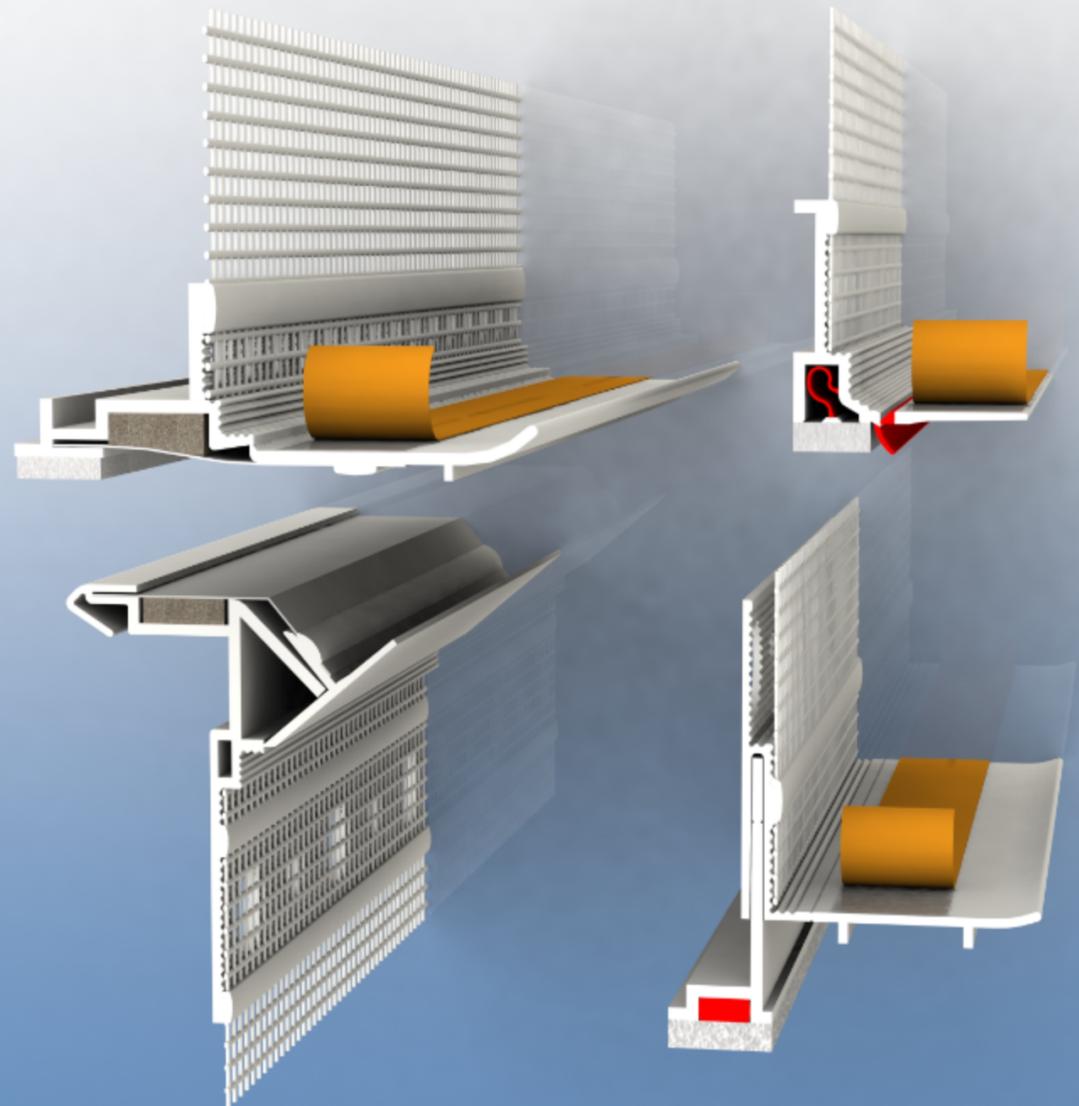


Environmental Product Declaration (EPD)
According to ISO 14025 and EN
15804+A2:2019

Profile Solution: ETIC- System Profiles FAP3D210 (product group 3)

| | |
|----------------------|--|
| Registration number: | EPD-Kiwa-EE-195189-EN |
| Issue date: | 05-06-2025 |
| Valid until: | 05-06-2030 |
| Declaration owner: | K-Uni Kunststoffproduktions- und Handels GmbH |
| Publisher: | Kiwa-Ecobility Experts |
| Programme operator: | Kiwa-Ecobility Experts |
| Status: | verified |



1 General information

1.1 PRODUCT

Profile Solution: ETIC-System Profiles FAP3D210 (product group 3)

1.2 REGISTRATION NUMBER

EPD-Kiwa-EE-195189-EN

1.3 VALIDITY

Issue date: 05-06-2025

Valid until: 05-06-2030

1.4 PROGRAMME OPERATOR

Kiwa-Ecobility Experts
Wattstraße 11-13
13355 Berlin
DE



Raoul Mancke

(Head of programme operations, Kiwa-Ecobility Experts)



Dr. Ronny Stadie

(Verification body, Kiwa-Ecobility Experts)

1.5 OWNER OF THE DECLARATION

Manufacturer: K-Uni Kunststoffproduktions- und Handels GmbH

Address: Triglavstraße 16 , A-9500 Villach, Austria

E-mail: office@k-uni.at

Website: <https://www.k-uni.at/>

Production location: FAM Immo d.o.o.

