ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

Owner of the Declaration	Gemeinschaft umweltfreundlicher Teppichboden (GUT) e.V.
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-GUT-20220343-CBG1-EN
Issue date	01.02.2023
Valid to	31.01.2028

Tufted wall-to-wall carpet - luxury class LC3 with a pile material made of polyamide 6 maximum surface pile weight 800 g/m²,

maximum total pile weight 1050 g/m², textile backing with a maximum weight of 250 g/m²

Gemeinschaft umweltfreundlicher Teppichboden (GUT)



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General Information

Gemeinschaft umweltfreundlicher Teppichboden (GUT) e.V.

Programme holder

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

Declaration number

EPD-GUT-20220343-CBG1-EN

This declaration is based on the product category rules:

Floor coverings, 02/2018 (PCR checked and approved by the SVR)

Issue date

01.02.2023

Valid to 31.01.2028

Man liten

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

Hour Verly

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

Product

Product description/Product definition

The declaration applies to tufted wall-to-wall carpets having a pile material of polyamide 6 and a textile backing with a maximum weight of 250 g/m². The products correspond to luxury class LC3 with a limitation of the maximum surface pile weight of 800 g/m² and a maximum total pile weight of 1050 g/m². Colouring and design of the use layer may be achieved by aqueous dyeing methods or by using solution-dyed yarns.

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

Tufted wall-to-wall carpet - luxury class LC3, with a PA 6 pile material, max. surface pile weight 800 g/m², max. total pile weight 1050 g/m², textile backing with a max. weight of 250 g/m²

Owner of the declaration

Gemeinschaft umweltfreundlicher Teppichboden e.V. Schönebergstraße 2 51068 Aachen Germany

Declared product / declared unit

1 m 2 tufted wall-to-wall carpet, luxury class LC3, PA 6 pile material with a textile backing.

Scope:

This sample EPD applies to all products of the member companies of the Gemeinschaft umweltfreundlicher Teppichboden (GUT) e.V. that comply with the product descriptions and are registered in the GUT/PRODIS information system. It is only valid in conjunction with a valid GUT/PRODIS license of the product.

The construction and production data of the registered products are provided by the member companies of the GUT e.V.. The production sites are located in Belgium, Denmark, France, Germany, the Netherlands and Switzerland.

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*

externally

x

internally

Schindle

Angela Schindler

(Independent verifier)

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

The use class of the specific product as defined in *EN 1307* can be found in the Product Information System (*PRODIS*) using the *PRODIS* registration number of the product.

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Technical Data

The technical data describes a fictitious worst-case product representing all products with the described characteristics.

Constructional data according to EN 1307

Name	Value	Unit
	wall-to-wall	
Product Form	carpet on	-
	rolls	
Type of manufacture	Tufted	
	carpet	-
Yarn type	Polyamide	
	6	-
Total carpet weight	max. 2800	g/m²
Surface pile weight	max. 800	g/m²
Secondary backing	Textile	
	backing	-

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	37.5	%
Polyester	6.8	%
Polypropylene	6.8	%
Mineral Filler	33.3	%
Aluminiumhydroxide	5.4	%

LCA: Calculation rules

Declared Unit

Name	Value	Unit
Declared unit	1	m²
Grammage	2.8	kg/m ²

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

The layer thickness of the specific product covered by the EPD 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.

The LCA results refer to the fictitious worst-case product, which covers all products of the members of the GUT e.V. that correspond to the product descriptions and are registered in the *GUT/PRODIS* information system.

System boundary

Type of EPD:

Additives	3.6	%

The base materials refer to the fictitious worst-case product representing all products with the described characteristics.

The specific product covered by the EPD contains substances listed in the *ECHA candidate list* (08.07.2021) 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

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.

Cradle-to-gate with options, module 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:

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 (packaging naper) is taken into account as well as the

(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.

<u>B1 Use:</u>

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.

<u>B3 - B5:</u>

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

<u>B6 - B7:</u>

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:

LCA: Scenarios and additional technical information

Characteristic product properties Information on biogenic carbon

Name	Value	Unit
Biogenic carbon content in accompanying packaging at factory gate	0.005	kg C

1 kg 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)	0.0066	l/100km
Transport distance	700	km

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: 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.

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.

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*, 2021-2. Remaining data gaps are covered by the *ecoinvent 3.7* database, 2020.

Capacity utilisation (including empty runs)	55	%
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Installation in the building (A5)

Name	Value	Unit
Material loss	0.252	kg
Delyethylene peeksging wests and installation wests		

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

Maintenance (B2)

The values for cleaning refer to 1 $\ensuremath{m^2}$ 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)	156	Number /year
Maintenance cycle (wet cleaning)	0.92	Number /year
Water consumption (wet cleaning)	0.0027	m ³
Cleaning agent (wet cleaning)	0.055	kg
Electricity consumption	0.326	kWh

Electricity consumption0.326kWnThe values result from the calculation of a mixed
scenario for use in object areas and in private areas.Maintenance cycle vacuum cleaning: 4 times per week
in object areas, 2 times per week in private areas.Maintenance cycle wet cleaning: 3 times per 2 years in
object areas, 1 time per 3 years in private areas.

Service life

Name	Value	Unit
Life Span (according to BBSR)	10	а
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 manufacturers' 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 % 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 1) + y % impact (Scenario 2)

Name	Value	Unit
Collected as mixed construction waste (scenarios 1 and 2)	2.8	kg
Collected separately (scenario 3)	2.8	kg
Landfilling (scenario 1)	2.8	kg
Energy recovery (scenario 2)	2.8	kg
Energy recovery (scenario 3)	1.716	kg
Recycling (scenario 3)	1.084	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.

