Environmental Product Declaration (EPD)
According to ISO 14025 and EN 15804

Texcellence Profile: Textile Plastic Composite (Recipe 2)









Registration number:	EPD-Kiwa-EE-168778-EN
Issue date:	05-06-2024
Valid until:	05-06-2029
Declaration owner:	Vive Innovation Sp.zo.o.
Publisher:	Kiwa-Ecobility Experts
Program operator:	Kiwa-Ecobility Experts
Status:	verified

1 General information

1.1 PRODUCT

Texcellence Profile: Textile Plastic Composite (Recipe 2)

1.2 REGISTRATION NUMBER

EPD-Kiwa-EE-168778-EN

1.3 VALIDITY

Issue date: 05-06-2024

Valid until: 05-06-2029

1.4 PROGRAM OPERATOR

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Raoul Mancke

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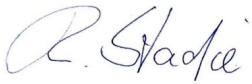


Dr. Ronny Stadie

(Verification body, Kiwa-Ecobility Experts)

1.5 OWNER OF THE DECLARATION

Manufacturer: Vive Innovation Sp.zo.o.

Address: Lopuszanska 22, 02-220 Warszawa, Poland

E-mail: Salesvi@vive.com.pl

Website: www.vivetexcellence.com

Production location: Vive Innovation

Address production location: K.Olszewskiego 6, 25 - 663 Kielce, Poland

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 15804:2012+A2:2019 serves as the core PCR.

☐ Internal ☒ External

Lucas Pedro Berman, Senda

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

1. Kiwa-Ecobility Experts (Kiwa-EE) – General Product Category Rules (2022-02-14)
2. PCR Guidance-Text for Building-Related Products and Services, Part B: Requirements on the EPD for Boards and panels made of plastic (interior and exterior applications), IBU 2023, Version 3.0

1 General information

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. 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 and general program instructions of different EPD program operators may differ. Comparability needs to be evaluated. For further guidance, see EN 15804+A2 (5.3 Comparability of EPD for construction products) and ISO 14025 (6.7.2 Requirements for comparability).

1.10 CALCULATION BASIS

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

LCA software*: Simapro 9.1

Characterization method: EN 15804 +A2 Method v1.0

LCA database profiles: EcoInvent version 3.6

Version database: v3.17 (2024-05-22)

** 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 'Texcellence Profile: Textile Plastic Composite (Recipe 2)' with the calculation identifier ReTHiNK-68778.

2 Product

2.1 PRODUCT DESCRIPTION

Texcellence profiles (Recipe 2) are made of secondary raw materials and have various applications. For instance, they can be utilized in making garden and picnic furniture, constructing terraces, boardwalks, piers, stairs, restaurant garden floors, and other projects in public spaces. Additionally, they can be applied in engineering tasks such as reinforcing embankments, slopes, river and canal banks, and protecting quays. Composite profiles are also employed in building children's playgrounds, fences, garages, sheds, and even stands around sports facilities.

These materials are easily machinable with standard mechanical tools, ensuring safe installation, even under extreme conditions. It has a high chemical resistance to oils, fats, acids and salts. All the properties of VIVE Texcellence products makes it possible to use it externally, wherever natural wood is used, and its durability will save costs in the future.

Composition of Texcellence profiles (Recipe 2) is available in the following table:

Name	Value	Unit
Used Textile	58	%
Used PE bags	39	%
Additives (colorant, glass fiber, flame retardant)	≤3	%

2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

This list highlights some of the many applications of Vive Texcellence profiles:

- Garden and picnic furniture;
- Build terraces;
- Boardwalks;
- Piers;
- Stairs;
- Restaurant garden floors and other projects in public spaces;
- Engineering applications such as reinforcing embankments, slopes, river and canal banks;
- Protect quays;
- Children's playgounds;
- Fences;
- Garages;
- Sheds;
- Stands around sports facilities

2.3 REFERENCE SERVICE LIFE

RSL PRODUCT

As the entire life cycle of the product is not considered in the scope of the study, the specification of the reference service life (RSL) is voluntary. According to the information from the manufacturer, the RSL of the product is 35 years.

