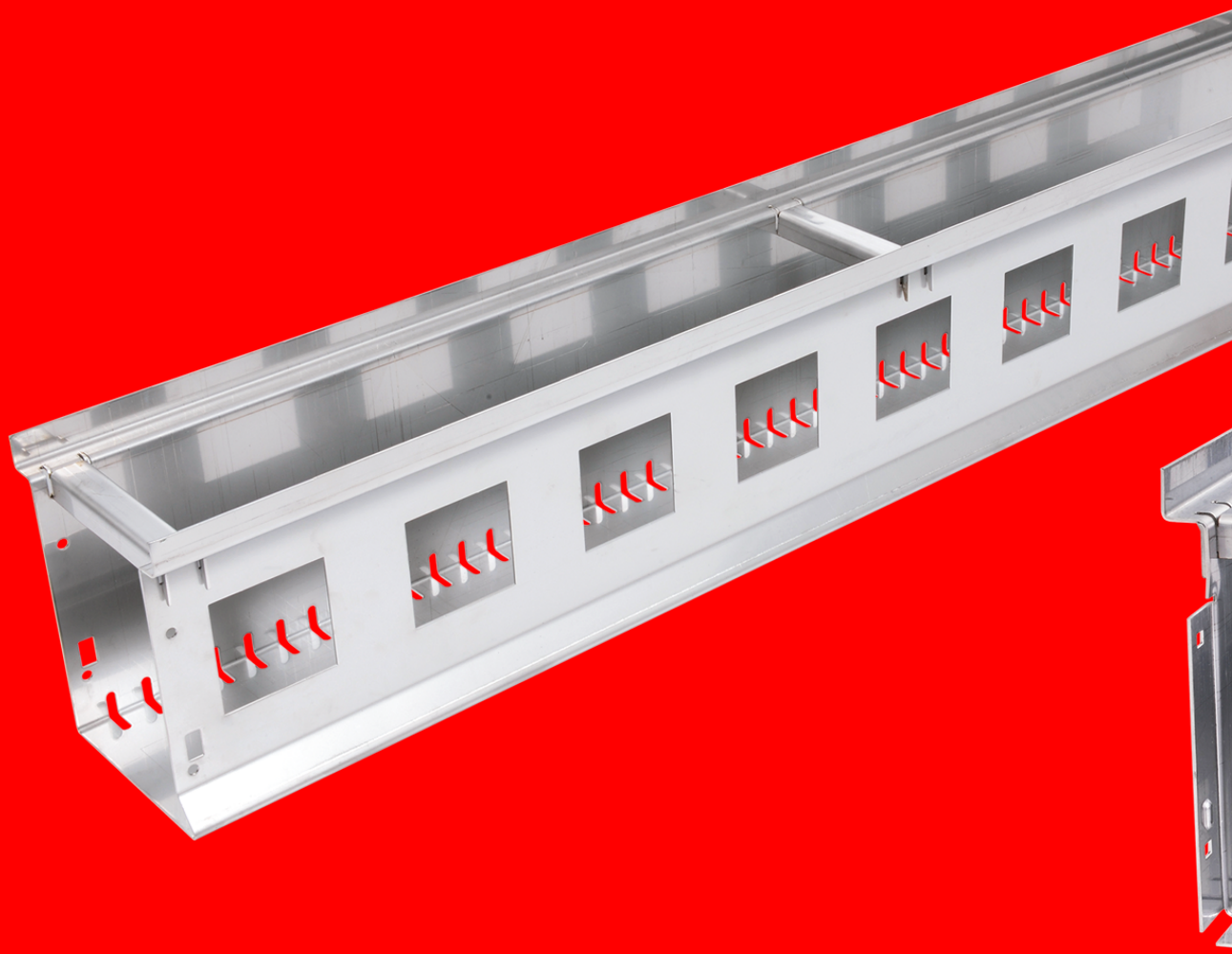
Environmental Product Declaration (EPD)
According to ISO 14025 and EN 15804