<u>Recycling in the cement industry (scenario 3)</u> 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 the original material input. *VDZ e.V.*



LCA: Results

The modules C3/1, C4/2 and C4/3 cause no additional impact (see chapter "LCA: Calculation rules"). Module C2 represents the transport for scenarios 1, 2 and 3. The values in column D result from module A5. DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

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Raw material supply	Transport	Manufacturing
 | 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 | В3 | B4
 | B5
 | B6 | B7 | C1
 | C2 | C3 | C4 |
 | D |
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 | C2 | C3/2 | C3/3
 | C4/1 | D | D/1 | D/2
 | D/3 |
| GW | P-total | [kg (| CO ₂ -Eq.] | 1.48E+ | 1 1.71E-1
 | 2.00E+0 | 0.00E+0 | 3.85E-1
 | 0.00E+0
 | 9.49E-3 | 4.40E+0 | 4.44E+0
 | 1.99E-1 | -2.58E-1 | 10.00E+ | -
165E+0
 | -3.36E-1 |
| GWF | P-fossil | [kg (| CO ₂ -Eq.] | 1.48E+ | 1 1.68E-1
 | 1.98E+0 | 0.00E+0 | 2.62E-1
 | 0.00E+0
 | 9.32E-3 | 4.40E+0 |)4.44E+0
 | 1.99E-1 | -2.56E-1 | 10.00E+0 |
 | -3.36E-1 |
| | biogenie | c [kg (| CO ₂ -Eq.] | 5.25E-2 | 2 2.18E-3
 | 2.30E-2 | 0.00E+0 | 2.99E-3
 | 0.00E+0
 | 1.21E-4 | 5.06E-4 | 9.38E-4
 | 2.37E-8 | -1.31E-3 | 30.00E+ |)-8.34E-3
 | -3.37E-4 |
| | P-luluc | | CO ₂ -Eq.] | 2.85E | 3 9.52E-4
 | 4.45E-4 | |
 |
 | 5.29E-5
5.68E- | 1.15E-4
3.49E- | 2.50E-4
5.60E-
 | 9.66E-5
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P-Eq.] | | 2 1.02E-3
5 5.11E-7
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| EP-r | narine | [kg | N-Eq.] | 6.50E-3 | 3 4.99E-4
 | 8.48E-4 | 0.00E+0 | 1.45E-4
 | 0.00E+0
 | 2.77E-5 | 2.35E-3 | 2.42E-3
 | 1.30E-4 | -9.16E-5 | 50.00E+(|)-5.83E-4
 | -3.60E-4 |
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2 9.44E-4
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| AE | DPE | | Sb-Eq.] | | 6 1.43E-8
 | | |
 |
 | 7.92E-
10 | | 2.30E-8
 | | | |
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| AD | ADPF [MJ] | | 2.96E+ | 2 2.29E+0 | 2.70E+1
 | 0.00E+0 | 4.50E+0 | 0.00E+0
 |
 | 2.13E+0 | 2.71E+0 | 2.83E+0
 | -
4 36E+0 | 0.00E+ | -
278⊑+1 | -
4.69E+1
 | |
| W | /DP | | world-Eq | |
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| WDP Image: | | | | | | | | | | | | | | | | | |
| Captio | | | on potent | ial; POCI | P = Form
 | ation pote | ential of tr | oposphei
 | ric ozone
 | photoch | nemical | oxidants;
 | ADPE = | Abiotic c | depletion | potential
 | |
| | 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 ² | | | |
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5E-1 2.3
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1E+0 2.8
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-4.69E+1
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| Indica
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1.04E-2 (
0.00E+0 (| A4
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0.00E+0
0.00E+0 | 2.35E+0
-2.30E-2
2.33E+0
3.02E+1
-3.18E+0
2.71E+1
9.36E-4
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 | 0.00E+0
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| Indica
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() | A4
1.30E-1
0.00E+0
1.30E-1
2.29E+0
0.00E+0
0.00E+0
0.00E+0
0.00E+0
0.00E+0 | 2.35E+0
-2.30E-2
2.33E+0
3.02E+1
-3.18E+0
2.71E+1
9.36E-4
 | 0.00E+0
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DUTCES US
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se of |
Indica PERI PERI PENF PENF PENF SM RSF NRS FW	COVE tor E M T T RE R R R T R T F F F F F F R R R R R R R R	Unit [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 2 PERE =	A1-A3 2.53E+1 2.30E-2 (.53E+1 4.40E+2 2.55E+1 (.96E+2 1.04E-2 1.04E-2 (.00E+0 (.00E+0 1.60E-2 Use of rerimary er	A4 1.30E-1 0.00E+0 1.30E-1 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 enewablenergy res	2.35E+0 -2.30E-2 2.33E+0 3.02E+1 -3.18E+0 2.71E+1 9.36E-4 0.00E+0 0.00E+0 5.77E-3 e primary	0.00E+0 0.0	2.75E+C 0.00E+C 2.75E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+C 0.00E+C 0.00E+C 2.52E-3 excludin raw mate	0 0.00E++ 0 0 00E++ 0 00E++ 0 00E++ 0 0 00E++ 0 0 00E++ 0 0 00E++ 0 0 00E++ 0 00	7.20E- 0.00E+ 0.00E+ 1.27E- 0.00E+ 1.27E- 0.00E+ 0.	3 3.321 0 0.00E 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 6 1.25E ary energian (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	E-1 4.9 E+0 0.00 E-1 4.9 E+1 5.50 E+1 5.20 E+1 -5.22 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 1.20 E+0 0.00 E+0 1.20 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+1 4.9 E+0 0.00 E+1 4.9 E+1 5.50 E+1 5.50 E+1 5.50 E+1 5.20 E+1 5.50 E+1 5.50 E+1 5.20 E+1 5.50 E+1 5.20 E+1 5.20 E+15.20 E+15.20 E+15.20 E+15.20 E+15.20 E+15.20 E+15.20 E+15	5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.8 5E-1 2.8 5E-1 2.8 5E-1 2.8 5E-1 2.8 5E-1 0.0 5E-1 0.0 5E-1 0.0 5E-1 0.0 5E-2 3.3 5Durces us vable print	2E-1 -1. DE+0 0.0 2E-1 -1. 3E+0 -4. DE+0 0.0 3E+0 -4. DE+0 0.0 DE+0 0	20E+0 C 00E+0 C 20E+0 C 20E+0 C 36E+0 C 00E+0 C 00E	0.00E+0 0.0	7.60E+0 0.00E+0 7.60E+0 2.78E+1 0.00E+0 2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 7.26E-3 ERM = U: PENRE	-4.35E-1 0.00E+0 -4.35E-1 -4.69E+1 0.00E+0 -4.69E+1 6.44E-1 0.00E+0 0.00E+0 -4.20E-3 se of = Use of
