 | 1.84E-5 | -9.25E-5 | 0.00E+0 | -9.50E-4 | -4.24E-5 |
| 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 | 0.00E+0 |
| MFR | [kg] | 2.18E-3 | 0.00E+0 | 7.60E-2 | 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 |
| MER | [kg] | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.47E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| EEE | [MJ] | 0.00E+0 | 0.00E+0 | 4.95E-1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 5.25E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| EET | [MJ] | 0.00E+0 | 0.00E+0 | 8.89E-1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 9.42E+0 | 0.00E+0 | 0.00E+0 | 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 |
|---|---|

Information on the biogenic carbon content:
The textile floor covering contains renewable material with stored biogenic carbon in the PA 6.10 fibres. The share of renewable material is calculated as 67% of the PA 6.10. During the growth phase of plants carbon dioxide ($CO_2$) is absorbed and transformed into stored biogenic carbon.
This amount of $CO_2$ uptake is taken into account in module A1-A3 as a negative value that reduces the total amount of the GWP. At the end-of-life the same amount of $CO_2$ is released into the air as emissions. These $CO_2$ emissions increase the amount of the GWP in the three scenarios landfill disposal, municipal incineration and recovery in the cement industry. Regarding the $CO_2$ balance recycled renewable materials are treated in the same way as non-recycled renewable materials.
Biogenic carbon content per $m^2$ textile floor covering: 0.23 kg C
Corresponding carbon dioxide uptake/emissions: 0.83 kg $CO_2$

## References

**EN 1307**
DIN EN 1307: 2014+A1:2016: Textile floor coverings - Classification

**EN 13501-1**
DIN EN 13501-1:2010-01: Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

**EN 14041**
DIN EN 14041: 2008-05: Resilient, textile and laminate floor coverings - Essential characteristics

**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

**ISO 10874**
DIN EN ISO 10874: 2012-04: Resilient, textile and laminate floor coverings - Classification

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

**ISO 15686**
ISO 15686: Buildings and constructed assets - Service life planning
ISO 15686-1: 2011-05: Part 1: General principles and framework
ISO 15686-2: 2012-05: Part 2: Service life prediction procedures
ISO 15686-7: 2006-03: Part 7: Performance evaluation for feedback of service life data from practice
ISO 15686-8: 2008-06: Part 8: Reference service life and service-life estimation

**Regulation (EU) No. 305/2011**
Regulation No. 305/2011 Construction Products Regulation (CPR) of the European Council and of the European Parliament, April 2011

**CML**
Institute of Environmental Sciences - in Dutch 'Centrum voor Milieuwetenschappen in Leiden' (CML), Leiden, The Netherlands

**ecoinvent 3.6**
ecoinvent, Zurich, Switzerland, database version 3.6, published September 2019

**GaBi database 2020**
GaBi Software-System and Database for Life Cycle Engineering, thinkstep AG, Leinfelden-Echterdingen, service pack 40, 2020

**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

**PCR Part A**
Product Category Rules for Construction Products from the range of Environmental Product Declarations. Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report, V1.8, Berlin: Institut Bauen und Umwelt e.V. (IBU), July 2019

**PCR Part B**
Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU),
Part B: Requirements on the EPD for floor coverings, V1.2, Berlin: Institut Bauen und Umwelt e.V. (IBU), February 2018

**PRODIS**
Product Information System (PRODIS) of the European Carpet Industry, Gemeinschaft umweltfreundlicher Teppichboden e.V (GUT) and European Carpet and Rug Association (ECRA), http://www.pro-dis.info

**REACH**
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Last update: 25.03.2014 (Status: 27.06.2018)

**VDZ e.V.**
Association of German Cement Works, Ed. Environmental Data of the German Cement Industry 2018

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