

# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

|                          |                                      |
|--------------------------|--------------------------------------|
| Owner of the Declaration | Object Carpet GmbH                   |
| Publisher                | Institut Bauen und Umwelt e.V. (IBU) |
| Programme holder         | Institut Bauen und Umwelt e.V. (IBU) |
| Declaration number       | EPD-OBJ-20230572-CBA1-EN             |
| Issue date               | 04.04.2024                           |
| Valid to                 | 03.04.2029                           |

**Tufted carpets - DUO, pile material PA6 max. total pile weight 1100 g/m<sup>2</sup> with polyester backing**  
**Object Carpet**

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



ECO PLATFORM

**EPD**  
VERIFIED

## General Information

### Object Carpet

#### Programme holder

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

#### Declaration number

EPD-OBJ-20230572-CBA1-EN

#### This declaration is based on the product category rules:

Floor coverings, 01.08.2021  
(PCR checked and approved by the SVR)

#### Issue date

04.04.2024

#### Valid to

03.04.2029



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



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

### Tufted carpets - DUO, pile material PA6 max. total pile weight 1100 g/m<sup>2</sup> with polyester backing

#### Owner of the declaration

Object Carpet GmbH  
Marie-Curie Straße 3  
73770 Denkendorf  
Germany

#### Declared product / declared unit

1 m<sup>2</sup> tufted carpet with a pile material of virgin Polyamid 6.

#### Scope:

The manufacturer declaration applies to a group of similar products with a maximum total pile weight of 1100 g/m<sup>2</sup>. The carpet is produced in the Object Carpet production site in Krefeld, Germany. The declaration is only valid in conjunction with a valid GUT-*PRODIS* license of the product. 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 |            |
| <input type="checkbox"/>   | internally |
| <input checked="" type="checkbox"/>  | externally |



Angela Schindler,  
(Independent verifier)

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## Product

### Product description/Product definition

Tufted carpets having a pile material of Polyamid 6 and a Polyester backing consisting of a polyester based precoat covered by a PET felt backing with a recycled content of 92%. The declaration applies to a group of products with a maximum total pile weight of 1100 g/m<sup>2</sup>.

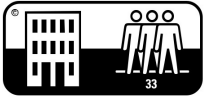
Product descriptions and LCA results for products of this group having a lower total pile weight than 1100 g/m<sup>2</sup> can be taken from the tables of the public EPD-annex. The LCA results always refer to the highest total pile weight of the corresponding pile weight category.

Results for similar products with any other total pile weight can be calculated by using equation 1 given in the annex (see annex chapter: 'General Information on the annex').

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 14041:2018-05, Resilient, textile and laminate floor coverings - Essential characteristics 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 products can be used in all professional area which require class 33 or less.



### Technical Data

The performance data listed in the DoP apply.

| Name                | Value                         | Unit             |
|---------------------|-------------------------------|------------------|
| Product Form        | Tiles or rolls                | -                |
| Type of manufacture | Tufted                        | -                |
| Yarn type           | Polyamid 6                    | -                |
| Secondary backing   | Polyester felt (92% recycled) | -                |
| Total pile weight   | max. 1100                     | g/m <sup>2</sup> |
| Total carpet weight | max. 2200                     | g/m <sup>2</sup> |

## LCA: Calculation rules

### Declared Unit

| Name            | Value | Unit              |
|-----------------|-------|-------------------|
| Declared unit   | 1     | m <sup>2</sup>    |
| Grammage        | 2,2   | kg/m <sup>2</sup> |
| Layer thickness | 0,008 | m                 |
| Gross density   | 275   | kg/m <sup>3</sup> |

The declared unit refers to 1 m<sup>2</sup> produced textile floor covering. Output of module A5 'Assembly' is 1 m<sup>2</sup> installed textile floor covering.

Additional product properties in accordance with *EN 1307* 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 Product Information System *PRODIS* using the *PRODIS* registration number of the product ([www.pro-dis.info](http://www.pro-dis.info)) or on the manufacturer's technical information section ([www.object-carpet.com](http://www.object-carpet.com)).