Drainage Channels-Generic



Registration number:	EPD-Kiwa-EE-140338-EN
Issue date:	19-10-2023
Valid until:	19-10-2028
Declaration owner:	Richard Brink GmbH & Co. KG
Publisher:	Kiwa-Ecobility Experts
Program operator:	Kiwa-Ecobility Experts
Status:	verified

1 General information

1.1 PRODUCT

Drainage Channels-Generic

1.2 REGISTRATION NUMBER

EPD-Kiwa-EE-140338-EN

1.3 VALIDITY

Issue date: 19-10-2023

Valid until: 19-10-2028

1.4 PROGRAM OPERATOR

Kiwa-Ecobility Experts
Voltastraße 5
13355 Berlin
DE

Frank Huppertz

(Head of Kiwa-Ecobility Experts)

Prof. Dr. Frank Heimbecher

(Chairman of the independent expert committee - Kiwa-Ecobility Experts)

1.5 OWNER OF THE DECLARATION

Manufacturer: Richard Brink GmbH & Co. KG

Address: Görlitzer Straße 1 , 33758 Schloß Holte-Stukenbrock

E-mail: info@richard-brink.de

Website: https://www.richard-brink.de/

Production location: Production Location

Address production location: Schloß Holte-Stukenbrock, Germany, 33758 Stukenbrock

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

Anne Kees Jeeninga, Advieslab

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 Expert PCR B for construction steel products

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. 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

1 General information

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 EPDs programs 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: v3.15 (2023-07-12)

** 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 'Drainage Channels-Generic ' with the calculation identifier ReTHiNK-40338.

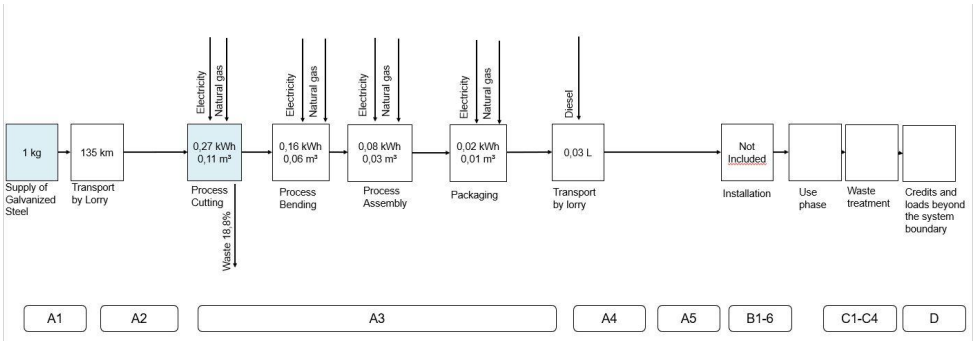
2 Product

2.1 PRODUCT DESCRIPTION

In the context of barrier-free construction, protection against moisture is particularly important for wood and insulated façades, as the base areas of a building often sit below ground level. The Stabile Air drainage channel serves as an excellent choice here, decoupling the base area from the surrounding ground, efficiently redirecting incoming precipitation, and ensuring continuous ventilation for the lower section of the façade through its large ventilation openings. Compared to conventional methods that use angular blocks and gravel fills, the Stabile Air's assembly is significantly faster.

The Stabile Air provides a tailor-made solution specifically for façade drainage. The channel can be manufactured in heights and widths beyond standard ranges, accommodating customer requirements and complying with all relevant standards for façade base dewatering. Its unique design, including projecting elements, ensures a precise fit with the respective reveal dimensions. Additionally, the Stabile Air comes with cover gratings available in over 20 designs, adding both functionality and aesthetics to the solution, paying meticulous attention to detail.

The gap between the base of the building and the rear channel wall prevents moisture from rising due to capillary forces. The large openings enable continuous ventilation and help keep the base dry. Any precipitation and runoff from the façade and adjacent surfaces are collected in the channel and then drained away into the surrounding layers of soil through elongated holes along the channel's side. Alternatively, it can be directed away via a drain nozzle if needed.



2.2 REFERENCE SERVICE LIFE

RSL PRODUCT

Since the service life of Drainage Channel is not considered, there is no need to specify a reference service life. The generic life cycle of product can be considered as 100 years for any calculations basics.