Indica PER PER PEN PEN SM RSF NRS	COVE tor E M T RE RM RT RT F F renee renee renee	Unit [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 0 [MJ] 0 [MJ] 0 [MJ]	A1-A3 .53E+1 .33E+2 .53E+1 .40E+2 .55E+1 .40E+2 .55E+1 .55E+1 .40E+2 .00E+0	A4 1.30E-1 1.30E-1 1.30E-1 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 energy res nergy res	2.35E+0 -2.30E-2 2.33E+0 3.02E+1 -3.18E+0 2.71E+1 9.36E-4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 5.77E-3 e primary sources to nergy exis sources	0.00E+0 0.00E+	2.75E+C 0.00E+C 2.75E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+C 0.00E+C 0.00E+C 2.52E-3 excludin aw mate on-reney raw mate	0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++ 0.00E++	0 7.20E- 0 0.00E+ 0 7.20E- 0 1.27E- 0 0.00E+ 0 0.00E+ <td>3 3.320 0 0.006 3 3.321 1 5.456 0 -5.231 1 2.136 0 0.006 0 0.006 0 0.006 6 1.250 ary ene tal use ergy res Total us</td> <td>E-1 4.9 E-0 0.00 E-1 4.9 E-1 4.9 E+1 5.50 E+1 5.2 E+0 0.00 E+0 0.00 E+1 0.0</td> <td>2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 3E+1 2.8 3E+1 0.00 1E+0 2.83 DE+0 0.00 DE+0 0.00</td> <td>2E-1 -1. DE+0 0.02 2E-1 -1. 3E+0 -4. DE+0 0.03 3E+0 -4. DE+0 0.02 DE+0 0.02 DE+0</td> <td>20E+0 C 00E+0 C 20E+0 C 20E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C 14E-3 C aw mate ergy res erials; P ary energines</td> <td>0.00E+0 0.00E+</td> <td>7.60E+0 0.00E+0 -7.60E+0 -7.78E+1 0.00E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 ERM = U: PENRE = Use of urces; SI</td> <td>4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- M = Use</td>	3 3.320 0 0.006 3 3.321 1 5.456 0 -5.231 1 2.136 0 0.006 0 0.006 0 0.006 6 1.250 ary ene tal use ergy res Total us	E-1 4.9 E-0 0.00 E-1 4.9 E-1 4.9 E+1 5.50 E+1 5.2 E+0 0.00 E+0 0.00 E+1 0.0	2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 3E+1 2.8 3E+1 0.00 1E+0 2.83 DE+0 0.00	2E-1 -1. DE+0 0.02 2E-1 -1. 3E+0 -4. DE+0 0.03 3E+0 -4. DE+0 0.02 DE+0	20E+0 C 00E+0 C 20E+0 C 20E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C 14E-3 C aw mate ergy res erials; P ary energines	0.00E+0 0.00E+	7.60E+0 0.00E+0 -7.60E+0 -7.78E+1 0.00E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 ERM = U: PENRE = Use of urces; SI	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- M = Use
Indica PERI PERI PENF PENF SM RSF NRS FW	COVE tor E M T RE RM RT RT F F F F F rene of s	Unit [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 0 [MJ] 0 [M] 0	A1-A3 .53E+1 2.30E-2 (.53E+1 .40E+2 .55E+1 .40E+2 .55E+1 .04E+2 .00E+0 .00	A4 1.30E-1 0.00E+0 1.30E-1 1.30E-1 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 enewable nergy res rimary en nergy res rimary en rimary en nergy res rimary en nergy res rimary en res rimary en res res res res res res res res	2.35E+0 -2.30E+2 2.33E+0 3.02E+1 -3.18E+0 2.71E+1 9.36E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 5.77E-3 e primary sources to hergy ext sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sour	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 1.00E+0 0.0	2.75E+C 0.00E+C 2.75E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 2.52E-3 excludin raw mate on-renev raw mate	0 0.00E+1 0 0.00	0 7.20E- 0 0.00E+ 0 0.720E- 0 1.27E- 0 0.00E+ 1 0.00E+ 0 0.00E+ <td>3 3.320 0 0.00E 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 6 1.251 ary ene tal use ergy res tal use rotal us</td> <td>E-1 4.9 E-0 0.00 E-1 4.9 E-1 5.2 E+1 5.5 E+1 -5.2 E+0 2.7' E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 1.20 ergy ress of renew sources e of nor-</td> <td>5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 3E+1 0.0 1E+0 2.8 3E+1 0.0 5E-0 0.0 5E+0 0.0 5E+0 0.0 5E+2 3.3 0urces us vable prinused as h-renewa enewable 0.0</td> <td>2E-1 -1. DE+0 0.0 2E-1 -1. 3E+0 4. DE+0 0.0 3E+0 4. DE+0 0.0 DE+0 0.0</td> <td>20E+0 C 00E+0 C 20E+0 C 36E+0 C 36E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C 14E-3 C aw mate ergy res erials; P ary enertial</td> <td>0.00E+0 0.00E+</td> <td>-7.60E+0 -0.00E+0 -7.60E+0 -2.78E+1 0.00E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 ERM = U: PENRE = Use of Use of r</td> <td>4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- M = Use</td>	3 3.320 0 0.00E 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 6 1.251 ary ene tal use ergy res tal use rotal us	E-1 4.9 E-0 0.00 E-1 4.9 E-1 5.2 E+1 5.5 E+1 -5.2 E+0 2.7' E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 1.20 ergy ress of renew sources e of nor-	5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 3E+1 0.0 1E+0 2.8 3E+1 0.0 5E-0 0.0 5E+0 0.0 5E+0 0.0 5E+2 3.3 0urces us vable prinused as h-renewa enewable 0.0	2E-1 -1. DE+0 0.0 2E-1 -1. 3E+0 4. DE+0 0.0 3E+0 4. DE+0 0.0 DE+0 0.0	20E+0 C 00E+0 C 20E+0 C 36E+0 C 36E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C 14E-3 C aw mate ergy res erials; P ary enertial	0.00E+0 0.00E+	-7.60E+0 -0.00E+0 -7.60E+0 -2.78E+1 0.00E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 ERM = U: PENRE = Use of Use of r	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- M = Use
