ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Schlüter-Systems KG
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-SLK-20250136-IBC1-EN
Issue date	29/04/2025
Valid to	28/04/2030

DITRA Uncoupling and Waterproofing Membrane

Schlüter-Systems KG

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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1. General Information

Schlüter-Systems KG

Programme holder

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

Declaration number

EPD-SLK-20250136-IBC1-EN

This declaration is based on the product category rules:

Plastic and elastomer roofing and sealing sheet systems, 01/08/2021
(PCR checked and approved by the SVR)

Issue date

29/04/2025

Valid to

28/04/2030

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

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

DITRA Uncoupling and Waterproofing Membrane

Owner of the declaration

Schlüter-Systems KG
Schmölestraße 7
58640 Iserlohn
Germany

Declared product / declared unit

The declared product is 1 m^2 of the production quantity weighted average for DITRA Uncoupling and Waterproofing Membrane, including packaging materials.

Scope:

This EPD applies for the following products of Schlüter-Systems KG, Iserlohn, Germany: DITRA Uncoupling and Waterproofing Membrane DITRA D 5M and DITRA D 30M.

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

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

Verification

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

Matthias Klingler,
(Independent verifier)

2. Product

2.1 Product description/Product definition

DITRA is a polypropylene membrane with EasyCut gridlines as well as square, dovetailed EasyFill recesses and an anchoring fleece laminated to the underside.
The waterproofing system DITRA has European approvals (ETA = European Technical Assessment) in accordance with *EAD 030400-00-0605* and *EAD 030436-00-0503* and is marked with a CE symbol as well as approval for the German market (abP).

2.2 Application

DITRA is a waterproofing and uncoupling membrane for use in conjunction with tile and slab coverings. It is also vapor pressure equalizing in the case of rear moisture, crack-bridging and load-bearing.

2.3 Technical Data

The waterproofing membrane is made of polypropylene (PP), onto which a PP fleece is laminated on the underside.

Declared performances in connection with EAD 030436-00-0503

Name	Value
Reaction to fire (EN 13501-1)	Euroclass E
Vapour permeability	Sd = 190 m
Water tightness	Watertight
Crack bridging ability	Assessment category 3
Bond strength	Assessment category 1 resp. Assessment category 3
Water tightness around penetrations	Watertight
Resistance to temperature	Pass
Resistance to water	Assessment category 1 resp. Assessment category 2
Resistance to alkalinity	Pass. Assessment category 2

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to ETA no. *ETA-23/0556*, 25.08.2023 and *ETA-24/0839*, 15.10.2024 - waterproofing system Schlüter®-DITRA.

2.4 Delivery status

Dimensions: Rolls in lengths of 5.1 m or 30.2 m with a width of 0.995 m and a thickness of 3.5 mm.

Further information at www.schlueter-systems.com

2.5 Base materials/Ancillary materials

Basic materials

The DITRA membran has a surface weight of 535 g/m² and consists of the following components:

Name	Value	Unit
Polypropylene	98.1	[% / m²]
Colorant (non-hazardous)	1.9	[% / m²]

REACH

In accordance with *Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals ('REACH')*, the above product is defined as an article and as such is not subject to registration under *REACH*. The raw materials used are either not subject to registration (polymers) or have been registered by our suppliers and/or the manufacturers or are registered in the European Chemicals Inventory. No chemical substances are released from the above-mentioned product when used as intended.
Schlüter-DITRA does not contain any substance of very high concern on *the candidate list* above a concentration of 0.1 % (w/w). The legal requirements specified in Annexes XIV (substances subject to authorization) and XVII (restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles) are taken into account and fulfilled for our products.

MICROPLASTICS

The above product is exempt from the prohibitions of *Regulation (EU) No 2023/2055 amending Annex XVII to Regulation (EC) No 1907/2006 (REACH)* with regard to synthetic polymer microparticles (construction products). Raw materials that may contain microplastics are used for production, but no primary microplastics are released either during industrial application in our company or during the end use of the product.