### Base materials/Ancillary materials

| Name            | Value | Unit |
|-----------------|-------|------|
| Polyamid 6      | 50    | %    |
| Polyester (PES) | 50    | %    |

The specific product covered by the EPD contains substances listed in the ECHA candidate list (14.06.2023) or other carcinogenic, mutagenic or reprotoxic (CMR) substances in categories 1A or 1B which are not on the candidate list exceeding 0.1 percentage by mass: no

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.

### 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.

### System boundary

*Type of EPD:* Cradle-to-gate with options, modules C1-C4, module D, and additional modules A4, A5, B1 and B2.

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

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## 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 (packaging paper) is taken into account as well as the associated carbon dioxide uptake from the air from which this biogenic carbon comes.

## 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 carpet 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 packaging paper 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 carpet 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: The impact from waste incineration (plant with  $R1 > 0.6$ ), generated electricity and steam are listed in the result table as exported energy.

C3-3: Collection of the carpet waste for recovery in the cement industry, waste processing (granulating), transport to the cement plant, emissions from the incineration. 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.

C4-2: The carpet waste leaves the system in module C3-2.

C4-3: The pre-processed carpet 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 carpet waste at the end-of-life,

D-2: Benefits for generated energy due to incineration of carpet 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 carpet in a cement plant.

## Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product's lifespan: Europe

## 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 Sphera MLC (fka GaBi) CUP 2023.02. Remaining data gaps are covered by the ecoinvent 3.9 database 2022.

## 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 accompanying packaging | 0.052 | kg C |

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO<sub>2</sub>.

The following information refers to the declared modules and is the basis for calculations or can be used for further calculations. All indicated values refer to the declared unit of all products with a total pile weight of max. 1100 g/m<sup>2</sup>.

### Transport to the construction site (A4)

| Name  | Value  | Unit              |
|---|--------|-------------------|
| Litres of fuel (truck, EURO 0-6 mix)        | 0.0061 | l/100km           |
| Transport distance                          | 700    | km                |
| Capacity utilisation (including empty runs) | 55     | %                 |
| Gross density of products transported       | 275    | kg/m <sup>3</sup> |

### Installation in the building (A5)

| Name          | Value | Unit |
|---------------|-------|------|
| Material loss | 0.198 | kg   |

Polyethylene packaging waste and installation waste are considered to be incinerated in a municipal waste incineration plant. Cardboard packaging waste is going to be recycled. Preparation of the floor and auxiliaries (adhesives, fixing

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agents, PET connectors, etc.) are not taken into account.

## Maintenance (B2)

The values for cleaning refer to one m<sup>2</sup> floor covering used in commercial areas per year (see annex, chapter 'General Information on use stage'). 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 cleaning)    | 1.5   | 1/year         |
| Maintenance cycle (vacuum cleaning) | 208   | 1/year         |
| Water consumption (wet cleaning)    | 0.004 | m <sup>3</sup> |
| Cleaning agent (wet cleaning)       | 0.09  | kg             |
| Electricity consumption             | 0.314 | kWh            |

Further information on cleaning and maintenance see the [www.object-carpet.com](http://www.object-carpet.com)

## Reference service life

| Name  | Value  | Unit |
|---|--|------|
| Life Span (according to BBSR)   | 10   | a    |
| Declared product properties (at the gate) and finishes  | Corresponds to the specifications of EN 1307           | -    |
| An assumed quality of work, when installed in accordance with the manufacturer's instructions | Conforms to the manufacturer's instructions            | -    |
| Usage conditions, e.g. frequency of use, mechanical exposure                                  | Use in areas defined by use class according to EN 1307 | -    |
| Maintenance e.g. required frequency, type and quality and replacement of components           | According to manufacturer's instructions               | -    |

## 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)

| Name   | Value | Unit |
|--|-------|------|
| Collected as mixed construction waste (scenario 1 and 2) | 2.2   | kg   |
| Collected separately waste type (scenario 3)             | 2.2   | kg   |
| Landfilling (scenario 1)                                 | 2.2   | kg   |
| Energy recovery (scenario 2)                             | 2.2   | kg   |
| Energy recovery (scenario 3)                             | 2.2   | kg   |
| Recycling (scenario 3)                                   | -     | 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) VDZ e.V.