Indica PER PER PENF PENF PENF SM RSF NRS FW Captio	tor E M T R E R R R F rene of so	Unit [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 2 [MJ] 2	A1-A3 .53E+1 .30E-2 () .53E+1 .40E+2 .55E+1 .40E+2 .55E+1 .40E+2 .00E+0 .00	A4 1.30E-1 0.00E+0 1.30E-1 1.30E-1 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 enewable nergy res rimary en nergy res rimary en rimary en nergy res rimary en nergy res rimary en res rimary en res res res res res res res res	2.35E+0 -2.30E-2 2.33E+0 3.02E+1 -3.18E+0 2.71E+1 9.36E-4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 5.77E-3 e primary sources to nergy exis sources	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 1.00E+0 0.0	2.75E+C 0.00E+C 2.75E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 2.52E-3 excludin raw mate on-renev raw mate	0 0.00E+1 0 0.00	0 7.20E- 0 0.00E+ 0 0.720E- 0 1.27E- 0 0.00E+ 1 0.00E+ 0 0.00E+ <td>3 3.320 0 0.00E 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 6 1.251 ary ene tal use ergy res tal use rotal us</td> <td>E-1 4.9 E-0 0.00 E-1 4.9 E-1 5.2 E+1 5.5 E+1 -5.2 E+0 2.7' E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 1.20 ergy ress of renew sources e of nor-</td> <td>5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 3E+1 0.0 1E+0 2.8 3E+1 0.0 5E-0 0.0 5E+0 0.0 5E+0 0.0 5E+2 3.3 0urces us vable prinused as h-renewa enewable 0.0</td> <td>2E-1 -1. DE+0 0.0 2E-1 -1. 3E+0 4. DE+0 0.0 3E+0 4. DE+0 0.0 DE+0 0.0</td> <td>20E+0 C 00E+0 C 20E+0 C 36E+0 C 36E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C 14E-3 C aw mate ergy res erials; P ary enertial</td> <td>0.00E+0 0.00E+</td> <td>-7.60E+0 -7.60E+0 -7.60E+0 -2.78E+1 0.00E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 ERM = U: PENRE = Use of Use of r</td> <td>4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- M = Use</td>	3 3.320 0 0.00E 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 6 1.251 ary ene tal use ergy res tal use rotal us	E-1 4.9 E-0 0.00 E-1 4.9 E-1 5.2 E+1 5.5 E+1 -5.2 E+0 2.7' E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 1.20 ergy ress of renew sources e of nor-	5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 3E+1 0.0 1E+0 2.8 3E+1 0.0 5E-0 0.0 5E+0 0.0 5E+0 0.0 5E+2 3.3 0urces us vable prinused as h-renewa enewable 0.0	2E-1 -1. DE+0 0.0 2E-1 -1. 3E+0 4. DE+0 0.0 3E+0 4. DE+0 0.0 DE+0 0.0	20E+0 C 00E+0 C 20E+0 C 36E+0 C 36E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C 14E-3 C aw mate ergy res erials; P ary enertial	0.00E+0 0.00E+	-7.60E+0 -7.60E+0 -7.60E+0 -2.78E+1 0.00E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 ERM = U: PENRE = Use of Use of r	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- M = Use
Indica PER PER PENF PENF PENF SM RSF NRS FW Captio	COVE tor E M T T RE RE RA RT F rene of s JLTS floor	Unit [MJ] 2 [MJ] 2	A1-A3 .53E+1 .30E-2 () .53E+1 .40E+2 .55E+1 .40E+2 .55E+1 .40E+2 .00E+0 .00	A4 1.30E-1 0.00E+0 1.30E-1 1.30E-1 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 enewable nergy res rimary en nergy res rimary en rimary en nergy res rimary en nergy res rimary en res rimary en res res res res res res res res	2.35E+0 -2.30E+2 2.33E+0 3.02E+1 -3.18E+0 2.71E+1 9.36E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 5.77E-3 e primary sources to hergy ext sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sources to the sour	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 1.00E+0 0.0	2.75E+C 0.00E+C 2.75E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 2.52E-3 excludin raw mate on-renev raw mate	0 0.00E+1 0 0.00	0 7.20E- 0 0.00E+ 0 0.720E- 0 1.27E- 0 0.00E+ 1 0.00E+ 0 0.00E+ <td>3 3.320 0 0.00E 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 6 1.251 ary ene tal use ergy res tal use rotal us</td> <td>E-1 4.9 E-1 4.9 E-1 4.9 E-1 4.9 E-1 4.9 E-1 5.5 E-1 5.5 E-1</td> <td>5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 0.0 5E-0 0</td> <td>2E-1 -1. DE+0 0.0 2E-1 -1. 3E+0 4. DE+0 0.0 3E+0 4. DE+0 0.0 DE+0 0.0</td> <td>20E+0 C 00E+0 C 20E+0 C 36E+0 C 36E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C 14E-3 C aw mate ergy res erials; P ary enertial</td> <td>0.00E+0 0.00E+</td> <td>-7.60E+0 -7.60E+0 -7.60E+0 -2.78E+1 0.00E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 ERM = U: PENRE = Use of Use of r</td> <td>4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- M = Use</td>	3 3.320 0 0.00E 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 6 1.251 ary ene tal use ergy res tal use rotal us	E-1 4.9 E-1 4.9 E-1 4.9 E-1 4.9 E-1 4.9 E-1 5.5 E-1	5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 2.3 5E-1 0.0 5E-0 0	2E-1 -1. DE+0 0.0 2E-1 -1. 3E+0 4. DE+0 0.0 3E+0 4. DE+0 0.0 DE+0 0.0	20E+0 C 00E+0 C 20E+0 C 36E+0 C 36E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C 14E-3 C aw mate ergy res erials; P ary enertial	0.00E+0 0.00E+	-7.60E+0 -7.60E+0 -7.60E+0 -2.78E+1 0.00E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 ERM = U: PENRE = Use of Use of r	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- M = Use