USED RSL (YR) IN THIS LCA CALCULATION:

100

2.3 TECHNICAL DATA

Inlet widths:100 mm; 140 mm; 160 mm; 200 mm; 250 mm; 300 mm

Lengths:1.000 mm to 3,000 mm possible in one piece

Heights: 170 mm; 300 mm

In accordance with the Standard DIN EN 1433:2005-09: Certified on 13.07.2022

2.4 DESCRIPTION PRODUCTION PROCESS

Water channels made of steel for draining water typically undergo a manufacturing process involving several stages. The process typically begins with the selection of high-quality steel materials, followed by cutting and shaping the steel into the desired channel design. The shaping process may involve techniques such as bending, welding, and assembly to create the final product.

Regarding energy consumption, the allocation and measurement of energy usage during the manufacturing process may vary depending on the specific production facility. However, it generally involves the utilization of various machinery and equipment, such as cutting machines, welding tools, and assembly lines. Energy consumption may be measured through monitoring systems, energy meters, or by analyzing the power consumption of individual manufacturing steps.

In terms of production waste, the quantity and measurement method can vary depending on the specific manufacturing practices and waste management systems in place. Waste generated during the production of steel water channels may include scrap metal, excess material from cutting and shaping processes, and packaging waste. Waste quantities can be measured by weighing or estimating the amount of waste generated during each manufacturing stage.

Emissions during production primarily stem from energy consumption and any chemical processes involved. Energy-related emissions can include carbon dioxide (CO2) and other greenhouse gases released during power generation. Additionally, emissions may result from welding or coating processes that involve the use of chemicals or coatings. Monitoring emissions during production typically involves measuring and analyzing exhaust gases and employing emission control technologies to minimize environmental impact.

3 Calculation rules

3.1 DECLARED UNIT

Kg

The declared functional unit is 1 kg. Other declared units are permissible if conversion to 1 kg is depicted in a transparent manner.

Reference unit: kilogram (kg)

3.2 CONVERSION FACTORS

Description	Value	Unit
Reference unit	1	kg
Conversion factor to 1 kg	1.000000	kg

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 Drainage Channels-Generic , a product of Richard Brink GmbH & Co. KG. The results of this EPD are representative for Germany.

3.5 CUT-OFF CRITERIA

Product Stage (A1-A3)

The production stage consists of the extraction of raw materials, transportation of the raw materials, processing the raw materials into materials and the production of the product. The required energy for production, ancillary materials, packaging materials and production emissions are included.

Construction process stage (A4-A5)

This stage consists the transport of the product from production plant to the construction site.

It also includes the loss of material during construction. The additional needed production, transport and end-of-life of the lost material during construction is included.

The end-of-life of packaging material up to the end-of-waste state or disposal of final residues is also included.

Use stage (B1-B3)

The 'use stage' was excluded from the assessment, as it does not contribute to the environmental impacts and overall performance evaluation of the product throughout its life cycle.This is because the product is not designed or intended for use during that specific stage of its life cycle.

End of life stage (C1-C4)

3 Calculation rules

When the end of the life stage of the building is reached, the de-construction/demolition begins. This EPD includes de-construction/demolition (C1), the necessary transport (C2) from the demolition site to the sorting location and distance to final disposal. The end of life stage includes the final disposal to landfill (C4), incineration (C3) and needed recycling processes up to the end-of-waste point (C3). Loads and benefits of recycling, re-use and exported energy are part of module D.

It was determined that Stage C1, which represents the demolition or end-of-life stage, is not considered due to the absence of significant environmental impacts or efforts associated with the demolition of the product. As a result, Stage C1 is excluded from the assessment, as it does not contribute significantly to the overall environmental profile and sustainability evaluation of the product's life cycle.

The prescribed waste scenarios from the NMD Determination method v1.0 have been used for the various materials in the product.

Benefits and Loads beyond the system boundary (Module D)

This stage contains the potential loads and benefits of recycling and re-use of raw materials/products. The loads contain the needed recycling processes from end-of-waste-point up to the point-of-equivalence of the substituted primary raw material and a load for secondary material that will be lost at the end-of-life stage.