Address production location: Jertovec 202b, 49282 Konjscina, Croatia

1.6 VERIFICATION OF THE DECLARATION

The independent verification is in accordance with the ISO 14025:2011. The LCA is in compliance with ISO 14040:2006 and ISO 14044:2006. The EN 15804+A2:2019 serves as the core PCR.

Internal External



Elisabeth Amat Guasch, Greenize

1.7 STATEMENTS

The owner of this EPD shall be liable for the underlying information and evidence. The programme operator Kiwa-Ecobility Experts shall not be liable with respect to manufacturer data, life cycle assessment data and evidence.

1.8 PRODUCT CATEGORY RULES

Kiwa-Ecobility Experts (Kiwa-EE) – General Product Category Rules (2022-02-14)

1.9 COMPARABILITY

In principle, a comparison or assessment of the environmental impacts of different products is only possible if they have been prepared in accordance with EN 15804+A2:2019. For the evaluation of the comparability, the following aspects have to be considered in particular: PCR used, functional or declared unit, geographical reference, the definition of the system boundary, declared modules, data selection (primary or secondary data, background database, data quality), scenarios used for use and disposal phases, and the life cycle inventory (data collection, calculation methods, allocations, validity period). PCRs

1 General information

and general program instructions of different EPD program operators may differ. Comparability needs to be evaluated. For further guidance, see EN 15804+A2:2019 and ISO 14025.

1.10 CALCULATION BASIS

LCA method R<THINK: Ecobility Experts | EN15804+A2

LCA software*: Simapro 9.6

Characterization method: R<THINK characterization method (see references for more details)

LCA database profiles: ecoinvent (for version see references)

Version database: v3.19 (20250306)

** Simapro is used for calculating the characterized results of the Environmental profiles within R<THINK.*

1.11 LCA BACKGROUND REPORT

This EPD is generated on the basis of the LCA background report 'Profile Solution: ETIC-System Profiles FAP3D210 (product group 3)' with the calculation identifier ReTHiNK-95189.

2 Product

2.1 PRODUCT DESCRIPTION

This EPD represents a product group and is based on the representative product "FAP3D210".

The product (FAP3D210) is a self-adhesive plastic profile (PVC) with welded VVS fabric, integrated/compressed sealing tape, capable of absorbing three-dimensional movements. The profile is equipped with an impact-resistant sealing tape and a tear-off strip with self-adhesive tape for holding protective films for windows (doors) and frames.

Product Features:

Optimized protection for facade

Easy to apply

Three-Dimensional movement absorption

Classified according to Austrian guidelines

Classified according to German guidelines (VDPM)

Product group:

This product serves as a reference item within a broader category of products classified as product group 3 (PG3: see the following table).

| | | | | | | |
|----------|-----------|-------------|----------|----------|-------|--------|
| FAP01 | FAP3D208 | FAP3D109 | FAP3D209 | APL3D03 | BFP02 | DFAP01 |
| FAP02 | FAP3D111 | FAP3D113 | FAP3D210 | APL3D03L | BFP03 | DFAP02 |
| FAP03 | FAP3D111L | FAP3D115 | FAP3D16+ | FGM01 | BFP04 | DFAP04 |
| FAP23L | FAP3D112L | FAP3D10SF | FAP3D18+ | FGM02 | BFP05 | DFAP05 |
| FAP13L | FAP3D106 | FAP3DS10SF | FAP3D19 | FGM03 | BFP06 | DFP01 |
| FAP14L | FAP3D106L | FAP 3D 203 | FAP3D20 | FGM04 | BFP08 | DFFM01 |
| FAP18 | FAP3D107 | FAP 3D 203+ | RAP3D05 | FGE01 | DFC01 | DFFM01 |
| FAP41L | FAP3D107L | FAP3D204 | RAPD3D06 | FGE02 | DFC02 | DFFR01 |
| FAP3D03 | FAP3D108 | FAP3D206 | RAP3D08 | AKP02 | DFG01 | |
| FAP3D14L | FAP3D108L | FAP3D208 | | AKP01 | DFG02 | |

Composition of FAP3D210 (reference product) is available in the following table:

| Materials | Weight (%) |
|----------------------------------|------------|
| PVC base profile | 68.4 |
| Mesh | 10.4 |
| Tape | 11.3 |
| Other additives (foil, adhesive) | 9.9 |

2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

Products designed for plaster systems, and as plastering profiles for both interior and exterior plaster applications, as well as for clinker brick installations.