USED RSL (YR) IN THIS LCA CALCULATION:

35

2.4 TECHNICAL DATA

Vive Texcellence profiles offer diverse applications for product manufacturing (refer to the Application section). For the use and application of the product the respective national provisions at the place of use apply. Access technical data and catalogs for all products via the following link:

https://vivetexcellence.pl/en/

2.5 SUBSTANCES OF VERY HIGH CONCERN

No substance present 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

1-Preparation of the Textile Component

For the preparation of textile fibers, suitably selected used clothing waste is utilized while maintaining an appropriate balance of natural and synthetic fibers and eliminating undesirable materials such as rubber, natural and synthetic leather. The garments are transported to a shredder where they are pre-shredded. The shredded textiles then undergo a multi-stage separation process to remove impurities and undesirable additions such as buttons, zips, or fasteners. The impurity-free textiles undergo final shredding into fibers and are stored in a buffer silo.

2-Preparation of the Plastic Component

2 Product

The PE waste is used to prepare the plastics. This waste is transported to the shredder where it is crushed. Subsequently, the PE waste is separated from impurities and undesired additives. The contamination-free PE waste is stored in a buffer silo.

3-Dosing, Mixing, and Pre-homogenization

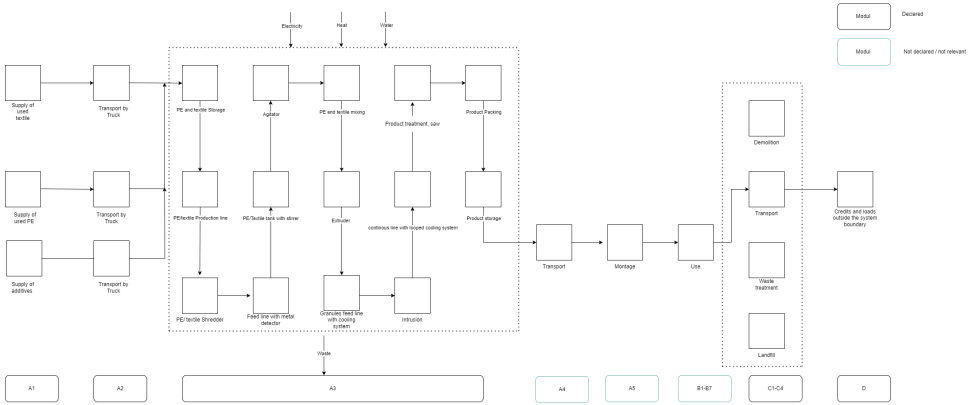
The textile and PE fibers are continuously fed via dosing machines into the mixer in strictly defined and controlled quantities. There, they are mixed together and pre-homogenized. The mixers' specially designed geometry facilitates the flow of components through the mixer. The finished mixture is stored in a buffer tank.

4-Granulation

The finished mixture is fed into an extruder with a granulating head. There, under strictly defined process parameters, the composite undergoes proper homogenization, degassing, and granulation. The resulting granulate is the final product of the process and, as a semi-finished product, is used to form finished products.

5-Manufacturing of Finished Products

The granulate is fed into the extruders, which plasticize the granulate and generate the necessary pressure and forced flow to form finished products in molds or extrusion heads using a continuous extrusion process. The finished products, profiles of various cross-sections (round, rectangular, square, and others), are placed on wooden pallets and packed in bundles according to orders.



3 Calculation rules

3.1 DECLARED UNIT

1 ton Texcellence, Recipe 2

In Life Cycle Assessment (LCA) calculations, 1 ton of Texcellence profile, Recipe 2 was defined as the declared unit.