The loads and benefits of recycling and reuse are included in this module. The benefits are calculated based on the primary content and the primary equivalent.

In addition, the benefits of energy recovery are granted at this stage. The amount of avoid energy is based on the Lower Heating Values of the materials and the efficiencies of the incinerators as mentioned in the NMD Determination method v1.0 or EcoInvent 3.6 (2019)

3.6 ALLOCATION

Allocation has not been applied in this LCA.

3.7 DATA COLLECTION & REFERENCE TIME PERIOD

01 Jan 2022-01 Jan 23

3.8 ESTIMATES AND ASSUMPTIONS

Assumptions:

The generic electricity mix of Germany is considered in calculation.

Raw material: As of now, generic information on Magnelis® coated steel has been taken into consideration. We are awaiting updated details from the supplier, which will include the EN15804 + A2 values. Once the new information is received, a more comprehensive and accurate overview of Magnelis® coated steel can be considered for EPD calculation.

All the installation material are not considered here in this calculation as the Installation phase is not a part of this.

3.9 DATA QUALITY

Data quality is as per the data shared by the client with the measured values.

4 Scenarios and additional technical information

4.1 DE-CONSTRUCTION, DEMOLITION (C1)

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

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]
Steel coil | cold rolled, galvanised | Steel federation NL	Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	0
Steel coil | cold rolled, galvanised and coated | Steel federation NL	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 [%]
Steel coil | cold rolled, galvanised | Steel federation NL	NL	0	5	0	95	0
Steel coil | cold rolled, galvanised and coated | Steel federation NL	NL	0	5	0	95	0

4 Scenarios and additional technical information

Waste Scenario	Not removed (stays in work) [kg]	Landfill [kg]	Incineration [kg]	Recycling [kg]	Re-use [kg]
Steel coil | cold rolled, galvanised | Steel federation NL	0.000	0.049	0.000	0.929	0.000
Steel coil | cold rolled, galvanised and coated | Steel federation NL	0.000	0.001	0.000	0.021	0.000
Total	**0.000**	**0.050**	**0.000**	**0.950**	**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]
Steel coil | cold rolled, galvanised | Steel federation NL	0.840	0.000
Steel coil | cold rolled, galvanised and coated | Steel federation NL	0.021	0.000
Total	**0.861**	**0.000**

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 KILOGRAM

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbreviation	Unit	A1	A2	A3	C1	C2	C3	C4	D
AP	mol H+ eqv.	1.98E-2	1.06E-4	3.39E-3	0.00E+0	4.11E-5	2.73E-4	2.59E-6	-4.53E-3
GWP-total	kg CO2 eqv.	2.87E+0	1.82E-2	1.19E+0	0.00E+0	7.09E-3	2.43E-2	2.69E-4	-1.66E+0
GWP-b	kg CO2 eqv.	8.41E-4	8.41E-6	1.11E-2	0.00E+0	3.27E-6	-1.30E-3	-3.54E-6	1.96E-2
GWP-f	kg CO2 eqv.	2.86E+0	1.82E-2	1.18E+0	0.00E+0	7.09E-3	2.56E-2	2.73E-4	-1.68E+0
GWP-luluc	kg CO2 eqv.	1.04E-3	6.68E-6	8.28E-4	0.00E+0	2.60E-6	2.92E-5	1.20E-7	6.22E-4
EP-m	kg N eqv.	2.01E-3	3.72E-5	9.15E-4	0.00E+0	1.45E-5	6.12E-5	8.55E-7	-8.74E-4
EP-fw	kg P eqv.	1.21E-4	1.84E-7	6.89E-5	0.00E+0	7.15E-8	7.47E-6	4.88E-9	-3.55E-5
EP-T	mol N eqv.	6.69E-2	4.11E-4	1.15E-2	0.00E+0	1.60E-4	7.17E-4	9.42E-6	-8.09E-3
ODP	kg CFC 11 eqv.	6.92E-8	4.02E-9	1.17E-7	0.00E+0	1.56E-9	3.47E-9	1.12E-10	-6.51E-9
POCP	kg NMVOC eqv.	5.97E-3	1.17E-4	2.90E-3	0.00E+0	4.56E-5	1.92E-4	2.75E-6	-3.30E-3
ADP-f	MJ	2.39E+1	2.75E-1	1.70E+1	0.00E+0	1.07E-1	3.47E-1	7.62E-3	-1.03E+1
ADP-mm	kg Sb-eqv.	1.65E-3	4.62E-7	2.14E-6	0.00E+0	1.80E-7	4.38E-7	3.05E-10	4.49E-7
WDP	m3 world eqv.	4.84E-1	9.83E-4	7.58E-2	0.00E+0	3.82E-4	4.04E-3	3.53E-4	-2.01E-1