2.3 REFERENCE SERVICE LIFE

RSL PRODUCT

As the entire life cycle of the product is not considered within the scope of this study, specifying the reference service life (RSL) is voluntary. According to information from the manufacturer, referencing BBSR tables on www.nachhaltigesbauen.de, the RSL of the product is 20–30 years.

USED RSL (YR) IN THIS LCA CALCULATION:

30

2.4 TECHNICAL DATA

The technical data stated here is relevant for the use of the declared product.

| Criterion | Value/ Description |
|-------------------|--------------------------|
| Reference product | FAP3D210 |
| Strip Length | 2.6 m |
| Fabric Fastening | Welded |
| Profile Material | Polyvinyl Chloride (PVC) |

2 Product

2.5 SUBSTANCES OF VERY HIGH CONCERN

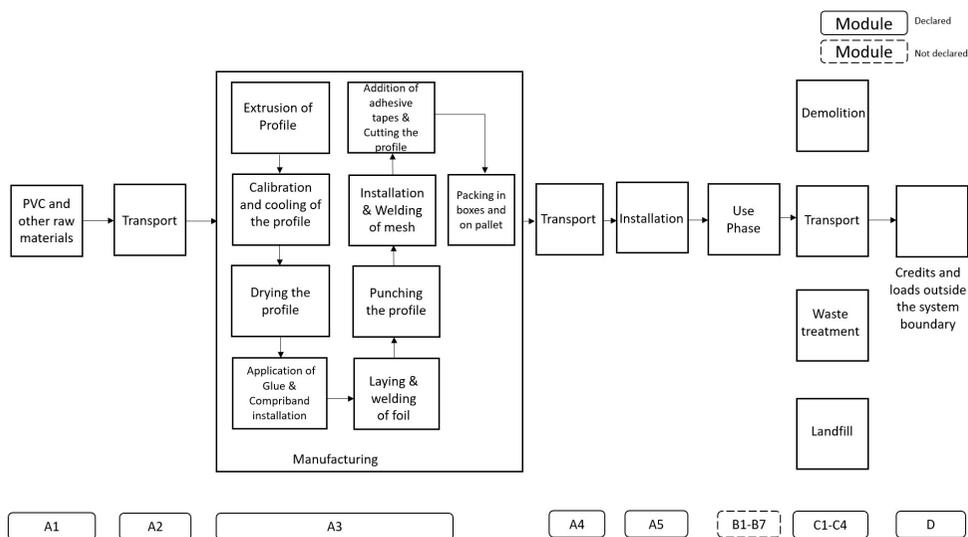
No substance presents in the product with a contribution of more than 0.1 % of the total weight is present on the "List of Potentially Hazardous Substances" (SVHC) that are candidates for authorisation under REACH legislation.

2.6 DESCRIPTION PRODUCTION PROCESS

The manufacturing operations are carried out at FAM Immo d.o.o., located at Jertovec 202b, 49282, Konjscina, Croatia.

Below is a summary of the manufacturing process:

- Extruding the profile
- Calibrating and cooling
- Adding components
- Profile cutting
- Packaging



2.7 CONSTRUCTION DESCRIPTION

It is assumed that the products are installed manually.

3 Calculation rules

3.1 DECLARED UNIT

1 m of FAP3D210

The declared unit for this Life Cycle Assessment (LCA) calculation is one meter (1 m) of the building connection systems: FAP3D210 (product group 3). This choice aligns with the manufacturer's practice of selling the products by length. Selecting meters as the declared unit ensures consistency and relevance for accurately assessing the environmental impact of these systems.

Reference unit: meter (m¹)

3.2 CONVERSION FACTORS

| Description | Value | Unit |
|---------------------------|----------|----------------|
| Reference unit | 1 | m ¹ |
| Weight per reference unit | 0.201 | kg |
| Conversion factor to 1 kg | 4.981643 | m ¹ |

3.3 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

This is a Cradle to gate with options, modules C1-C4 and module D EPD. The life cycle stages included are as shown below:

(X = module included, ND = module not declared)

| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| X | X | X | X | X | ND | X | X | X | X | X |

The modules of the EN 15804 contain the following:

| | |
|---|--|
| Module A1 = Raw material supply | Module B5 = Refurbishment |
| Module A2 = Transport | Module B6 = Operational energy use |
| Module A3 = Manufacturing | Module B7 = Operational water use |
| Module A4 = Transport | Module C1 = De-construction / Demolition |
| Module A5 = Construction - Installation process | Module C2 = Transport |
| Module B1 = Use | Module C3 = Waste Processing |
| Module B2 = Maintenance | Module C4 = Disposal |
| Module B3 = Repair | Module D = Benefits and loads beyond the product system boundaries |
| Module B4 = Replacement | |

3.4 REPRESENTATIVENESS

This EPD is representative for Profile Solution: ETIC-System Profiles FAP3D210 (product group 3) , a product of K-Uni Kunststoffproduktions- und Handels GmbH . The results of this EPD are representative for European Union.