Indica PER PER PEN PEN PEN SM RS FW Caption	COVE	Unit [MJ] 2 [MJ] 2	A1-A3 .53E+1 .30E-2 .53E+1 .55E+1 .40E+2 .55E+1 .40E+2 .40E+2 .40E+2 .00E+0 .00E	A4 1.30E-1 0.00E+0 1.30E-1 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 enewable nergy res rimary en nergy res A – W/A A4 1.10E-11	2.35E+0 2.30E+2 2.30E+2 2.33E+0 3.02E+1 3.18E+0 2.71E+1 9.36E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 5.77E-3 e primary sources to hergy exc sources to hergy exc hergy exc hergy exc hergy exc hergy exc hergy exc hergy exc hergy exc hergy exc herg	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 renergy used as r cluding n used as renewable ATEC B1 0.00E+0	2.75E+C 0.00E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+	0 0.00E+1 0 0.00E+1 1 0.00	0 7.20E- 0 0.00E+ 0 1.27E- 0 1.27E- 0 0.00E+ x NRF water To OUTP C2 0 6.08E+	3 3.321 0 0.005 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 0 0.00E 0 0.00E 6 1.251 ary enertal use ergy reserved tal use rotal use rotal use UT FI C3 3 3.35E	E-1 4.9 E-1 4.9 E-1 4.9 E-1 4.9 E-1 5.5 E+1 5.5 E+1 5.2 E+0 2.7 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 2.7 E+0 0.00 E-1 2.7 E-0 0.00 E-1 2.7 E-0 0.00 E-1 2.7 E-0 0.00 E-2 2.7 E-0 0.00 E-2 2.7 E-0 0.00 E-0	5E-1 2.3 DE-0 0.00 5E-1 2.3 DE+1 2.8 3E+1 0.00 DE+0 0.00 DE+0 0.00 DE+0 0.00 DE+0 0.00 DE+0 0.00 DE+2 3.3 Durces us vable prin used as -renewa enewable accorr 3/3 C DE-10 JE-10 4.34	2E-1 -1. 0E+0 0.0 2E-1 -1. 3E+0 -4. 0E+0 0.0 3E+0 -4. 0E+0 0.0 0E+0 0	20E+0 C 00E+0 C 20E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C aw mate ergy res erary ener dary fue o EN 0 EN 0 EN 0 EN	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 15804 D/1 0.00E+0	7.60E+0 0.00E+0 7.60E+0 2.78E+1 0.00E+0 2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 7.26E-3 ERM = U: PENRE = Use of Use of r +A2: D/2 -3.77E-9	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- M = Use net fresh D/3 -1.74E-10
Indica PER PER PEN PEN SM RS FW Caption Caption I m ² 1 Indica HWC NHW	COVE	Unit [MJ] 2 [MJ] 2	A1-A3 .53E+1 .30E-2 .53E+1 .40E+2 .55E+1 .40E+2 .55E+1 .40E+2 .00E+0 .00E	A4 1.30E-1 1.30E-1 1.30E-1 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 enewable nergy res rimary en nergy res al; RSF = A – WA A4 1.10E-11 3.28E-4	2.35E+0 2.30E+2 2.30E+2 2.33E+0 3.02E+1 -3.18E+0 2.71E+1 9.36E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 5.77E-3 e primary sources the primary source	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 SATEG B1 0.00E+0 0.00E+0	2.75E+C 0.00E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+C 0.00E+C 0.00E+C 2.52E-3 excludin aw mate on-renev raw mate e second ORIES B2 2.56E-5 5.14E-3	0 0.00E+1 0 0.00E+1 S AND C1 0.00E+1 0 0.00E+1 0	0 7.20E- 0 0.00E+ 1 7.20E- 1 1.27E- 1 1.27E- 1 0.00E+	3 3.321 0 0.000 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 0.	E-1 4.9 E-1 4.9 E+0 0.00 E+1 5.50 E+1 5.51 E+0 2.7 E+0 0.00 Sources e of nor-resources E-0 Sources E-0 Sources E-0 Sources E-10 3.59 E-1 5.42	3/2 2.3 DE+0 0.00 5E-1 2.3 DE+1 2.8 3E+1 0.01 1E+0 2.8 DE+0 0.00 DE-2 3.3 DURCES Used S State DURCES	2E-1 -1. 0.1 2E-1 -1. 3E+0 0.1 2E-1 -1. 3E+0 4. 0E+0 0.1 0E+0 0.2 0E+0 0.2 0E+0 -2 0E+0	20E+0 C 20DE+0 C 00DE+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C aw mate ergy res erials; P ary ener dary fue C 0 EN 0 EN 0 EN 0 EN 0 EN	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 15804 D/1 0.00E+0 0.00E+0 0.00E+0	-7.60E+0 0.00E+0 -7.60E+0 -2.78E+1 0.00E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 FRM = U.Se of USe of r +A2: 	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.420E-3 se of = Use of non- M = Use tfresh D/3 1.74E-10 -7.25E-2
Indica PER PER PEN PEN PEN SM RS FW Caption	COVE	Unit [MJ] 2 [MJ] 2	A1-A3 .53E+1 .30E-2 .53E+1 .40E+2 .55E+1 .40E+2 .55E+1 .40E+2 .55E+1 .40E+2 .55E+1 .00E+0	A4 1.30E-1 1.30E-1 2.29E+0 0.00E+0 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 enewable nergy real rimary en nergy real al; RSF = A – WA A4 1.10E-11 3.28E-4 2.82E-6	2.35E+0 2.30E+2 2.30E+2 2.33E+0 3.02E+1 3.18E+0 2.71E+1 9.36E+4 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 5.77E-3 e primary sources to hergy exc sources to hergy exc hergy exc hergy exc hergy exc hergy exc hergy exc hergy exc hergy exc hergy exc herg	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 B1 0.00E+0 0.00E+0 0.00E+0 0.00E+0	2.75E+C 0.00E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 2.52E-3 excludin aw mate on-renev raw mate e second ORIES B2 2.56E-5 5.14E-3 3.74E-4	0 0.00E+1 0 0.00E+1 S AND C1 0 0.00E+1 0 0.00E+1	0 7.20E- 0 0 7.20E- 0 0 7.20E- 1.27E- 0 0 1.27E- 0 0 0.00E+ 0	3 3.321 0 0.000 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 0 0.00E 6 1.251 ary energy reserves regy reserves regy reserves T FI C33 3 3.35E 5 5.422 7 7.221	-1 4.92 ++0 0.00 =-1 4.92 =+1 5.50 =+1 5.50 =+1 5.50 =+1 5.50 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =-0 0.00 =-0 0.00 =-0 0.00 =-0 0.00 =-0 0.00 =-0 0.00 =-0 0.00 =-0 0.00 =-0 0.00 =-0 0.00 =-0 0.00 =-0 0.00 =-0 0.00	32 2.3 DE+0 0.00 5E-1 2.3 DE+1 2.8 3E+1 0.01 1E+0 2.8 DE+1 2.8 3E+1 0.00 DE+0 0.00 BE-0 4.34 DE-1 2.7 4E-4 3.4	2E-1 -1. DE+0 0.0 2E-1 -1. 