Reference unit: ton (ton)

3.2 CONVERSION FACTORS

Description	Value	Unit
Reference unit	1	ton
Weight per reference unit	1000.000	kg
Conversion factor to 1 kg	0.001000	ton

3.3 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

This is a Cradle to gate with modules C1-C4 and module D LCA. 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	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

The modules of the EN15804 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 Texcellence Profile: Textile Plastic Composite (Recipe 2), a product of Vive Innovation Sp.zo.o.. The results of this EPD are representative for European Union.

3.5 CUT-OFF CRITERIA

Product Stage (A1-A3)
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.

3 Calculation rules

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.

Processes excluded in the EPD include:

- The manufacture of equipment used in production, buildings or any other capital goods;

- The transport of personnel to the plant;

- The transportation of personnel within the plant;

- Research and development activities;

- Long-term emissions.

3.6 ALLOCATION

Texcellence, recipe 2 accounts for 45% of total output by mass. As a result, all raw materials, energy usage, and additional materials were allocated proportionally according to the mass ratio.

During the production of texcellence, recipe 2, no co-products are generated.

3.7 DATA COLLECTION & REFERENCE TIME PERIOD

Primary data including all raw materials, packaging materials, energy consumption and ancillary materials was comprehensively collected for the reference year of 2023.

3.8 ESTIMATES AND ASSUMPTIONS

Texcellence, recipe 2 constitutes up 45% of the total output of Vive Innovation. So, raw materials and energy used were divided up in proportion to their mass.

A consumption of 43 MJ diesel per ton of products is assumed for the demolition of end-of-life products.

The waste scenario “Products made of recycled textile and PE" is created based on the NMD (Dutch Environmental Database) waste scenario of "PVC, frame profiles (NMD ID 63)", which is considered representative for the life cycle of the product. 10% of the waste is deposited in a landfill and 10% incinerated while 80% is recycled. The process "Waste polyethylene {Europe without Switzerland}| treatment of waste polyethylene, sanitary landfill, including processes sorting plant BE-PCR" is used for landfilling, whereby the dataset "Waste treatment of 21% PE, 21% PP, 20% PVC, 17% PS en 21% mixture {CH], municipal incineration" is used for Incineration.

For the recycling, the process “Waste treatment, Mechanical Recycling, Shredding of end of life Retextil profile” is applied, where the initial input of the electricity from Switzerland is replaced by the electricity from Poland. The recycled waste is reused as benefits in the process "Polyethylene, high-density (HDPE), granulate | production (EU)".

3.9 DATA QUALITY

All primary data were collected by Vive Innovation Sp. zo.o, for the reference year of 2023.

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

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

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

3.10 GUARANTEES OF ORIGIN

There are no guarantees of origin. The electricity profile was chosen as a market-based approach according to the geographical reference area (Poland) in Ecoinvent 3.6.

4 Scenarios and additional technical information

4.1 DE-CONSTRUCTION, DEMOLITION (C1)

The following information describes the scenario for demolition at end of life.

Description	Amount	Unit
Diesel, burned in machine (incl. emissions)	1.201	l

4.2 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.

Waste Scenario	Transport conveyance	Not removed (stays in work) [km]	Landfill [km]	Incineration [km]	Recycling [km]	Re-use [km]
Products made of recycled textile and PE	Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	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	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

4.3 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 [%]
Products made of recycled textile and PE	EU	0	10	10	80	0

4 Scenarios and additional technical information

Waste Scenario	Not removed (stays in work) [kg]	Landfill [kg]	Incineration [kg]	Recycling [kg]	Re-use [kg]
Products made of recycled textile and PE	0.000	100.000	100.000	800.000	0.000
Total	**0.000**	**100.000**	**100.000**	**800.000**	**0.000**

4.4 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.