3.5 CUT-OFF CRITERIA

Product stage (A1-A3)

3 Calculation rules

All input flows (e.g. raw materials, transportation, energy use, packaging, etc.) and output flows (e.g. production waste) are considered in this LCA. The total neglected input flows do therefore not exceed the limit of 5% of energy use and mass.

Construction process stage (A4-A5)

All input flows (e.g. transportation to the construction site, additional raw material use for construction, installation energy (use)of energy use for assembly , etc.) and output flows (e.g. construction waste, packaging waste, etc.) are considered in this LCA. The total neglected input flows do therefore not exceed the limit of 5% of energy use and mass.

End of life stage (C1-C4)

All input flows (e.g. energy use for demolition or disassembly, transport to waste processing, etc.) and output flows (e.g. end-of-life waste processing of the product, etc.) are considered in this LCA. The total neglected input flows do therefore not exceed the limit of 5% of energy use and mass.

Benefits and loads beyond the system boundary (Module D)

All benefits and loads beyond the system boundary resulting from reusable products, recyclable materials and/or useful energy carriers leaving the product system are considered in this LCA.

Excluded processes

Following processes has not been taken into account in this life cycle analysis:
 The manufacture of equipment used in production, buildings or any other capital goods;
 The transportation of personnel to the production plant;
 The transportation of personnel within the production plant;
 Research and development activities;

3.6 ALLOCATION

Allocations were avoided as far as possible.
 No by-products or co-products are produced during the manufacture of the analysed product.
 The energy requirements of production were allocated to the individual products on the

basis of energy consumption measurements.
 Specific information on the allocations within the background data can be found in the documentation of the Ecoinvent datasets.

3.7 DATA COLLECTION & REFERENCE PERIOD

All primary data were collected by K-UNI Kunststoffproduktions- und Handels GmbH for the reference period from May 2023 to May 2024.

3.8 ESTIMATES AND ASSUMPTIONS

- A payload factor of 50 percent was used for all truck transports, which corresponds to a full delivery and an empty return trip. A dataset for a non-specific truck was used.
- The demolition process for end-of-life products is assumed to be done manually.
- According to the manufacturer, the waste scenario for this LCA includes 100% landfill.
- It is assumed that the products are installed manually.

3.9 DATA QUALITY

All primary data were collected by K-UNI Kunststoffproduktions- und Handels GmbH for the reference period from May 2023 to May 2024.

For the data that the manufacturer does not influence, generic data were used. Secondary data were sourced from the regularly updated Ecoinvent database (version 3.6), aligned with EN 15804 standards to ensure background data not exceeding 10 years.

The ReTHiNK EPD web application was used to model the life cycle for the production and disposal of the declared product systems. To ensure that the results are comparable, consistent background data from the international database Ecoinvent were used in the LCA (e.g., data records on energy, transport, auxiliary materials, and supplies). Almost all consistent datasets contained in the Ecoinvent database are documented and can be viewed online.

The scenarios included are currently in use and are representative of one of the most likely alternatives.

According to the criteria of the "UN Environmental Global Guidance on LCA database development" mentioned in EN 15804+A2, the data quality for all three representativeness categories (geographical, technical and time) can be described as good.

3 Calculation rules

3.10 POWER MIX

In general, a market-based approach was used for the electricity consumption in production (A3). Since no purchased electricity mix could be provided, the national

residual grid mix of Croatia was utilized. This mix has a total Global Warming Potential (GWP) of 0.63 kg CO₂ eq. per kWh.

4 Scenarios and additional technical information

4.1 TRANSPORT TO CONSTRUCTION SITE (A4)

For the transport from production place to assembly/user, the following scenario is assumed for module A4 of this EPD.

| | Value and unit |
|--|---|
| Vehicle type used for transport | (ei3.6) Lorry (Truck), unspecified (default) market group for (GLO) |
| Fuel type and consumption of vehicle | not available |
| Distance | 150 km |
| Capacity utilisation (including empty returns) | 50 % (loaded up and return empty) |
| Bulk density of transported products | inapplicable |
| Volume capacity utilisation factor | 1 |

4.2 ASSEMBLY (A5)

The following information describes the scenarios for flows entering the system and flows leaving the system at module A5.

FLOWS ENTERING THE SYSTEM

There are no significant environment impacts as a result of materials or energy used in the construction stage (A5).

FLOWS LEAVING THE SYSTEM

The following output flows leaving the system at module A5 are assumed.

| Description | Value | Unit |
|---|-------|------|
| Output materials as result of loss during construction | 0 | % |
| Output materials as result of waste processing of materials used for installation/assembly at the building site | 0.000 | kg |
| Output materials as result of waste processing of used packaging | 0.025 | kg |

4.3 DE-CONSTRUCTION, DEMOLITION (C1)

No inputs are needed for the product at the de-construction / demolition phase

4.4 TRANSPORT END-OF-LIFE (C2)

The following distances and transport conveyance are assumed for transportation during end of life for the different types of waste processing.