The organic material of the carpet is used as an alternative fuel in a cement kiln. It mainly substitutes for lignite (68.8%), hard coal (23.6%) and petrol coke (7.6%). The inorganic material is substantially integrated into the cement clinker and substitutes for original material input.

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## LCA: Results

The results are valid for all declared products with a maximum total pile weight of 1100 g/m<sup>2</sup>. LCA results for products having a lower total pile weight can be taken from the corresponding tables of the annex. Results for similar products with any other total pile weight can be calculated by using equation 1 given in the annex (see annex chapter: 'General Information on the annex').

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 (see annex, chapter 'General Information on use stage'). Information on un-declared modules: Modules B3 - B7 are not relevant during the service life of the carpet and are therefore not declared. Modules C1, C3/1, C4/2 and C4/3 cause no additional impact (see "LCA: Calculation rules") and are therefore not declared. Module C2 represents the transport for scenarios 1, 2 and 3. Column D represents module D/A5.

Version number of the characterisation factors used : EN 15804+A2 (EF 3.1)

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

## RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m<sup>2</sup> floorcovering

| Parameter      | Unit                             | A1-A3     | A4       | A5       | B1       | B2       | C1 | C2       | C3 | C3/1 | C3/2     | C3/3     | C4 | C4/1      | C4/2 | C4/3 | D         | D/1 | D/2       | D/3       |
|----------------|----------------------------------|-----------|----------|----------|----------|----------|----|----------|----|------|----------|----------|----|-----------|------|------|-----------|-----|-----------|-----------|
| GWP-total      | kg CO <sub>2</sub> eq            | 1.41E+01  | 1.67E-01 | 1.75E+00 | 0        | 5.44E-01 | 0  | 9.02E-03 | ND | ND   | 5.03E+00 | 5.06E+00 | ND | 1.49E-01  | ND   | ND   | -1.41E-01 | 0   | -1.57E+00 | -3.81E-01 |
| GWP-fossil     | kg CO <sub>2</sub> eq            | 1.43E+01  | 1.65E-01 | 1.75E+00 | 0        | 3.44E-01 | 0  | 8.91E-03 | ND | ND   | 5.03E+00 | 5.06E+00 | ND | 1.49E-01  | ND   | ND   | -1.41E-01 | 0   | -1.57E+00 | -3.8E-01  |