3E+0 -4. DE+0 0.1 3E+0 -4. DE+0 0.0 DE+0 0.2 DE+0 0	20E+0 C 20E+0 C 20E+0 C 20E+0 C 20E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C 0 EN	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 15804 D/1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0	-7.60E+0 -7.60E+0 -7.60E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 RM = U: PENRE = Use of r +A2: D/2 -3.77E-9 -1.40E-2 -2.18E-3	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- V = Use of non- V = Use the fresh D/3 1.74E-10 -7.25E-2 -8.92E-5
Indica PER PER PEN PEN PEN SM SM SM SM SM Captio	COVE	Unit [MJ] 2 [MJ] 2	A1-A3 .53E+1 2.30E-2 .53E+1 .53E+1 .53E+1 .53E+1 .53E+1 .53E+1 .00E+0 .00E+0 .00E+0 Use of re- rimary er wable pr rimary er wable pr rimary er wable pr rimary er wable pr rimary er able the the the the the the the the the th	A4 1.30E-1 0.00E+0 1.30E-1 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 enewable nergy rea rimary en nergy rea rimary en nergy rea timery rea timery en t	2.35E+0 -2.30E+2 2.33E+0 3.02E+1 -3.18E+0 2.71E+1 9.36E4 0.00E+0 5.77E-3 e primary sources to hergy ex- sources to hergy ex- sources to the primary sources to hergy ex- sources	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 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0	2.75E+C 0.00E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 2.52E-3 excludin aw mate on-renev raw mate e second concert 2.56E-5 5.14E-3 3.74E-4 0.00E+C 0.00E+C 0.00E+C	0 0.00E+1 0 0.00E+1	0 7.20E- 0 0.00E+ 0 7.20E- 1 7.20E- 1 1.27E- 0 0.00E+ 0 0.608E- 0 1.82E- 0 1.82E- 0 1.82E- 0 1.82E- 0 1.62E+ 0 0.00E+	3 3.321 0 0.000 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 0 0.00E 0 0.00E 1.251 ary energy reserved tal use ary energy reserved tal use	E-1 4.9 E-1 4.9 E+0 0.00 E-1 4.9 E+1 5.50 E+1 5.22 E+0 0.00 E+1 5.4 E+5 1.1 E+5 1.1 E+0 0.00 E+0 6.4	3/2 2.3 DE+0 0.0 5E-1 2.3 DE+1 2.8 3E+1 0.0 DE+0 0.0 DE-0 0.0 DE-0 0.0 DE-0 0.0 DE-10 4.34 DE+0 0.0 4E-4 3.4 DE+0 0.0	2E-1 -1. DE+0 0.0 2E-1 -1. 3E+0 -4. DE+0 0.0 3E+0 -4. DE+0 0.0 DE+0 0.0 DE+0 0.0 DE+0 0.0 DE+0 0.0 DE+0 0.0 DE+0 0.0 DE+0 0.0 HE-10 -5.9 2E+0 -2. 6E-5 -3. DE+0 0.0 DE+0	20E+0 C 20E+0 C 20E+0 C 20E+0 C 20E+0 C 20E+0 C 36E+0 C 00E+0 C aw mate ergy res ergary energidary fue D 0 EN 0 C 0 C 0 C 0 C	0.00E+0 0.0	-7.60E+0 -7.60E+0 -7.60E+0 -7.60E+0 -2.78E+1 0.00E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 ERM = U2 PENRE = Use of r PENRE = Use of r +A2: D/2 -3.77E-9 -1.40E-2 -2.18E-3 0.00E+0 0.00E+0 0.00E+0	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 0.00E+0 4.20E-3 se of = Use of non- V = Use of tresh D/3 1.74E-10 -7.25E-2 8.92E-5 8.92E-5 8.92E-5 8.92E-5 8.92E-5
Indica PER PER PENF PENF SM RSF NRS FW Caption RESU 1 m ² 1 Indica HWD NHW RWD CAPTON	COVE	Unit [MJ] 2 [MJ] 2	A1-A3 .53E+1 .30E-2 .53E+1 .53E+1 .55E+1 .40E+2 .55E+1 .00E+0 .00E	A4 1.30E-1 1.30E-1 1.30E-1 1.30E-1 1.30E-1 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 enewable nergy rearimary en nergy rearimary en nergy rea nergy rea A – W/A A4 1.10E-11 3.28E-4 2.82E-6 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0	2.35E+0 2.30E+2 2.30E+2 2.33E+0 3.02E+1 3.18E+0 2.71E+1 9.36E+4 0.00E+0 5.77E-3 e primary sources to hergy exc sources to hergy exc hergy exc hergy exc hergy exc hergy exc hergy exc herg	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 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0	2.75E+C 0.00E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 2.52E-3 excludin aw mate e second 0.00E+C 2.52E-5 5.14E-3 3.74E-4 0.00E+C 0.00	0 0.00E+1 0 0.00E+1 g renewa srials; PE wable pri erials; PE dary fuels C1 0 0.00E+1 0 0 00E+1 0 0	0 7.20E- 0 0.00E + 0 1.27E- 0 1.27E- 0 0.00E +	3 3.321 0 0.005 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 0 0.00E 0 0.00E 6 1.25I ary ene tal use argy rese tal use tal u	E-1 4.9 E-1 4.9 E+0 0.00 E-1 4.9 E+1 5.50 E+1 5.21 E+0 2.77 E+0 0.00 E+0 0.00 E+0 0.00 E+0 2.72 E+0 0.00 E+2 1.22 ergy ress of renew sources e of non of non-r 0 C C E-10 3.59 E-1 5.4 E-5 1.1 E-5 1.7 E+0 0.00	3/2 2.3 DE+0 0.00 5/E-1 2.3 DE+1 2.8 DE+1 2.8 DE+1 2.8 DE+1 2.8 DE+1 2.8 DE+1 2.8 DE+0 0.00 DE+0 0.00 DE+2 3.3 DURCES UX vable prin used as n-renewa enewable 3/3 C - 3/3 C DE+0 0.0 DE-10 4.3 DE+1 2.7 ME-14 3.4 DE+0 0.0 DE+0 0.0	2E-1 -1. 0E+0 0.0 2E-1 -1. 3E+0 -4. 0E+0 0.0 3E+0 -4. 0E+0 0.0	20E+0 C 20E+0 C 00E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C aw mate ergy res erals; F ary rener dary fue C 0 EN 0 C 0 EN 0 EN 0 C 0 C 0 C 0 C 0 C 0 C	0.00E+0 0.00E+0	-7.60E+0 -7.60E+0 -7.60E+0 -7.60E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 ERM = U: PENRE = Use of Use of r +A2: D/2 -3.77E-9 -1.40E-2 -2.18E-3 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 4.20E-3 se of = Use of non- M = Use of non- M = Use t fresh D/3 1.74E-10 -7.25E-2 -8.92E-5 0.00E+0 0.00E+0 0.00E+0
