

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

Owner of the Declaration	Fletco Carpets A/S
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-FLE-20240140-CBA1-DE
Issue date	29.11.2024
Valid to	28.11.2029

Woven carpet tiles, pile material polyamide 6.6 maximum total pile weight 510 g/m²

Fletco Carpets A/S

www.ibu-epd.com | <https://epd-online.com>



General Information

Fletco Carpets A/S

Programme holder

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

Declaration number

EPD-FLE-20240140-CBA1-DE

This declaration is based on the product category rules:

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

Issue date

29.11.2024

Valid to

28.11.2029



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



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

Woven carpet tiles, pile material polyamide 6.6 maximum total pile weight 510 g/m²

Owner of the declaration

Fletco Carpets A/S
Mads Clausens Vej 2
7441 Bording
Denmark

Declared product / declared unit

1 m² woven TEXTile carpet having a pile material of Polyamide 6.6

Scope:

The manufacturer declaration applies to a group of products with a maximum total pile weight of 510 g/m². The carpet is woven at the fletco manufacturing site in Bording, Denmark. Dyeing and backing of the carpet is carried out externally

The declaration is only valid in conjunction with a valid *GUT-PROD* license of the specific product.

LCA results for products of the same construction but with a maximum total pile weight of 400 g/m² can be taken from the corresponding tables of the annexe. Specific data for every product within the declared group of products in relation to its total pile weight can be calculated by using equation 1 given in the annexe (see annexe chapter: 'General Information on the annexe').

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR	
Independent verification of the declaration and data according to ISO 14025:2011	
☐	internally
☒	externally



Angela Schindler,
(Independent verifier)

Product

Product description/Product definition

Flat woven carpet tiles having a pile material of polyamide 6.6 (PA 6.6) and a TEXTile backing. The declaration applies to a group of products with a maximum total pile weight of 510 g/m². The recycled content out of total weight amounts to a minimum 16 %. The surface of the carpet is dyed using aqueous dyeing methods.

LCA results for products with a maximum total pile weight of 400 g/m² can be taken from the corresponding tables of the annexe. Results for specific products with any other total pile weight can be calculated by using equation 1 given in the annexe (see annexe chapter: 'General Information on the annexe').

For the placing on the market of the specific 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 areas with heavy use which require class 33 or less.



Technical Data

Constructional data according to EN 1307

Name	Value	Unit
Product Form	Tiles 50 cm x 50 cm	-
Type of manufacture	Woven carpet	-
Dyeing method	Continuous dyeing	-
Yarn type	Polyamide 6.6	-
Secondary backing	TEXTiles (heavy tile backing with a recycled PET felt)	-
Total pile weight max.	510	g/m ²
Total carpet weight max.	3220	g/m ²

LCA: Calculation rules

Declared Unit

Name	Value	Unit
Declared unit	1	m ²
Grammage	3.22	kg/m ²
Layer thickness	0.0045	m
Gross density	715	kg/m ³

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

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to *EN 14041: 2018-05, Resilient, textile and laminate floor coverings - Essential characteristics*. 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.

Base materials/Ancillary materials

Name	Value	Unit
Polyamide 6.6	15,9	%
Polymer dispersion (solid content)	6,5	%
Polyester (PET)	24,4	%
Mineral filler	28,1	%
Aluminium hydroxide	4,6	%
Low-density polyethylene	18,7	%
Glass fibre	1,1	%
Additives	0.9	%

The specific product covered by the EPD contains substances listed in the *ECHA candidate list* (23.01.2024) 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 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

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 calculation of the reference service life according to *ISO 15686* is not possible. Alternatively, a reference service life of 10 years can be assumed, during which the functional and visual quality is guaranteed (*BNB, Nutzungsdauer von Bauteilen*). The technical service life can be significantly longer.

floor covering.

Other declared units are allowed if the conversion is shown transparently.

System boundary

Type of EPD:

Cradle-to-gate with options, modules C1-C4, module D, and additional modules A4, A5, B1, B2.

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

Modules C3, C4 and D are indicated separately for three end-of-life scenarios:

0 - landfill disposal

1 - municipal waste incineration

2 - 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.

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. 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 - B5:

The modules are not relevant within the assumed reference service life of 10 years.