4 Scenarios and additional technical information

| Waste Scenario | Transport conveyance | Not removed (stays in work) [km] | Landfill [km] | Incineration [km] | Recycling [km] | Re-use [km] |
|--|---|----------------------------------|---------------|-------------------|----------------|-------------|
| K-uni waste scenario (100 % landfilling) | (ei3.6) Lorry (Truck), unspecified (default) market group for (GLO) | 0 | 100 | 0 | 0 | 0 |

The transport conveyance(s) used in the scenario(s) for transport during end of life has the following characteristics.

| | Value and unit |
|--|---|
| Vehicle type used for transport | (ei3.6) Lorry (Truck), unspecified (default) market group for (GLO) |
| Fuel type and consumption of vehicle | not available |
| Capacity utilisation (including empty returns) | 50 % (loaded up and return empty) |
| Bulk density of transported products | inapplicable |
| Volume capacity utilisation factor | 1 |

4.5 END OF LIFE (C3, C4)

The scenario(s) assumed for end of life of the product are given in the following tables. First the assumed percentages per type of waste processing are displayed, followed by the assumed amounts.

| Waste Scenario | Region | Not removed (stays in work) [%] | Landfill [%] | Incineration [%] | Recycling [%] | Re-use [%] |
|--|--------|---------------------------------|--------------|------------------|---------------|------------|
| K-uni waste scenario (100 % landfilling) | NL | 0 | 100 | 0 | 0 | 0 |

| Waste Scenario | Not removed (stays in work) [kg] | Landfill [kg] | Incineration [kg] | Recycling [kg] | Re-use [kg] |
|--|----------------------------------|---------------|-------------------|----------------|--------------|
| K-uni waste scenario (100 % landfilling) | 0.000 | 0.201 | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.201 | 0.000 | 0.000 | 0.000 |

4.6 BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY (D)

The presented Benefits and loads beyond the system boundary in this EPD are based on the following calculated Net output flows in kilograms and Energy recovery displayed in MJ Lower Heating Value.

4 Scenarios and additional technical information

| Waste Scenario | Net output flow [kg] | Energy recovery [MJ] |
|--|----------------------|----------------------|
| K-uni waste scenario (100 % landfilling) | -0.048 | 0.000 |
| Total | -0.048 | 0.000 |

5 Results

For the impact assessment long-term emissions (>100 years) are not considered. The results of the impact assessment are only relative statements that do not make any statements about end-points of the impact categories, exceedance of threshold values, safety margins or risks. The following tables show the results of the indicators of the impact assessment, of the use of resources as well as of waste and other output flows.

5.1 ENVIRONMENTAL IMPACT INDICATORS PER METER

CORE ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

| Abbr. | Unit | A1 | A2 | A3 | A1- A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|-----------|--------------------------|---------|---------|----------|-----------|---------|---------|---------|----------|---------|----------|----------|
| GWP-total | kg CO ₂ eq. | 3.93E-1 | 1.42E-2 | 2.23E-1 | 6.30E-1 | 4.58E-3 | 4.71E-2 | 0.00E+0 | 2.71E-3 | 0.00E+0 | 1.69E-2 | -2.38E-2 |
| GWP-f | kg CO ₂ eq. | 3.91E-1 | 1.42E-2 | 2.38E-1 | 6.43E-1 | 4.57E-3 | 3.12E-2 | 0.00E+0 | 2.71E-3 | 0.00E+0 | 1.69E-2 | -2.37E-2 |
| GWP-b | kg CO ₂ eq. | 1.99E-3 | 6.28E-6 | -1.55E-2 | -1.35E-2 | 1.84E-6 | 1.60E-2 | 0.00E+0 | 1.09E-6 | 0.00E+0 | 1.76E-5 | -2.06E-5 |
| GWP-luluc | kg CO ₂ eq. | 2.29E-4 | 5.91E-6 | 1.24E-4 | 3.59E-4 | 1.68E-6 | 3.35E-6 | 0.00E+0 | 9.94E-7 | 0.00E+0 | 1.02E-6 | -8.93E-6 |
| ODP | kg CFC11 eq. | 1.13E-7 | 3.07E-9 | 7.23E-9 | 1.23E-7 | 1.01E-9 | 1.19E-9 | 0.00E+0 | 5.98E-10 | 0.00E+0 | 6.57E-10 | -4.51E-9 |
| AP | mol H+ eq. | 1.91E-3 | 5.77E-5 | 9.25E-4 | 2.90E-3 | 2.65E-5 | 2.20E-5 | 0.00E+0 | 1.57E-5 | 0.00E+0 | 1.87E-5 | -4.43E-5 |
| EP-fw | kg P eq. | 1.74E-5 | 1.38E-7 | 9.10E-6 | 2.67E-5 | 4.61E-8 | 1.20E-7 | 0.00E+0 | 2.73E-8 | 0.00E+0 | 3.72E-8 | -2.24E-7 |
| EP-m | kg N eq. | 3.65E-4 | 1.61E-5 | 1.82E-4 | 5.63E-4 | 9.36E-6 | 6.62E-6 | 0.00E+0 | 5.54E-6 | 0.00E+0 | 1.03E-5 | -1.10E-5 |
| EP-T | mol N eq. | 3.55E-3 | 1.79E-4 | 2.06E-3 | 5.79E-3 | 1.03E-4 | 7.29E-5 | 0.00E+0 | 6.10E-5 | 0.00E+0 | 6.80E-5 | -1.37E-4 |
| POCP | kg NMVOC eq. | 1.22E-3 | 5.69E-5 | 6.95E-4 | 1.97E-3 | 2.94E-5 | 2.04E-5 | 0.00E+0 | 1.74E-5 | 0.00E+0 | 2.31E-5 | -3.89E-5 |
| ADP-mm | kg Sb-eq. | 8.05E-6 | 4.60E-7 | 1.94E-6 | 1.04E-5 | 1.16E-7 | 6.89E-8 | 0.00E+0 | 6.87E-8 | 0.00E+0 | 2.27E-8 | -9.80E-8 |
| ADP-f | MJ | 8.62E+0 | 2.15E-1 | 4.41E+0 | 1.32E+1 | 6.90E-2 | 4.26E-2 | 0.00E+0 | 4.09E-2 | 0.00E+0 | 5.02E-2 | -4.40E-1 |
| WDP | m ³ world eq. | 4.59E-1 | 7.34E-4 | 6.57E-2 | 5.26E-1 | 2.47E-4 | 1.90E-3 | 0.00E+0 | 1.46E-4 | 0.00E+0 | 2.16E-3 | -7.68E-3 |