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 EN15084+A2

Abbreviation	Unit	A1	A2	A3	C1	C2	C3	C4	D
ETP-fw	CTUe	5.41E+1	2.45E-1	7.28E+0	0.00E+0	9.53E-2	8.19E-1	4.25E-3	-2.71E+1
PM	disease incidence	1.43E-7	1.64E-9	4.19E-8	0.00E+0	6.37E-10	3.58E-9	4.90E-11	-2.93E-8
HTP-c	CTUh	6.46E-9	7.95E-12	6.58E-10	0.00E+0	3.09E-12	2.54E-11	1.08E-13	-3.38E-9
HTP-nc	CTUh	3.07E-8	2.68E-10	2.36E-8	0.00E+0	1.04E-10	1.10E-9	3.39E-12	8.78E-8
IR	kBq U235 eqv.	5.82E-2	1.15E-3	3.35E-2	0.00E+0	4.48E-4	1.57E-3	3.12E-5	-7.10E-3
SQP	Pt	5.49E+0	2.38E-1	3.77E+0	0.00E+0	9.27E-2	6.47E-1	1.61E-2	-1.52E+0

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
	Potential Comparative Toxic Unit for humans (HTP-c)	2

5 Results

ILCD classification	Indicator	Disclaimer
	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

Abbreviation	Unit	A1	A2	A3	C1	C2	C3	C4	D
PERE	MJ	1.33E+0	3.44E-3	1.00E+0	0.00E+0	1.34E-3	5.08E-2	1.95E-4	1.85E-4
PERM	MJ	0.00E+0	0.00E+0	1.79E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	MJ	1.33E+0	3.44E-3	1.18E+0	0.00E+0	1.34E-3	5.08E-2	1.95E-4	1.85E-4
PENRE	MJ	2.85E+1	2.92E-1	2.08E+1	0.00E+0	1.13E-1	3.70E-1	8.12E-3	1.52E-3
PENRM	MJ	0.00E+0	0.00E+0	3.33E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PENRT	MJ	2.85E+1	2.92E-1	2.11E+1	0.00E+0	1.13E-1	3.70E-1	8.12E-3	1.52E-3
SM	Kg	8.91E-2	0.00E+0	1.67E-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
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
FW	M3	2.11E-2	3.35E-5	6.13E-3	0.00E+0	1.30E-5	1.10E-4	8.19E-6	1.02E-6

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

Abbreviation	Unit	A1	A2	A3	C1	C2	C3	C4	D
HWD	Kg	3.18E-4	6.96E-7	3.60E-5	0.00E+0	2.71E-7	4.20E-7	5.38E-9	5.33E-10
NHWD	Kg	2.47E-1	1.74E-2	8.41E-2	0.00E+0	6.78E-3	1.01E-2	5.00E-2	2.88E-5
RWD	Kg	5.88E-5	1.80E-6	4.50E-5	0.00E+0	7.02E-7	2.00E-6	4.98E-8	2.38E-9

HWD=hazardous waste disposed | **NHWD**=non hazardous waste disposed | **RWD**=radioactive waste disposed

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbreviation	Unit	A1	A2	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
MFR	Kg	0.00E+0	0.00E+0	1.75E-1	0.00E+0	0.00E+0	9.50E-1	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
EET	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
EEE	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