B6 - B7:

No energy and water input are required for the operation of the carpet in the use stage. The modules are not relevant and 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: Landfill disposal needs no waste processing.

C3-1: Impact from waste incineration (plant with $R1 > 0.6$), generated electricity and steam are listed in the result table as exported energy.

C3-2: Collection of the carpet waste for recovery in the cement industry, waste processing (granulating), transport to the cement plant, emissions from the incineration.

C4 Disposal:

C4: Impact from landfill disposal,

C4-1: The carpet waste leaves the system in module C3-2,

C4-2: 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: Benefits for generated energy due to landfill disposal of carpet waste at the end of life,

D-1: Benefits for generated energy due to incineration of carpet waste at the end-of-life (incineration plant with $R1 > 0.6$),

D-2: Benefits for saved fossil energy and saved inorganic material due to recovery of the carpet in a cement plant.

D-3: Benefits for generated energy due to incineration of packaging and installation waste (incineration plant with $R1 > 0.6$),

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* database 2023-2. Remaining data gaps are covered by the ecoinvent 3.9

LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

Name	Value	Unit
Biogenic carbon content in product at factory gate	-	kg C
Biogenic carbon content in accompanying packaging at factory gate	0.04	kg C

1 kg of biogenic carbon is equivalent to 44/12 kg of CO₂.

Transport to the construction site (A4)

Name	Value	Unit
Litres of fuel (truck, EURO 0-6 mix)	0.0089	l/100km
Transport distance	700	km
Capacity utilisation (including empty runs)	55	%
Gross density of products transported	715	kg/m ³

Installation in the building (A5)

Name	Value	Unit
Material loss	0.097	kg

Cardboard packaging waste is considered 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 m² floor covering 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. Based on this useful life the effects of module B2 need to be calculated in order to obtain the overall environmental impacts.

Name	Value	Unit
Maintenance cycle (vacuum cleaning)	208	Number /year
Maintenance cycle (wet cleaning)	1,5	Number /year
Water consumption (wet cleaning)	0.004	m ³
Cleaning agent (wet cleaning)	0.09	kg
Electricity consumption	0.314	kWh

For further information on cleaning and maintenance see www.fletcocarpets.com

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 the use class according to EN 1307	-
Maintenance e.g. required frequency, type and quality and replacement of components	According to the 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 0: 100 % landfill disposal

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

Scenario 2: 100 % recovery 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 0)

+ y % impact (Scenario 1)

+ z % impact (Scenario 2)

with x % + y % + z % = 100 %

Name	Value	Unit
Collected as mixed construction waste (scenarios 0 and 1)	3,22	kg
Collected separately waste type (scenario 2)	3,22	kg
Landfilling (scenario 0)	3,22	kg
Energy recovery (scenario 1)	3,22	kg
Energy recovery (scenario 2)	2,134	kg
Recycling (scenario 2)	1,085	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 2)

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. VDZ e. V.

Column D/3 represents module D/A5.

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 carpet and are therefore not declared. Modules C1, C3, C4/1 and C4/2 cause no additional impact (see "LCA: Calculation rules") and are therefore not declared. Module C2 represents the transport for scenarios 0, 1 and 2. Column D/3 represents module D/A5.