| GWP-biogenic   | kg CO <sub>2</sub> eq            | -1.29E-01 | 3.86E-04 | 6.74E-05 | 0        | 2.86E-03 | 0  | 2.09E-05 | ND | ND   | 3.49E-04 | 4.07E-04 | ND | 0         | ND   | ND   | -1.37E-04 | 0   | -1.52E-03 | -1.66E-04 |
| GWP-luluc      | kg CO <sub>2</sub> eq            | 4.73E-03  | 1.56E-03 | 5.72E-04 | 0        | 1.96E-01 | 0  | 8.44E-05 | ND | ND   | 8.84E-06 | 2.21E-04 | ND | 1.25E-04  | ND   | ND   | -8.82E-06 | 0   | -9.8E-05  | -2.12E-04 |
| ODP            | kg CFC11 eq                      | 6.06E-10  | 1.48E-14 | 5.46E-11 | 0        | 3.42E-08 | 0  | 7.98E-16 | ND | ND   | 4.44E-13 | 5.73E-13 | ND | 2.54E-13  | ND   | ND   | -6.95E-13 | 0   | -7.72E-12 | -8.7E-13  |
| AP             | mol H <sup>+</sup> eq            | 2.19E-02  | 1.04E-03 | 2.49E-03 | 0        | 7.8E-04  | 0  | 5.61E-05 | ND | ND   | 4.68E-03 | 4.84E-03 | ND | 4.54E-04  | ND   | ND   | -1.5E-04  | 0   | -1.67E-03 | -1.21E-03 |
| EP-freshwater  | kg P eq                          | 1.97E-05  | 6.15E-07 | 1.84E-06 | 0        | 4.98E-06 | 0  | 3.32E-08 | ND | ND   | 1.29E-07 | 2.25E-07 | ND | 2.91E-05  | ND   | ND   | -7.42E-08 | 0   | -8.25E-07 | -4.53E-07 |
| EP-marine      | kg N eq                          | 6.51E-03  | 5.09E-04 | 8.44E-04 | 0        | 1.97E-04 | 0  | 2.75E-05 | ND | ND   | 2.35E-03 | 2.42E-03 | ND | 1.04E-04  | ND   | ND   | -4.88E-05 | 0   | -5.43E-04 | -4.1E-04  |
| EP-terrestrial | mol N eq                         | 6.12E-02  | 5.65E-03 | 8.41E-03 | 0        | 2.83E-03 | 0  | 3.05E-04 | ND | ND   | 2.64E-02 | 2.72E-02 | ND | 1.14E-03  | ND   | ND   | -5.26E-04 | 0   | -5.84E-03 | -4.49E-03 |
| POCP           | kg NMVOC eq                      | 2.08E-02  | 9.62E-04 | 2.5E-03  | 4.18E-04 | 9.86E-04 | 0  | 5.2E-05  | ND | ND   | 6.01E-03 | 6.15E-03 | ND | 3.3E-04   | ND   | ND   | -1.39E-04 | 0   | -1.54E-03 | -1.28E-03 |
| ADPE           | kg Sb eq                         | 1.2E-06   | 1.1E-08  | 1.09E-07 | 0        | 2.05E-07 | 0  | 5.92E-10 | ND | ND   | 4.28E-09 | 6.38E-09 | ND | 4E-09     | ND   | ND   | -4.18E-09 | 0   | -4.64E-08 | -1.26E-08 |
| ADPF           | MJ                               | 2.85E+02  | 2.3E+00  | 2.6E+01  | 0        | 6.7E+00  | 0  | 1.24E-01 | ND | ND   | 1.64E+00 | 2.24E+00 | ND | 2.26E+00  | ND   | ND   | -2.74E+00 | 0   | -3.04E+01 | -6.98E+01 |
| WDP            | m <sup>3</sup> world eq deprived | 6.79E-01  | 1.95E-03 | 1.05E-01 | 0        | 8.47E-02 | 0  | 1.05E-04 | ND | ND   | 4.81E-01 | 4.82E-01 | ND | -2.14E-03 | ND   | ND   | -5.99E-03 | 0   | -6.65E-02 | -4.82E-02 |