Waste Scenario	Net output flow [kg]	Energy recovery [MJ]
Products made of recycled textile and PE	-165.300	2806.239
Total	**-165.300**	**2806.239**

5 Results

For the impact assessment, the characterization factors of the LCIA method EN 15804 +A2 Method v1.0 are used. Long-term emissions (>100 years) are not considered in the impact assessment. 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 TON

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
AP	mol H+ eqv.	4.50E-1	2.52E-2	9.56E-1	1.43E+0	4.12E-2	5.09E-2	9.76E-1	1.01E-2	1.42E+0
GWP-total	kg CO2 eqv.	6.46E+1	4.34E+0	9.97E+1	1.69E+2	3.94E+0	8.78E+0	3.85E+2	1.50E+1	2.83E+2
GWP-b	kg CO2 eqv.	1.76E-1	2.00E-3	-4.04E+1	-4.02E+1	1.10E-3	4.05E-3	4.82E-1	1.22E-2	3.18E+0
GWP-f	kg CO2 eqv.	6.44E+1	4.34E+0	1.40E+2	2.09E+2	3.94E+0	8.77E+0	3.85E+2	1.50E+1	2.79E+2
GWP-luluc	kg CO2 eqv.	2.83E-2	1.59E-3	6.45E-2	9.44E-2	3.10E-4	3.21E-3	4.80E-2	6.59E-4	1.98E-1
EP-m	kg N eqv.	6.60E-2	8.86E-3	1.15E-1	1.89E-1	1.82E-2	1.79E-2	1.24E-1	5.94E-3	2.29E-1
EP-fw	kg P eqv.	1.30E-3	4.37E-5	1.67E-2	1.80E-2	1.43E-5	8.85E-5	1.72E-2	2.08E-5	1.06E-2
EP-T	mol N eqv.	7.35E-1	9.77E-2	1.31E+0	2.15E+0	1.99E-1	1.98E-1	1.42E+0	3.77E-2	2.54E+0
ODP	kg CFC 11 eqv.	2.92E-5	9.57E-7	3.01E-6	3.32E-5	8.50E-7	1.94E-6	9.82E-6	3.54E-7	-5.99E-6
POCP	kg NMVOC eqv.	2.35E-1	2.79E-2	4.01E-1	6.63E-1	5.48E-2	5.64E-2	3.88E-1	1.40E-2	1.60E+0
ADP-f	MJ	2.07E+3	6.54E+1	1.80E+3	3.93E+3	5.42E+1	1.32E+2	1.49E+3	2.82E+1	1.20E+4
ADP-mm	kg Sb-eqv.	1.76E-3	1.10E-4	4.45E-4	2.31E-3	6.04E-6	2.22E-4	4.94E-4	1.21E-5	3.46E-3
WDP	m3 world eqv.	8.32E+0	2.34E-1	2.94E+1	3.79E+1	7.26E-2	4.73E-1	2.91E+1	1.10E+0	4.48E+2

AP=Acidification (AP) | **GWP-total**=Global warming potential (GWP-total) | **GWP-b**=Global warming potential - Biogenic (GWP-b) | **GWP-f**=Global warming potential - Fossil (GWP-f) | **GWP-luluc**=Global warming potential - Land use and land use change (GWP-luluc) | **EP-m**=Eutrophication marine (EP-m) | **EP-fw**=Eutrophication, freshwater (EP-fw) | **EP-T**=Eutrophication, terrestrial (EP-T) | **ODP**=Ozone depletion (ODP) | **POCP**=Photochemical ozone formation - human health (POCP) | **ADP-f**=Resource use, fossils (ADP-f) | **ADP-mm**=Resource use, minerals and metals (ADP-mm) | **WDP**=Water use (WDP)