Version number of the characterisation factors used : EN 15804+A2 (based on 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 m² floor covering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2	D/3
GWP-total	kg CO ₂ eq	1.11E+01	2.43E-01	5.15E-01	0	5.15E-01	0	1.35E-02	0	5.76E+00	5.81E+00	2.23E-01	0	0	0	-1.59E+00	-3.43E-01	-4.78E-02
GWP-fossil	kg CO ₂ eq	1.11E+01	2.4E-01	5.14E-01	0	3.15E-01	0	1.33E-02	0	5.76E+00	5.8E+00	2.23E-01	0	0	0	-1.59E+00	-3.43E-01	-4.76E-02
GWP-biogenic	kg CO ₂ eq	-8.11E-02	5.62E-04	2.9E-05	0	3.69E-03	0	3.12E-05	0	3.59E-04	5.65E-04	0	0	0	0	-7.24E-03	-1.09E-04	-2.17E-04
GWP-luluc	kg CO ₂ eq	4.86E-03	2.27E-03	2.23E-04	0	1.96E-01	0	1.26E-04	0	1.17E-04	4.34E-04	1.86E-04	0	0	0	-1.03E-04	-2.05E-04	-3.1E-06
ODP	kg CFC11 eq	9.11E-10	2.15E-14	2.73E-11	0	3.42E-08	0	1.19E-15	0	4.08E-13	6.83E-13	3.8E-13	0	0	0	-1.25E-11	-7.04E-13	-3.74E-13
AP	mol H ⁺ eq	1.94E-02	1.51E-03	7.24E-04	0	7.94E-04	0	8.38E-05	0	3.07E-03	3.31E-03	6.79E-04	0	0	0	-1.98E-03	-1.22E-03	-5.95E-05
EP-freshwater	kg P eq	3.12E-05	8.95E-07	9.77E-07	0	5.23E-06	0	4.97E-08	0	4.48E-07	6.27E-07	4.35E-05	0	0	0	-2.57E-06	-4.41E-07	-7.71E-08
EP-marine	kg N eq	6.49E-03	7.4E-04	2.62E-04	0	1.92E-04	0	4.11E-05	0	1.44E-03	1.55E-03	1.55E-04	0	0	0	-5.8E-04	-3.94E-04	-1.74E-05
EP-terrestrial	mol N eq	6.9E-02	8.21E-03	2.84E-03	0	2.77E-03	0	4.56E-04	0	1.67E-02	1.79E-02	1.71E-03	0	0	0	-6.21E-03	-4.32E-03	-1.86E-04
POCP	kg NMVOC eq	2.2E-02	1.4E-03	8.17E-04	4.18E-04	9.67E-04	0	7.77E-05	0	3.71E-03	3.93E-03	4.94E-04	0	0	0	-1.62E-03	-1.2E-03	-4.85E-05
ADPE	kg Sb eq	1.14E-06	1.59E-08	3.51E-08	0	2.14E-07	0	8.85E-10	0	1.05E-08	1.5E-08	5.98E-09	0	0	0	-1.14E-07	-1.56E-08	-3.41E-09
ADPF	MJ	2.45E+02	3.34E+00	7.51E+00	0	5.93E+00	0	1.85E-01	0	2.01E+00	2.79E+00	3.38E+00	0	0	0	-2.93E+01	-5.41E+01	-8.79E-01
WDP	m ³ world eq deprived	1.11E+00	2.83E-03	5.25E-02	0	9.61E-02	0	1.57E-04	0	6.33E-01	6.36E-01	-3.19E-03	0	0	0	-1.51E-01	-4.21E-02	-4.53E-03

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m² floor covering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2	D/3
PERE	MJ	3.91E+01	2.36E-01	1.38E+00	0	3.79E+00	0	1.31E-02	0	3.78E-01	5.96E-01	3.05E-01	0	0	0	-8.5E+00	-5.28E-01	-2.55E-01
PERM	MJ	1.85E-01	0	-1.85E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	3.93E+01	2.36E-01	1.2E+00	0	3.79E+00	0	1.31E-02	0	3.78E-01	5.96E-01	3.05E-01	0	0	0	-8.5E+00	-5.28E-01	-2.55E-01
PENRE	MJ	1.87E+02	3.35E+00	7.52E+00	0	5.93E+00	0	1.86E-01	0	5.99E+01	6.07E+01	3.38E+00	0	0	0	-2.93E+01	-5.41E+01	-8.79E-01
PENRM	MJ	5.79E+01	0	0	0	0	0	0	0	-5.79E+01	-5.79E+01	0	0	0	0	0	0	0

PENRT	MJ	2.45E+02	3.35E+00	7.52E+00	0	5.93E+00	0	1.86E-01	0	2.02E+00	2.79E+00	3.38E+00	0	0	0	-2.93E+01	-5.41E+01	-8.79E-01
SM	kg	6.03E-01	0	1.81E-02	0	0	0	0	0	0	0	0	0	0	0	0	6.3E-01	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m ³	4.84E-02	2.6E-04	1.91E-03	0	3.26E-03	0	1.45E-05	0	1.49E-02	1.51E-02	3.33E-05	0	0	0	-6.89E-03	-4.77E-03	-2.07E-04

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

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2:

1 m² floor covering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2	D/3
HWD	kg	3.25E-08	1.24E-11	9.82E-10	0	4.19E-05	0	6.87E-13	0	2.17E-10	1.95E-10	2.84E-10	0	0	0	-1.57E-09	-6.25E-11	-4.7E-11
NHWD	kg	2.12E-01	4.82E-04	2.3E-02	0	7.29E-03	0	2.68E-05	0	5.52E-01	5.52E-01	3.28E+00	0	0	0	-1.44E-02	-7.31E-02	-4.33E-04
RWD	kg	5.32E-03	4.32E-06	1.62E-04	0	3.79E-04	0	2.4E-07	0	8.16E-05	1.32E-04	4E-05	0	0	0	-2.26E-03	-1.02E-04	-6.77E-05
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	5.63E-02	0	1.69E-03	0	0	0	0	0	0	6.3E-01	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	2.75E-01	0	0	0	0	0	9.15E+00	0	0	0	0	0	0	0	0
EET	MJ	0	0	4.97E-01	0	0	0	0	0	1.66E+01	6.67E+01	0	0	0	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 m² floor covering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2	D/3
PM	Disease incidence	1.6E-07	9.5E-09	5.51E-09	0	6.82E-08	0	5.28E-10	0	1.34E-08	1.5E-08	6.58E-09	0	0	0	0	-2.24E-08	-5.05E-10
IR	kBq U235 eq	8.61E-01	6.24E-04	2.62E-02	0	6.73E-02	0	3.47E-05	0	1.26E-02	2.09E-02	5.91E-03	0	0	0	0	-1.06E-02	-1.13E-02
ETP-fw	CTUe	9.82E+01	2.35E+00	3.05E+00	3.6E-03	2.07E+00	0	1.31E-01	0	8.49E-01	1.26E+00	2.88E+00	0	0	0	0	-2.04E+01	-1.22E-01
HTP-c	CTUh	3.59E-09	4.75E-11	1.11E-10	0	6.26E-10	0	2.64E-12	0	5.65E-11	6.77E-11	1.48E-10	0	0	0	0	-9.74E-11	-9.72E-12
HTP-nc	CTUh	9.55E-08	2.09E-09	3E-09	2.6E-11	6.16E-09	0	1.16E-10	0	2.17E-09	2.53E-09	1.18E-08	0	0	0	0	-3.93E-09	-2.39E-10
SQP	SQP	ND	ND	ND	ND	ND	0	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

The SQP indicator is not given due to considerable uncertainties in the calculation.

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 experienced with the indicator.

References

EN 1307

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

EN 13501-1

DIN EN 13501-1:2019-05: Fire classification of construction

EN 14041

DIN EN 14041: 2018-05 and DIN EN 14041: 2008-05:
Resilient, textile and laminate floor coverings - Essential characteristics

EN 15804

DIN EN 15804:2012+A2:2019 + AC:2021, 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+A1:2021-04: 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 14040

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

ISO 14044

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

Regulation No. 305/2011 Construction Products Regulation (CPR) of the European Council and of the European

Parliament, April 2011

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

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

Candidate List of substances of very high concern (SVHCs) for authorisation, last update 23.01.2024, European Chemicals Agency (ECHA), Helsinki, Finland

Sphera MLC and LCA FE

Software-System and Database for Life Cycle Engineering, Sphera, Leinfelden-Echterdingen, 2023-2

PCR Part A

Product Category Rules for Building-Related Products and Services Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report according to EN 15804+A2:2019, V1.3, Berlin: Institut Bauen und Umwelt e.V. (IBU), August 2022

PCR Part B

Product Category Rules for Building-Related Products and Services Part B: Requirements on the EPD for floor coverings, V1.4, Berlin: Institut Bauen und Umwelt e.V. (IBU), June 2023

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), June 2017

VDZ e.V.

Association of German Cement Works, Ed. Environmental Data of the German Cement Industry 2020



Publisher

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

+49 (0)30 3087748- 0
info@ibu-epd.com
www.ibu-epd.com



Programme holder

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

+49 (0)30 3087748- 0
info@ibu-epd.com
www.ibu-epd.com



Author of the Life Cycle Assessment

Gemeinschaft umweltfreundlicher Teppichboden
(GUT) e.V.
Schönebergstraße 2
52068 Aachen
Germany