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 m<sup>2</sup> floorcovering

| Parameter | Unit | A1-A3    | A4       | A5        | B1 | B2       | C1 | C2       | C3 | C3/1 | C3/2     | C3/3     | C4 | C4/1     | C4/2 | C4/3 | D         | D/1 | D/2       | D/3       |
|-----------|------|----------|----------|-----------|----|----------|----|----------|----|------|----------|----------|----|----------|------|------|-----------|-----|-----------|-----------|
| PERE      | MJ   | 1.9E+01  | 1.62E-01 | 2.01E+00  | 0  | 2.92E+00 | 0  | 8.77E-03 | ND | ND   | 2.68E-01 | 3.28E-01 | ND | 2.04E-01 | ND   | ND   | -2.15E-01 | 0   | -2.39E+00 | -5.29E-01 |
| PERM      | MJ   | 2.34E-01 | 0        | -2.34E-01 | 0  | 0        | 0  | 0        | ND | ND   | 0        | 0        | ND | 0        | ND   | ND   | 0         | 0   | 0         | 0         |

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|       |                |          |          |           |   |          |   |          |    |    |           |           |    |          |    |    |           |   |           |           |
|-------|----------------|----------|----------|-----------|---|----------|---|----------|----|----|-----------|-----------|----|----------|----|----|-----------|---|-----------|-----------|
| PERT  | MJ             | 1.93E+01 | 1.62E-01 | 1.77E+00  | 0 | 2.92E+00 | 0 | 8.77E-03 | ND | ND | 2.68E-01  | 3.28E-01  | ND | 2.04E-01 | ND | ND | -2.15E-01 | 0 | -2.39E+00 | -5.29E-01 |
| PENRE | MJ             | 2.37E+02 | 2.3E+00  | 2.64E+01  | 0 | 6.71E+00 | 0 | 1.24E-01 | ND | ND | 4.93E+01  | 4.99E+01  | ND | 2.26E+00 | ND | ND | -2.74E+00 | 0 | -3.04E+01 | -6.98E+01 |
| PENRM | MJ             | 4.8E+01  | 0        | -3.15E-01 | 0 | 0        | 0 | 0        | ND | ND | -4.77E+01 | -4.77E+01 | ND | 0        | ND | ND | 0         | 0 | 0         | 0         |
| PENRT | MJ             | 2.85E+02 | 2.3E+00  | 2.6E+01   | 0 | 6.71E+00 | 0 | 1.24E-01 | ND | ND | 1.64E+00  | 2.24E+00  | ND | 2.26E+00 | ND | ND | -2.74E+00 | 0 | -3.04E+01 | -6.98E+01 |
| SM    | kg             | 6.62E-01 | 0        | 5.96E-02  | 0 | 0        | 0 | 0        | ND | ND | 0         | 0         | ND | 0        | ND | ND | 0         | 0 | 0         | 0         |
| RSF   | MJ             | 0        | 0        | 0         | 0 | 0        | 0 | 0        | ND | ND | 0         | 0         | ND | 0        | ND | ND | 0         | 0 | 0         | 0         |
| NRSF  | MJ             | 0        | 0        | 0         | 0 | 0        | 0 | 0        | ND | ND | 0         | 0         | ND | 0        | ND | ND | 0         | 0 | 0         | 0         |
| FW    | m <sup>3</sup> | 4.69E-02 | 1.79E-04 | 5.26E-03  | 0 | 2.9E-03  | 0 | 9.67E-06 | ND | ND | 1.13E-02  | 1.14E-02  | ND | 2.23E-05 | ND | ND | -3.59E-04 | 0 | -3.99E-03 | -5.98E-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 m<sup>2</sup> floorcovering

| Parameter | Unit | A1-A3    | A4       | A5       | B1 | B2       | C1 | C2       | C3 | C3/1 | C3/2     | C3/3     | C4 | C4/1     | C4/2 | C4/3 | D         | D/1 | D/2       | D/3       |
|-----------|------|----------|----------|----------|----|----------|----|----------|----|------|----------|----------|----|----------|------|------|-----------|-----|-----------|-----------|
| HWD       | kg   | 6.12E-08 | 8.51E-12 | 5.53E-09 | 0  | 4.19E-05 | 0  | 4.6E-13  | ND | ND   | 1.86E-10 | 2.04E-10 | ND | 1.9E-10  | ND   | ND   | -3E-10    | 0   | -3.34E-09 | 4.33E-11  |
| NHWD      | kg   | 1.02E-01 | 3.32E-04 | 1.14E-02 | 0  | 6.37E-03 | 0  | 1.79E-05 | ND | ND   | 2.47E-02 | 2.48E-02 | ND | 2.19E+00 | ND   | ND   | -6.62E-04 | 0   | -7.36E-03 | -1.29E-03 |
| RWD       | kg   | 7.72E-03 | 2.97E-06 | 7E-04    | 0  | 4.93E-04 | 0  | 1.61E-07 | ND | ND   | 5.53E-05 | 9.98E-05 | ND | 2.68E-05 | ND   | ND   | -2.41E-04 | 0   | -2.68E-03 | -9.89E-05 |
| CRU       | kg   | 0        | 0        | 0        | 0  | 0        | 0  | 0        | ND | ND   | 0        | 0        | ND | 0        | ND   | ND   | 0         | 0   | 0         | 0         |
| MFR       | kg   | 2.09E-02 | 0        | 1.88E-03 | 0  | 0        | 0  | 0        | ND | ND   | 0        | 0        | ND | 0        | ND   | ND   | 0         | 0   | 0         | 0         |
| MER       | kg   | 0        | 0        | 0        | 0  | 0        | 0  | 0        | ND | ND   | 0        | 0        | ND | 0        | ND   | ND   | 0         | 0   | 0         | 0         |
| EEE       | MJ   | 0        | 0        | 7.64E-01 | 0  | 0        | 0  | 0        | ND | ND   | 8.49E+00 | 0        | ND | 0        | ND   | ND   | 0         | 0   | 0         | 0         |
| EET       | MJ   | 0        | 0        | 1.36E+00 | 0  | 0        | 0  | 0        | ND | ND   | 1.52E+01 | 6.03E+01 | ND | 0        | ND   | ND   | 0         | 0   | 0         | 0         |