5 Results

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
ETP-fw	CTUe	1.21E+3	5.83E+1	1.90E+3	3.16E+3	3.27E+1	1.18E+2	4.88E+3	2.83E+1	2.30E+3
PM	disease incidence	7.29E-6	3.90E-7	2.85E-6	1.05E-5	1.09E-6	7.89E-7	2.16E-6	1.94E-7	1.11E-5
HTP-c	CTUh	3.32E-8	1.89E-9	6.95E-8	1.05E-7	1.14E-9	3.83E-9	8.98E-8	7.65E-10	8.68E-8
HTP-nc	CTUh	1.75E-6	6.38E-8	2.04E-6	3.85E-6	2.81E-8	1.29E-7	2.80E-6	1.86E-8	2.55E-6
IR	kBq U235 eqv.	8.88E+0	2.74E-1	2.07E+0	1.12E+1	2.32E-1	5.54E-1	2.04E+0	1.27E-1	1.44E+1
SQP	Pt	2.87E+2	5.67E+1	5.45E+3	5.79E+3	6.92E+0	1.15E+2	5.05E+2	6.15E+1	5.49E+2

ETP-fw=Ecotoxicity, freshwater (ETP-fw) | **PM**=Particulate Matter (PM) | **HTP-c**=Human toxicity, cancer (HTP-c) | **HTP-nc**=Human toxicity, non-cancer (HTP-nc) | **IR**=Ionising radiation, human health (IR) | **SQP**=Land use (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	AAcidification 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

5 Results

ILCD classification	Indicator	Disclaimer
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2

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.

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.

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	C1	C2	C3	C4	D
PERE	MJ	3.92E+1	8.19E-1	5.21E+2	5.61E+2	2.93E-1	1.66E+0	1.54E+2	6.91E-1	3.47E+2
PERM	MJ	0.00E+0	0.00E+0	3.41E+2	3.41E+2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	MJ	3.92E+1	8.19E-1	8.62E+2	9.02E+2	2.93E-1	1.66E+0	1.54E+2	6.91E-1	3.47E+2
PENRE	MJ	-2.59E+4	6.94E+1	4.08E+2	-2.54E+4	5.75E+1	1.40E+2	-3.20E+4	2.99E+1	4.63E+3
PENRM	MJ	2.81E+4	0.00E+0	1.52E+3	2.96E+4	0.00E+0	0.00E+0	3.36E+4	0.00E+0	8.20E+3
PENRT	MJ	2.20E+3	6.94E+1	1.93E+3	4.20E+3	5.75E+1	1.40E+2	1.60E+3	2.99E+1	1.28E+4
SM	Kg	9.65E+2	0.00E+0	1.06E+1	9.76E+2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
RSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
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
FW	M3	3.10E-1	7.97E-3	3.87E+0	4.19E+0	2.79E-3	1.61E-2	3.93E+0	2.69E-2	6.36E+0

PERE=renewable primary energy ex. raw materials | **PERM**=renewable primary energy used as raw materials | **PERT**=renewable primary energy total | **PENRE**=non-renewable primary energy ex. raw materials | **PENRM**=non-renewable primary energy used as raw materials | **PENRT**=non-renewable primary energy total | **SM**=use of secondary material | **RSF**=use of renewable secondary fuels | **NRSF**=use of non-renewable secondary fuels | **FW**=use of net fresh water

5 Results

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbr.	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
HWD	Kg	9.51E-4	1.66E-4	6.57E-4	1.77E-3	1.48E-4	3.35E-4	6.15E-4	4.25E-5	-9.84E-4
NHWD	Kg	3.97E+0	4.15E+0	1.17E+1	1.98E+1	6.42E-2	8.39E+0	1.16E+1	1.00E+2	1.40E+1
RWD	Kg	1.33E-2	4.30E-4	1.90E-3	1.56E-2	3.76E-4	8.69E-4	1.73E-3	1.76E-4	1.16E-2

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	C1	C2	C3	C4	D
CRU	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MER	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	MJ	0.00E+0	0.00E+0	9.55E+0	9.55E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.70E+2
EEE	MJ	0.00E+0	0.00E+0	5.54E+0	5.54E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.05E+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 TON