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 KILOGRAM

BIOGENIC CARBON CONTENT

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

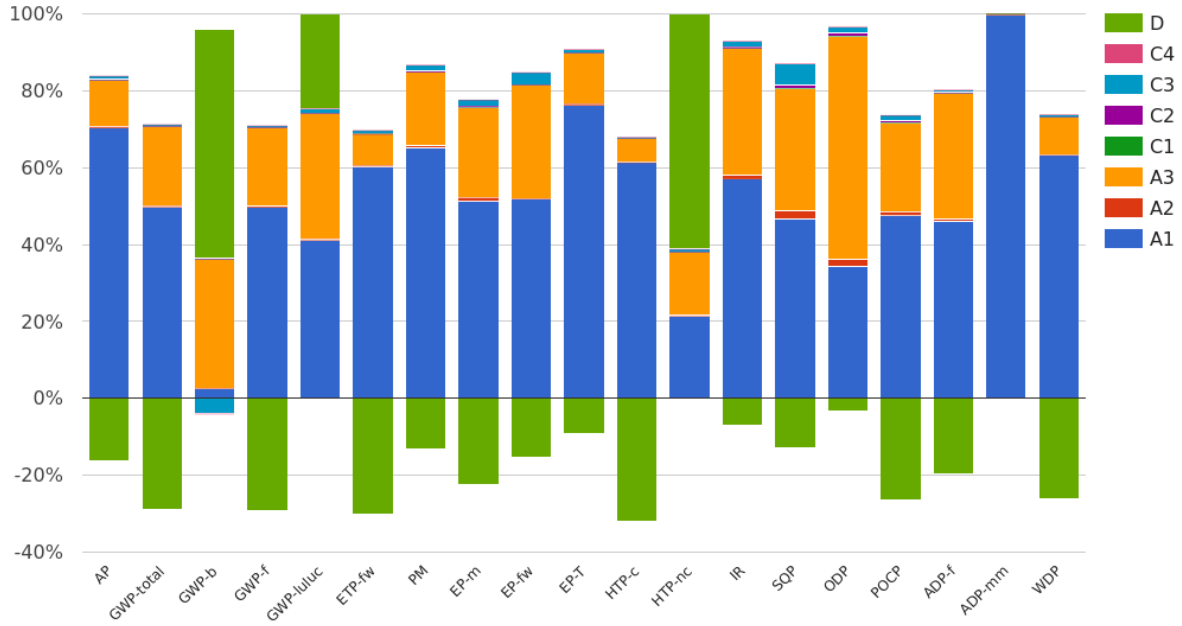
Biogenic carbon content	Amount	Unit
Biogenic carbon content in the product	0	kg C
Biogenic carbon content in accompanying packaging	0.005118	kg C

UPTAKE OF BIOGENIC CARBON DIOXIDE

The following amount of uptake of carbon dioxide is account in module A1 by the main parts of the product. 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	0.01876	kg CO2 (biogenic)

6 Interpretation



The graph illustrates the impact of various factors on the x-axis, representing different indicator factors, while the legends denote the modules on the y-axis. Module A, specifically A1 (Raw Materials) and A3 (Service Inputs), stands out as the primary contributor, highlighting the substantial influence of raw materials and essential services in the calculations. Module D, focusing on product recycling and reuse, also holds significant impact. Modules B and C follow, each exhibiting distinct impacts from the indicator factors. This data serves as a roadmap for system enhancement, emphasizing the importance of optimizing raw material usage, efficient service utilization, and sustainable product life cycles.

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 Expert PCR B for construction steel products

8 Contact information

Publisher	Operator	Owner of declaration

Kiwa-Ecobility Experts
Voltastraße 5
13355 Berlin, DE

E-mail:
DE.Ecobility.Experts@kiwa.com
Website:
https://www.kiwa.com/de/en/themes/ecobility-experts/ecobility-experts-epd-program/

Kiwa-Ecobility Experts
Voltastraße 5
13355 Berlin, DE

E-mail:
DE.Ecobility.Experts@kiwa.com
Website:
https://www.kiwa.com/de/en/themes/ecobility-experts/ecobility-experts-epd-program/

Richard Brink GmbH & Co. KG
Görlitzer Straße 1
33758 Schloß Holte-Stukenbrock, DE

E-mail:
info@richard-brink.de
Website:
https://www.richard-brink.de/

Kiwa-Ecobility Experts is established member of the ECO PLATFORM