+49 (0)241 96843 410
mail@gut-ev.de
www.gut-ev.org



Owner of the Declaration

Fletco Carpets A/S
Mads Clausens Vej 2
7441 Bording
Denmark

+45 (0)96 60 30 00
fletco@fletco.dk
www.fletcocarpets.com

Annex

For products with a max. total pile weight of 400 g/m²

to the

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	Fletco Carpets A/S
Declaration number	EPD-FLE-20240140-CBA1-EN
Issue date	29.11.2024
Valid to	28.11.2029

www.bau-umwelt.com / <https://epd-online.com>



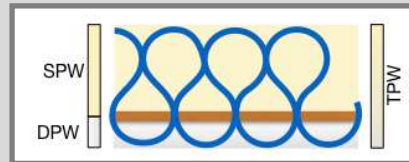
General Information on the annex

The EPD document is valid for all products with a total pile weight lower or equal to the declared maximum pile weight of 510 g/m².

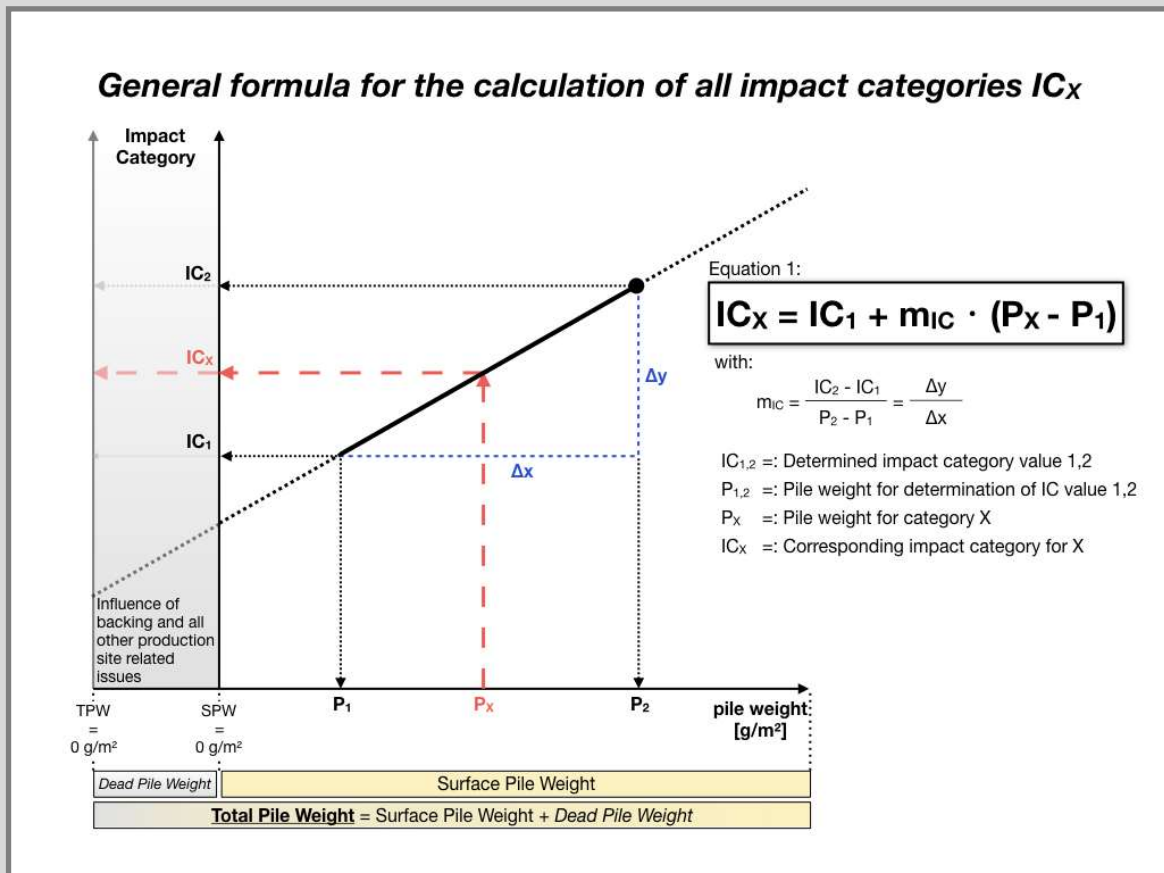
LCA results show a linear correlation with the total pile weight for all impact categories (IC) and all modules (A-D). It is possible to calculate specific LCA results (IC_x) for every carpet (x) within the declared group of products in relation to its total pile weight (P_x).