Indica PER PER PENF PENF PENF SM RSF NRS FW Caption 1 m ² 1 Indica HWC NHW RWL CRU MFF EEE	COVE	Unit [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 OF Th coveri 0 Unit [kg] 2 [kg] 2 [kg] 2 [kg] 2 [kg] 2 [kg] 0 [kg] 2 [kg] 2 [kg] 0 [MJ] 0 0 [MJ] 0	A1-A3 .53E+1 .30E+2 .53E+1 .35E+1 .55E+1 .40E+2 .55E+1 .40E+2 .40E+2 .40E+2 .00E+0 .00E	A4 1.30E-1 1.30E-1 1.30E-1 2.29E+0 0.00E+0 2.29E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 nergy res rimary er nergy re al; RSF = A - W/ A4 1.10E-11 3.28E-4 2.82E-6 0.00E+0 0	2.35E+0 2.30E+2 2.30E+2 2.33E+0 3.02E+1 3.18E+0 2.71E+1 9.36E+4 0.00E+0 5.77E-3 e primary sources to hergy exists sources to hergy exi	0.00E+0 0.00E+0	2.75E+C 0.00E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 5.14E-3 3.74E-4 0.00E+C 0.00E+	0.00000000000000000000000000000000000	0 7.20E- 0 0.00E + 0 1.27E- 0 1.27E- 0 1.27E- 0 0.00E + 0 0.608E - 0 1.82E- 0 0.00E +	3 3.321 0 0.005 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 0 0.00E 0 0.00E 6 1.251 ary ene tal use ergy reserved tal use ergy reserved T FI C3 3 3.35E 5 5.421 7 7.221 0 0.00E 0 0.00E 0 0.00E 0 0.00E 0 0.00E 0 0.00E	E-1 4.9 E-1 4.9 E+0 0.00 E-1 4.9 E+1 5.50 E+1 5.21 E+0 0.00 E+1 5.22 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+0 0.00 E+2 1.22 argy ress of non-r OWS 0 E-10 3.59 E-1 5.41 E-5 1.11 E-5 1.14 E+0 0.00 E+1 5.41 E+0 0.40 E+0 0.42	3/2 2.3 DE+0 0.00 5E-1 2.3 DE+1 2.8 3E+1 0.00 DE+0 0.00 DE-10 4.34 DE-10 4.34 DE+0 0.00 DE-11 4.34 DE+0 0.00 DE+0 0.00 DE+0 0.00 DE+0 0.00 DE+0 0.00 DE+0 0.00	2E-1 -1. 0E+0 0.0 2E-1 -1. 3E+0 -4. 0E+0 0.0 3E+0 -4. 0E+0 0.0	20E+0 C 20E+0 C 00E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C aw mate ergy res erals; F ary rene dary fue D 91E-10 C 20E-3 C 432-4 C 00E+0 C	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 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0	-7.60E+0 -7.60E+0 -7.60E+0 -7.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 IRM = U- PENRE = Use of Use of r +A2: D/2 -3.77E-9 -1.40E-2 -2.18E-3 0.00E+0 -7.26E-3 -7.26	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 4.20E-3 se of = Use of non- V = Use of non- V = Use of non- V = Use t fresh D/3 1.74E-10 -7.25E-2 -8.92E-5 0.00E+0 0.00E+0 0.00E+0 0.00E+0
Indica PER PER PENF PENF PENF SM RSF NRS FW Caption RESU 1 m ² 1 Indica HWD NHW RWD CRF MEF	COVE	Unit [MJ] 2 [MJ] 2 [MJ] 2 [MJ] 0 [MJ] 0 [MJ] 0 [MJ] 0 [M] 0 [M] 0	A1-A3 .53E+1 .30E-2 .53E+1 .35E+1 .35E+1 .40E+2 .55E+1 .40E+2 .40E+2 .40E+2 .00E+0 .00E	A4 1.30E-1 0.00E+0 1.30E-1 2.29E+0 0.00E+0 2.29E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.47E-4 enewable nergy resimary energy real; RSF = A - W/A 1.10E-11 3.28E-4 2.82E-6 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0	2.35E+0 2.30E+2 2.30E+2 2.33E+0 3.02E+1 3.18E+0 2.71E+1 9.36E+4 0.00E+0 5.77E-3 e primary sources to hergy exists sources to hergy exi	0.00E+0 0.00E+0	2.75E+C 0.00E+C 4.50E+C 0.00E+C 4.50E+C 0.00E+	0.00000000000000000000000000000000000	0 7.20E- 0 0.00E + 0 1.27E- 0 1.27E- 0 0.00E + 0 0.608E - 0 1.82E- 0 0.00E +	3 3.321 0 0.005 3 3.321 1 5.45E 0 -5.231 1 2.13E 0 0.00E 0 0.00E 0 0.00E 0 0.00E 6 1.251 ary ene tal use ergy rest otal u	-1 4.9 +-0 0.00 =-1 4.9 =+0 0.00 =+1 5.50 =+1 5.50 =+1 5.21 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =-10 0.00 =-10 0.52 =-10 3.52 =-1 5.41 =-5 1.14 =-5 1.14 =-0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+0 0.00 =+1 5.22	3/2 2.3 DE+0 0.0 D5E-1 2.3 DE+1 2.8 DE+1 2.8 DE+1 2.8 DE+1 2.8 DE+1 2.8 DE+1 2.8 DE+0 0.00 DE+0 0.00 DE+0 0.00 DE+0 0.00 DE+0 0.00 DE+2 3.3 DURCEVER wable prinused as n-renewa enewable BE-10 4.3/2 DE-1 2.7 ME-1 0.00 DE+0 0.00	2E-1 -1. 0E+0 0.0 2E-1 -1. 3E+0 -4. 0E+0 0.0	20E+0 C 20E+0 C 00E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C 36E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C 00E+0 C aw mate ergy res erals; F F ary energidary fue C 0 EN 0 C 0 C 0 C 0 C 0 C 0 C 0 C 0 C 0 C <	0.00E+0 0.00E+0	-7.60E+0 -7.60E+0 -7.60E+0 -2.78E+1 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 -7.26E-3 IRM = U- PENRE = Use of Use of r +A2: D/2 -3.77E-9 -1.40E-2 -2.18E-3 0.00E+0 0	4.35E-1 0.00E+0 4.35E-1 4.69E+1 0.00E+0 4.69E+1 6.44E-1 0.00E+0 4.20E-3 se of = Use of non- V = Use of non- V = Use of non- V = Use t fresh D/3 1.74E-10 -7.25E-2 -8.92E-5 0.00E+0 0.00E+0 0.00E+0 0.00E+0