GWP-total=Global Warming Potential total (GWP-total) | **GWP-f**=Global Warming Potential fossil fuels (GWP-fossil) | **GWP-b**=Global Warming Potential biogenic (GWP-biogenic) | **GWP-luluc**=Global Warming Potential land use and land use change (GWP-luluc) | **ODP**=Depletion potential of the stratospheric ozone layer (ODP) | **AP**=Acidification potential, Accumulated Exceedance (AP) | **EP-fw**=Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater) | **EP-m**=Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine) | **EP-T**=Eutrophication potential, Accumulated Exceedance (EP-terrestrial) | **POCP**=Formation potential of tropospheric ozone (POCP) | **ADP-mm**=Abiotic depletion potential for non fossil resources (ADP mm) | **ADP-f**=Abiotic depletion for fossil resources potential (ADP fossil) | **WDP**=Water (user) deprivation potential, deprivation-weighted water consumption (WDP)

5 Results

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

| Abbr. | Unit | A1 | A2 | A3 | A1- A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|--------|-------------------|----------|----------|----------|-----------|----------|----------|---------|----------|---------|----------|-----------|
| PM | disease incidence | 1.87E-8 | 9.91E-10 | 4.59E-9 | 2.43E-8 | 4.10E-10 | 2.30E-10 | 0.00E+0 | 2.43E-10 | 0.00E+0 | 3.49E-10 | -3.17E-10 |
| IR | kBq U235 eq. | 1.57E-2 | 8.98E-4 | 1.53E-2 | 3.19E-2 | 2.89E-4 | 1.67E-4 | 0.00E+0 | 1.71E-4 | 0.00E+0 | 1.96E-4 | -3.22E-4 |
| ETP-fw | CTUe | 9.35E+0 | 1.83E-1 | 1.31E+0 | 1.08E+1 | 6.15E-2 | 4.32E-1 | 0.00E+0 | 3.64E-2 | 0.00E+0 | 7.76E-1 | -1.83E-1 |
| HTP-c | CTUh | 2.20E-10 | 5.83E-12 | 7.98E-11 | 3.06E-10 | 2.00E-12 | 8.67E-12 | 0.00E+0 | 1.18E-12 | 0.00E+0 | 1.49E-12 | -4.72E-12 |
| HTP-nc | CTUh | 9.39E-9 | 1.94E-10 | 2.82E-9 | 1.24E-8 | 6.75E-11 | 1.54E-10 | 0.00E+0 | 3.99E-11 | 0.00E+0 | 1.54E-10 | -1.33E-10 |
| SQP | Pt | 1.02E+0 | 1.62E-1 | 2.48E+0 | 3.66E+0 | 5.98E-2 | 2.31E-2 | 0.00E+0 | 3.54E-2 | 0.00E+0 | 1.19E-1 | -6.62E-1 |

PM=Potential incidence of disease due to PM emissions (PM) | **IR**=Potential Human exposure efficiency relative to U235 (IRP) | **ETP-fw**=Potential Comparative Toxic Unit for ecosystems (ETP-fw) | **HTP-c**=Potential Comparative Toxic Unit for humans (HTP-c) | **HTP-nc**=Potential Comparative Toxic Unit for humans (HTP-nc) | **SQP**=Potential soil quality index (SQP)