The total pile weight (TPW) is the sum of surface pile weight (SPW) and dead pile weight (DPW):

$$TPW = SPW + DPW$$



The surface pile weight is the technical relevant value according to EN 1307 and has to be mentioned in technical specification. As shown in the figure below alternatively to the total pile weight the surface pile weight can be used to calculate LCA results (IC_x).



Graph 1: General formula for the calculation of all impact categories IC_x.

1. Information on products with a max total pile weight of 400 g/m²

Complementary technical data

Base materials / Ancillary materials

Name	Value for category	Unit
Polyamide 6.6	12,9	%
Polyester	25,2	%
LDPE	19,3	%
Polymer dispersion (solid content)	6,7	%
Mineral filler	29,1	%
Aluminum hydroxide	4,8	%
Glass fibre	1,1	%
Additives	0,9	%
	0,0	%
	0,0	%

LCA: Declared Unit

Name	Value for category	Unit
Declared unit	1,0	m ²
Grammage	3,11	kg/m ²

LCA: Scenarios and additional technical information

All indicated values refer to the declared functional unit

Transport to the construction site (A4)

Name	Value for category	Unit
Litres of fuel (truck, EURO 0-6 mix)	0,0086	l/100km
Transport distance	700	km
Capacity utilisation (including empty runs)	55	%

Installation in the building (A5)

Name	Value for category	Unit
Material lost	0,09	kg

Maintenance (B2)

Indication per m² and year

Name	Value for category	Unit
Maintenance cycle (wet cleaning)	1,5	1/year
Maintenance cycle (vacuum cleaning)	208	1/year
Water consumption (wet cleaning)	0,004	m ³
Cleaning agent (wet cleaning)	0,09	kg
Electricity consumption	0,314	kWh

End of Life (C1-C4)

Name	Value for category	Unit
Collected as mixed construction waste (scenario 0 and 1)	3,108	kg/m ²
Collected separately (scenario 2)	3,108	kg/m ²
Landfilling (scenario 0)	3,108	kg/m ²
Energy recovery (scenario 1)	3,108	kg/m ²
Energy recovery (scenario 2)	2,020	kg/m ²
Recycling (scenario 2)	1,088	kg/m ²

LCA: Results for products with a max. total pile weight of 400 g/m²

The declared result figures in module B2 have to be multiplied by the assumed service time (in years) of the floor covering in the building considered.

Information on non-relevant modules:
 Modules B3 - B7 are not relevant during the service life of the carpet.
 Module C2 represents the transport for scenarios 0, 1 and 2.

Description of the system boundary				
(X = Included in LCA; MNR = Module not relevant; 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 A1 X transport A2 X manufacturing A3 X	transport from the gate to the site A4 X assembly A5 X	use B1 X maintenance B2 X repair B3 MNR R replacement B4 MNR R refurbishment B5 MNR R operational energy use B6 MNR D operational water use B7 MNR D	de-construction C1 X transport C2 X waste processing C3 X disposal C4 X	reuse, recovery and recycling potential D X