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

## RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:

### 1 m<sup>2</sup> floorcovering

| Parameter | Unit              | A1-A3    | A4       | A5       | B1      | B2       | C1 | C2       | C3 | C3/1 | C3/2     | C3/3     | C4 | C4/1     | C4/2 | C4/3 | D         | D/1 | D/2       | D/3       |
|-----------|-------------------|----------|----------|----------|---------|----------|----|----------|----|------|----------|----------|----|----------|------|------|-----------|-----|-----------|-----------|
| PM        | Disease incidence | 1.51E-07 | 6.53E-09 | 1.53E-08 | 0       | 6.82E-08 | 0  | 3.53E-10 | ND | ND   | 1.2E-08  | 1.3E-08  | ND | 4.4E-09  | ND   | ND   | -1.34E-09 | 0   | -1.49E-08 | -1.55E-08 |
| IR        | kBq U235 eq       | 1.14E+00 | 4.29E-04 | 1.03E-01 | 0       | 7.89E-02 | 0  | 2.32E-05 | ND | ND   | 8.6E-03  | 1.53E-02 | ND | 3.96E-03 | ND   | ND   | -3.62E-02 | 0   | -4.02E-01 | -8.76E-03 |
| ETP-fw    | CTUe              | 1.13E+02 | 1.62E+00 | 1.04E+01 | 3.6E-03 | 1.73E+00 | 0  | 8.73E-02 | ND | ND   | 4.27E-01 | 6.69E-01 | ND | 1.93E+00 | ND   | ND   | -1.45E-01 | 0   | -1.62E+00 | -2.62E+01 |
| HTP-c     | CTUh              | 3.69E-09 | 3.27E-11 | 3.38E-10 | 0       | 6.1E-10  | 0  | 1.77E-12 | ND | ND   | 3.6E-11  | 4.18E-11 | ND | 9.89E-11 | ND   | ND   | -1.71E-11 | 0   | -1.9E-10  | -1.05E-10 |
| HTP-nc    | CTUh              | 1.17E-07 | 1.44E-09 | 1.07E-08 | 2.6E-11 | 6.14E-09 | 0  | 7.78E-11 | ND | ND   | 6.33E-10 | 8.75E-10 | ND | 7.9E-09  | ND   | ND   | -6.24E-10 | 0   | -6.93E-09 | -3.44E-09 |
| SQP       | SQP               | ND       | ND       | ND       | ND      | ND       | 0  | ND       | ND | ND   | ND       | ND       | ND | ND       | ND   | ND   | ND        | ND  | ND        | ND        |

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

No substantiated values can be given for the SQP indicator with the existing database.

The result figures given in module B2 refer to a period of 1 year because a reference service life is not declared. They have to be multiplied by the assumed service life (in years) of the floor covering in the building under consideration.

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

## References

### EN 1307

DIN EN 1307: 2014+A1:2016+A2:2018-05: Textile floor coverings - Classification

### EN 13501-1

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### EN 14041

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### EN 15804

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### 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+A1:2021-04: Resilient, textile and laminate floor coverings - Classification

### ISO 14025

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### ISO 14040

DIN EN ISO 14040:2006+A1:2020 Environmental management - Life cycle assessment - Principles and framework

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DIN EN ISO 14044:2006+A1:2018+A2:2020 Environmental management - Life cycle assessment - Requirements and guidelines

### 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: 2017-04: 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

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### General Instructions for the IBU-EPD Program

General Instructions for the EPD-Program of the Institut Bauen und Umwelt e.V., The Preparation of Environmental Product Declarations - EPDs, version 2.0, Institut Bauen und Umwelt e.V., Berlin, January 2021, [www.ibu-epd.de](http://www.ibu-epd.de)

### BBSR

Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR) im Bundesamt für Bauwesen und Raumordnung (BBR), Bonn

### BNB, Nutzungsdauer von Bauteilen Bewertungssystem

Nachhaltiges Bauen (BNB), Nutzungsdauer von Bauteilen, Bundesministerium des Inneren, für Bau und Heimat, 24.02.2017

### ECHA candidate list

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### PCR Part A

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### PCR Part B

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### PRODIS

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### REACH

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