	thermal energy														
RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:															
1 m ² floor covering															
Indicator	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3/2	C3/3	C4/1	D	D/1	D/2	D/3
PM	[Disease Incidence]	1.64E-7	5.88E-9	1.70E-8	0.00E+0	4.27E-8	0.00E+0	3.26E-10	1.65E-8	1.76E-8	5.65E-9	-2.79E-9	0.00E+0	-1.78E-8	-2.18E-8
IRP	[kBq U235- Eq.]	8.79E-1	4.13E-4	8.04E-2	0.00E+0	6.58E-2	0.00E+0	2.29E-5	1.10E-2	1.81E-2	5.11E-3	-5.81E-2	0.00E+0	-3.69E-1	-9.27E-3
ETP-fw	[CTUe]	1.30E+2	1.59E+0	1.19E+1	3.60E-3	2.03E+0	0.00E+0	8.80E-2	9.15E-1	1.25E+0	2.76E+0	-9.57E-1	0.00E+0	-6.07E+0	-8.13E+0
HTP-c	[CTUh]	4.48E-9	3.21E-11	4.12E-10	0.00E+0	3.90E-10	0.00E+0	1.78E-12	4.96E-11	5.73E-11	1.24E-10	-4.40E- 11	0.00E+0	-2.80E- 10	-8.55E- 11
HTP-nc	[CTUh]	1.93E-7	1.90E-9	1.78E-8	2.60E-11	6.19E-9	0.00E+0	1.05E-10	2.86E-9	3.24E-9	1.04E-8	-1.69E-9	0.00E+0	-1.08E-8	-4.84E-9
SQP		ND	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 Caption 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 ionizingradiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in undergroundfacilities. Potential ionizing radiation from the soil, from 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 or as there is limited experience with the indicator.

References

FN 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 products and building elements - Part 1: Classification using data from reaction to fire tests

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

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, 08.07.2021, European Chemicals Agency (ECHA), Helsinki, Finland

ecoinvent

ecoinvent, Zurich, Switzerland, database version 3.7, published September 2020

GaBi database

GaBi Software-System and Database for Life Cycle Engineering, thinkstep AG, Leinfelden-Echterdingen, 2022-1

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, V1.2, Berlin: Institut Bauen und Umwelt e.V. (IBU), November 2021

PCR Part B

Product Category Rules for Building-Related Products and Services

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), June 2017, last update: 08.07.2021

VDZ e.V.

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

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