Results of the LCA - Environmental impact: 1 m² floor covering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2	D/3
GWP-total	[kg CO ₂ -eq]	9,37E+00	2,30E-01	4,51E-01	0,00E+00	5,15E-01	0,00E+00	1,28E-02	5,35E+00	5,39E+00	2,11E-01	2,11E-01	0,00E+00	0,00E+00	0,00E+00	-1,43E+00	-2,95E-01	-4,28E-02
GWP-fossil	[kg CO ₂ -eq]	9,45E+00	2,27E-01	4,51E-01	0,00E+00	3,15E-01	0,00E+00	1,26E-02	5,35E+00	5,39E+00	2,11E-01	2,11E-01	0,00E+00	0,00E+00	0,00E+00	-1,42E+00	-2,94E-01	-4,26E-02
GWP-biogenic	[kg CO ₂ -eq]	-8,91E-02	5,32E-04	2,68E-05	0,00E+00	3,69E-03	0,00E+00	2,95E-05	-7,19E-04	5,12E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,48E-03	-8,80E-05	-1,94E-04
GWP-lucluc	[kg CO ₂ -eq]	4,57E-03	2,15E-03	2,10E-04	0,00E+00	1,96E-01	0,00E+00	1,19E-04	1,16E-04	4,16E-04	1,76E-04	1,76E-04	0,00E+00	0,00E+00	0,00E+00	-9,24E-05	-1,78E-04	-2,77E-06
ODP	[kg CFC11-eq]	9,06E-10	2,10E-14	2,72E-11	0,00E+00	3,42E-08	0,00E+00	1,30E-15	3,62E-13	6,22E-13	3,59E-13	3,59E-13	0,00E+00	0,00E+00	0,00E+00	-1,11E-11	-5,92E-13	-3,33E-13
AP	[kg mol H ⁺ eq]	1,65E-02	1,43E-03	6,10E-04	0,00E+00	7,94E-04	0,00E+00	7,93E-05	2,34E-03	2,57E-03	6,41E-04	6,41E-04	0,00E+00	0,00E+00	0,00E+00	-1,77E-03	-1,07E-03	-5,32E-05
EP-fw	[kg P-eq]	2,73E-05	8,47E-07	8,59E-07	0,00E+00	5,23E-06	0,00E+00	4,70E-08	4,33E-07	6,02E-07	4,12E-05	4,12E-05	0,00E+00	0,00E+00	0,00E+00	-2,30E-06	-3,83E-07	-6,89E-08
EP-mar.	[kg N-eq]	5,47E-03	7,00E-04	2,19E-04	0,00E+00	1,92E-04	0,00E+00	3,88E-05	1,07E-03	1,17E-03	1,47E-04	1,47E-04	0,00E+00	0,00E+00	0,00E+00	-5,19E-04	-3,42E-04	-1,56E-05
EP-ter.	[Mol N-eq]	5,84E-02	7,77E-03	2,38E-03	0,00E+00	2,77E-03	0,00E+00	4,31E-04	1,25E-02	1,37E-02	1,28E-03	1,28E-03	0,00E+00	0,00E+00	0,00E+00	-5,56E-03	-3,75E-03	-1,67E-04
POCP	[kg NMVOC-eq]	1,85E-02	1,33E-03	6,81E-04	4,18E-04	9,67E-04	0,00E+00	7,35E-05	2,76E-03	2,96E-03	4,67E-04	4,67E-04	0,00E+00	0,00E+00	0,00E+00	-1,45E-03	-1,04E-03	-4,34E-05
ADPE	[kg Sb-eq]	1,03E-06	1,51E-08	3,16E-08	0,00E+00	2,14E-07	0,00E+00	8,37E-10	1,00E-08	1,43E-08	5,65E-09	5,65E-09	0,00E+00	0,00E+00	0,00E+00	-1,02E-07	-1,40E-08	-3,05E-09
ADPF	[MJ]	2,12E+02	3,16E+00	6,50E+00	0,00E+00	5,93E+00	0,00E+00	1,75E-01	1,81E+00	2,54E+00	3,19E+00	3,19E+00	0,00E+00	0,00E+00	0,00E+00	-2,62E+01	4,52E+01	-7,86E-01
WDP	[m ³ world eq deprived]	1,05E+00	2,68E-03	4,92E-02	0,00E+00	9,61E-02	0,00E+00	1,49E-04	5,91E-01	5,94E-01	-3,02E-03	-3,02E-03	0,00E+00	0,00E+00	0,00E+00	-1,35E-01	-3,60E-02	-4,05E-03

GWP = Global warming potential; **ODP** = Depletion potential of the stratospheric ozone layer; **AP** = Acidification potential of land and water; **EP** = Eutrophication potential (fw = freshwater; mar = marine, ter, Caption = terrestrial; **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 depletion potential