BIOGENIC CARBON CONTENT

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

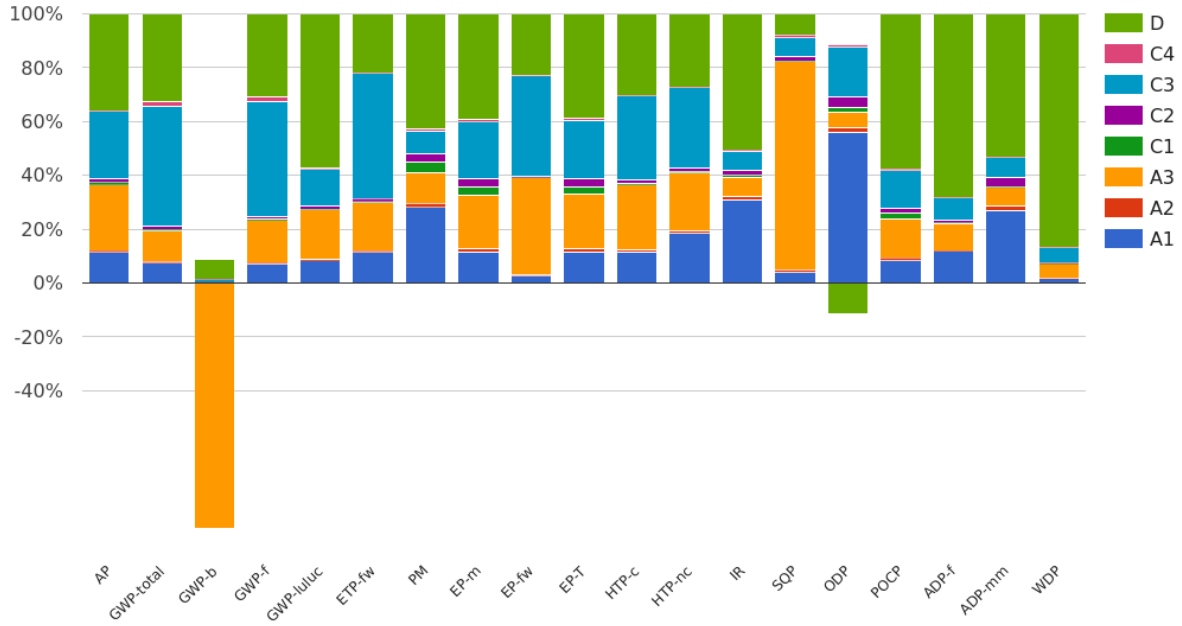
Biogenic carbon content	Amount	Unit
Biogenic carbon content in the product	0	kg C
Biogenic carbon content in accompanying packaging	11.09	kg C

UPTAKE OF BIOGENIC CARBON DIOXIDE

The following amount 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.

Uptake Biogenic Carbon dioxide	Amount	Unit
Packaging	40.67	kg CO2 (biogenic)

6 Interpretation of results



The figure shows the impact categories for 1 ton of Texcellence Profile, Recipe 2. As depicted in the diagram, the contribution of raw material (A1) appears low due to the predominant utilization of secondary materials as the primary raw inputs. Similarly, transportation (A2 and C2) exhibits a comparatively minor contribution. Module D, A3 and C3 emerge as the notable contributors to all assessed indicators. The majority of the CO2 emissions within the impact category GWP-biogenic originate from the packaging. Since the module A5, which includes the waste processing of packaging, is not declared there seems to be a disbalance of biogenic GWP. Therefore, the alleged disbalance can be explained by the fact that module A5 is not included in the EPD.

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 14040:2006

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)

PCR B_Requirements on the EPD for Boards and panels made of plastic (interior and exterior applications)
PCR Guidance-Text for Building-Related Products and Services, Part B: Requirements on the EPD for Boards and panels made of plastic (interior and exterior applications), IBU 2023, Version 3.0

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