CLASSIFICATION OF DISCLAIMERS TO THE DECLARATION OF CORE AND ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS

| ILCD classification | Indicator | Disclaimer |
|---------------------|---|------------|
| ILCD type / level 1 | Global warming potential (GWP) | None |
| | Depletion potential of the stratospheric ozone layer (ODP) | None |
| | Potential incidence of disease due to PM emissions (PM) | None |
| ILCD type / level 2 | Acidification potential, Accumulated Exceedance (AP) | None |
| | Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater) | None |
| | Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine) | None |
| | Eutrophication potential, Accumulated Exceedance (EP-terrestrial) | None |
| | Formation potential of tropospheric ozone (POCP) | None |
| | Potential Human exposure efficiency relative to U235 (IRP) | 1 |
| ILCD type / level 3 | Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) | 2 |
| | Abiotic depletion potential for fossil resources (ADP-fossil) | 2 |
| | Water (user) deprivation potential, deprivation-weighted water consumption (WDP) | 2 |
| | Potential Comparative Toxic Unit for ecosystems (ETP-fw) | 2 |
| | Potential Comparative Toxic Unit for humans (HTP-c) | 2 |
| | Potential Comparative Toxic Unit for humans (HTP-nc) | 2 |

5 Results

| ILCD classification | Indicator | Disclaimer |
|--|------------------------------------|------------|
| | Potential Soil quality index (SQP) | 2 |
| <p>Disclaimer 1 – 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 nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.</p> | | |
| <p>Disclaimer 2 – 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 experienced with the indicator.</p> | | |

5.2 INDICATORS DESCRIBING RESOURCE USE AND ENVIRONMENTAL INFORMATION BASED ON LIFE CYCLE INVENTORY (LCI)

PARAMETERS DESCRIBING RESOURCE USE

| Abbr. | Unit | A1 | A2 | A3 | A1- A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|-------|------|---------|---------|---------|-----------|---------|---------|---------|---------|---------|---------|----------|
| PERE | MJ | 4.31E-1 | 3.36E-3 | 5.11E-1 | 9.45E-1 | 8.64E-4 | 3.17E-3 | 0.00E+0 | 5.11E-4 | 0.00E+0 | 8.66E-4 | -1.31E-1 |
| PERM | MJ | 0.00E+0 | 0.00E+0 | 1.42E-1 | 1.42E-1 | 0.00E+0 |
| PERT | MJ | 4.31E-1 | 3.36E-3 | 6.52E-1 | 1.09E+0 | 8.64E-4 | 3.17E-3 | 0.00E+0 | 5.11E-4 | 0.00E+0 | 8.66E-4 | -1.31E-1 |
| PENRE | MJ | 6.26E+0 | 2.28E-1 | 3.89E+0 | 1.04E+1 | 7.33E-2 | 4.53E-2 | 0.00E+0 | 4.34E-2 | 0.00E+0 | 5.33E-2 | -4.31E-1 |
| PENRM | MJ | 2.99E+0 | 0.00E+0 | 6.16E-1 | 3.60E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | -5.25E-2 |
| PENRT | MJ | 9.25E+0 | 2.28E-1 | 4.51E+0 | 1.40E+1 | 7.33E-2 | 4.53E-2 | 0.00E+0 | 4.34E-2 | 0.00E+0 | 5.33E-2 | -4.83E-1 |
| SM | Kg | 4.80E-2 | 0.00E+0 | 0.00E+0 | 4.80E-2 | 0.00E+0 |
| RSF | MJ | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| NRSF | MJ | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| FW | m³ | 7.03E-3 | 2.68E-5 | 2.98E-3 | 1.00E-2 | 8.41E-6 | 5.74E-5 | 0.00E+0 | 4.98E-6 | 0.00E+0 | 5.25E-5 | -8.78E-5 |

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**=Net use of fresh water

5 Results

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

| Abbr. | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|-------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|
| HWD | Kg | 6.60E-6 | 5.51E-7 | 7.94E-6 | 1.51E-5 | 1.75E-7 | 8.40E-8 | 0.00E+0 | 1.04E-7 | 0.00E+0 | 7.64E-8 | -4.98E-7 |
| NHWD | Kg | 2.97E-2 | 1.15E-2 | 1.66E-2 | 5.78E-2 | 4.38E-3 | 2.01E-2 | 0.00E+0 | 2.59E-3 | 0.00E+0 | 2.01E-1 | -6.45E-4 |
| RWD | Kg | 1.39E-5 | 1.39E-6 | 1.15E-5 | 2.68E-5 | 4.54E-7 | 1.81E-7 | 0.00E+0 | 2.69E-7 | 0.00E+0 | 2.99E-7 | -3.60E-7 |