Results of the LCA - Resource use: 1 m² floor covering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2	D/3
PERE	[MJ]	3,64E+01	2,24E-01	1,30E+00	0,00E+00	3,79E+00	0,00E+00	1,24E-02	3,51E-01	5,57E-01	2,88E-01	2,88E-01	0,00E+00	0,00E+00	0,00E+00	-7,60E+00	-4,61E-01	-2,28E-01
PERM	[MJ]	1,85E-01	0,00E+00	-1,85E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,00E-13	-4,00E-13	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	3,66E+01	2,24E-01	1,12E+00	0,00E+00	3,79E+00	0,00E+00	1,24E-02	3,51E-01	5,57E-01	2,88E-01	2,88E-01	0,00E+00	0,00E+00	0,00E+00	-7,60E+00	-4,61E-01	-2,28E-01
PENRE	[MJ]	1,62E+02	3,17E+00	6,51E+00	0,00E+00	5,93E+00	0,00E+00	1,76E-01	5,20E+01	5,27E+01	3,19E+00	3,19E+00	0,00E+00	0,00E+00	0,00E+00	-2,62E+01	-4,52E+01	-7,86E-01
PENRM	[MJ]	5,02E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,02E+01	-5,02E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	2,12E+02	3,17E+00	6,51E+00	0,00E+00	5,93E+00	0,00E+00	1,76E-01	1,81E+00	2,55E+00	3,19E+00	3,19E+00	0,00E+00	0,00E+00	0,00E+00	-2,62E+01	-4,52E+01	-7,86E-01
SM	[kg]	6,03E-01	0,00E+00	1,81E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,30E-01	0,00E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m ³]	4,28E-02	2,46E-04	1,71E-03	0,00E+00	3,26E-03	0,00E+00	1,37E-05	1,39E-02	4,45E-01	3,15E-05	3,15E-05	0,00E+00	0,00E+00	0,00E+00	-6,16E-03	-4,01E-03	-1,85E-04

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 floor covering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2	D/3
HWD	[kg]	3,02E-08	1,17E-11	9,12E-10	0,00E+00	4,19E-05	0,00E+00	6,50E-13	1,88E-10	1,67E-10	2,69E-10	2,69E-10	0,00E+00	0,00E+00	0,00E+00	-1,41E-09	-6,80E-11	-4,22E-11
NHWD	[kg]	1,94E-01	4,56E-04	2,23E-02	0,00E+00	7,29E-03	0,00E+00	2,53E-05	5,50E-01	5,50E-01	3,10E+00	3,10E+00	0,00E+00	0,00E+00	0,00E+00	-1,29E-02	-7,30E-02	-3,88E-04
RWD	[kg]	4,69E-03	4,09E-06	1,43E-04	0,00E+00	3,79E-04	0,00E+00	2,27E-07	7,66E-05	1,24E-04	3,78E-05	3,78E-05	0,00E+00	0,00E+00	0,00E+00	-2,02E-03	-8,97E-05	-6,05E-05
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	4,46E-02	0,00E+00	1,34E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,30E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	0,00E+00	0,00E+00	2,51E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,35E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	[MJ]	0,00E+00	0,00E+00	4,54E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,51E+01	6,16E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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: 1 m² floor covering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3	C3/1	C3/2	C4	C4/1	C4/2	D	D/1	D/2	D/3
PM	[DI]	1,35E-07	8,99E-09	4,69E-09	0,00E+00	6,82E-08	0,00E+00	4,99E-10	1,17E-08	6,22E-09	6,22E-09	6,22E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,04E-08	-4,51E-10
IR	[kBq U235 eq.]	7,61E-01	5,91E-04	2,32E-02	0,00E+00	6,73E-02	0,00E+00	3,28E-05	1,19E-02	5,59E-03	5,59E-03	5,59E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,49E-03	-1,01E-02
ETP-fw	[CTUe]	8,39E+01	2,22E+00	2,61E+00	3,60E-03	2,07E+00	0,00E+00	1,23E-01	8,04E-01	2,72E+00	2,72E+00	2,72E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,94E+01	-1,09E-01
HTP-c	[CTUh]	3,16E-09	4,50E-11	9,79E-11	0,00E+00	6,26E-10	0,00E+00	2,49E-12	5,29E-11	1,40E-10	1,40E-10	1,40E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,42E-11	-8,69E-12
HTP-nc	[CTUh]	8,05E-08	1,98E-09	2,54E-09	2,60E-11	6,16E-09	0,00E+00	1,10E-10	2,09E-09	1,12E-08	1,12E-08	1,12E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,49E-09	-2,14E-10
SQP	[Pt]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

PM = Incidence of diseases due to PM emissions; **IR** = Human exposure efficiency relative to U235; **ETP-fw** = Comparative toxic unit for ecosystems; **HTP-c** = Comparative toxic unit for humans (carcinogenic); **HTP-nc** = Comparative toxic unit for humans (non-carcinogenic); **SQP** = Soil quality index