HWD=Hazardous waste disposed | **NHWD**=Non-hazardous waste disposed | **RWD**=Radioactive waste disposed

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

| Abbr. | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|-------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| CRU | Kg | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.00E-6 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| MFR | Kg | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 6.61E-3 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| MER | Kg | 0.00E+0 |
| EET | MJ | 0.00E+0 | 1.68E-1 |
| EEE | MJ | 0.00E+0 | 9.74E-2 |

CRU=Components for re-use | **MFR**=Materials for recycling | **MER**=Materials for energy recovery | **EET**=Exported Energy, Thermic | **EEE**=Exported Energy, Electric

5 Results

5.3 INFORMATION ON BIOGENIC CARBON CONTENT PER METER

BIOGENIC CARBON CONTENT

The following Information describes the biogenic carbon content in (the main parts of) the product at the factory gate per meter:

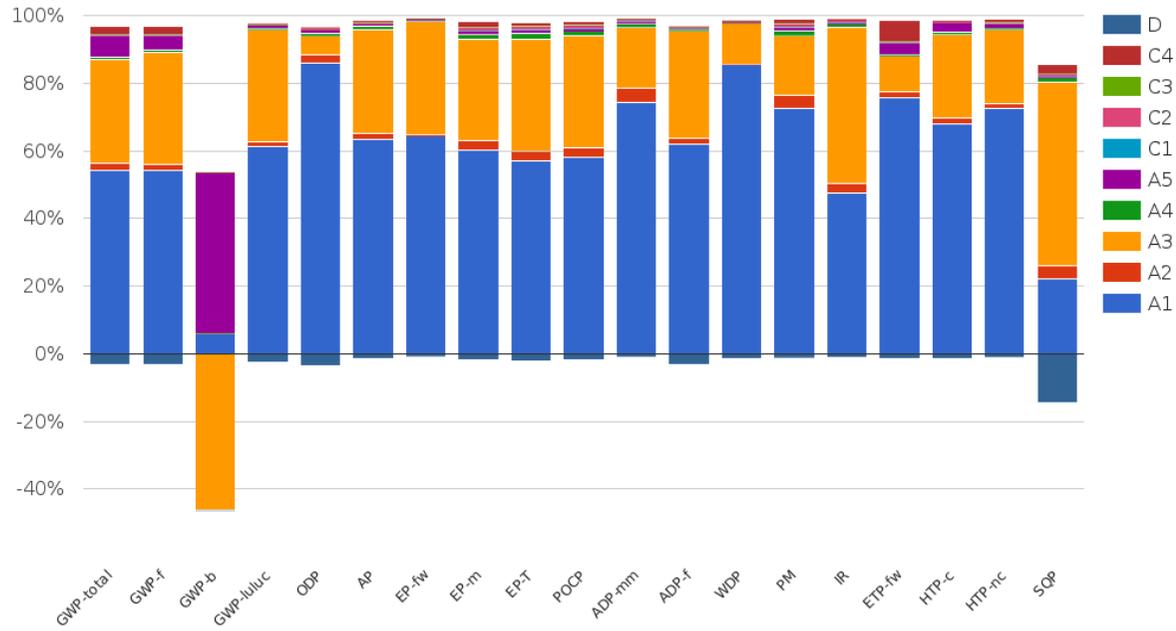
| Biogenic carbon content | Amount | Unit |
|---|----------|------|
| Biogenic carbon content in the product | 0 | kg C |
| Biogenic carbon content in accompanying packaging | 0.004328 | kg C |

UPTAKE OF BIOGENIC CARBON DIOXIDE

The following amount of carbon dioxide uptake is taken into account. Related uptake and release of carbon dioxide in downstream processes are not taken into account in this number although they do appear in the presented results. One kilogram of biogenic Carbon content is equivalent to 44/12 kg of biogenic carbon dioxide uptake.

| Uptake Biogenic Carbon dioxide | Amount | Unit |
|--------------------------------|---------|-------------------|
| Packaging | 0.01587 | kg CO2 (biogenic) |

6 Interpretation of results



The figure illustrates the impact categories for 1 m of the product (FAP3D210). As depicted, Modules A1, A3, and D emerge as the most significant contributors to all assessed indicators. The contribution of raw materials (A1) is notably higher, whereas transportation (A2 and C2) exhibits a comparatively minor impact. For most indicators, Module D indicates environmental benefits.

7 References

ISO 14040

ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework; EN ISO 14040:2006

ISO 14044

ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidelines; EN ISO 14044:2006

ISO 14025

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

EN 15804+A2

EN 15804+A2: 2019: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

General PCR Ecobility Experts

Kiwa-Ecobility Experts (Kiwa-EE) – General Product Category Rules (2022-02-14)

Ecoinvent

Ecoinvent Database, Version 3.6 (2019)

Characterisation method

Characterisation method Environmental Footprint 3.1.

8 Contact information

| Publisher | Operator | Owner of declaration |
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