PFAS- PER- AND POLYFLUORINATED ALKYL COMPOUNDS

No PFAS in the form of PFOS: perfluorooctane sulfonic acid PFOA: perfluorooctanoic acid have been actively added to the above-mentioned product.

CHLORINATED KEROSENES - SHORT-CHAINED (SCCP-SHORT-CHAINED CHLORINATED KEROSENES)

The above-mentioned product does not contain SCCP in a concentration > 0.15 % (w/w).

MEDIUM-CHAINED CHLORINATED KEROSENES (MCCP-MEDIUM-CHAINED CHLORINATED KEROSENES)

The above product does not contain MCCP in a concentration > 0.1 % (w/w).

PHTALATES

The above product does not contain phthalates above a concentration of 0.1 % (w/w).

VOLATILE ORGANIC COMPOUNDS

VOC: 'Volatile organic compound': Not detected
VVOC: 'Highly volatile organic compound': Not detected
SVOC: 'Highly volatile organic compounds': Not detected

Mercury

The product does not contain any mercury; the requirements of the regulation are also taken into account when selecting raw materials and manufacturing processes and when using machinery.
The above-mentioned product does not contain lead or lead compounds in concentrations > 0.1 % (w/w).
The above product does not contain chromium or chromium compounds.
The above product does not contain cadmium metal above a concentration of 0.01 % (w/w).
The above product does not contain organotin compounds above a concentration of 0.1 % (w/w).

OZON

The above product does not contain any of the substances listed in Annex I or Annex II of *Regulation (EU) No 2017/605 amending Regulation (EC) No 1005/2009*.

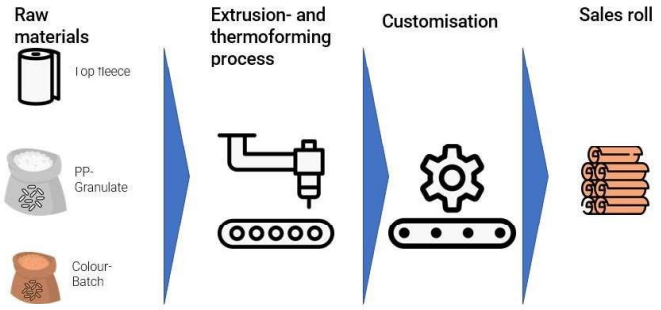
BIOCIDE

The above product has not been treated with biocides and no

biocides have been added.

2.6 Manufacture

The waterproofing membrane is made of polypropylene (PP), onto which a PP fleece is laminated on the underside.
The fleece is made from polypropylene (PP) granules in a continuous extrusion process.
A flat plastic sheet of uniform thickness is produced from polypropylene (PP) granulate in a continuous extrusion process. The plastic sheet is then thermoformed and thermally fused with the fleece.



2.7 Environment and health during manufacturing

In the manufacture of DITRA waterproofing membranes, no measures beyond the national occupational health and safety regulations are required in all production steps to protect the health of employees.

2.8 Product processing/Installation

Product and application-dependent installation recommendations are described in brochures, installation instructions and product data sheets from Schlüter-Systems KG. These can be obtained directly from Schlüter-Systems KG or via the Internet. No special personal protection is required when installing DITRA. Waterproofing membrane waste generated on construction sites must be collected separately and disposed of properly.

2.9 Packaging

The packaging consists of polyethylene (PE) foil and cardboard. This should be collected separately and disposed of appropriately. Wooden EU pallets are used for distribution.

2.10 Condition of use

All materials used are non-aging and moistureresistant when fitted so that the mechanical properties remain unchanged during the entire service life.

2.11 Environment and health during use

The product is a waterproofing membrane that is installed underneath a top layer and therefore has no direct contact with the ambient air.

The use of the waterproofing membrane is not expected to pose any health risks. Proof is provided by a VOC emission test based on European regulations. The tested product fulfills the requirements of the *French VOC Regulation,* the *French Regulation on carcinogenic, mutagenic, reprotoxic (CMR) components*, Italian *CAM Edilizia*, German *AgBB*, *Belgian Regulation on Indoor Air Quality*, *EMICODE EC1 PLUS*, *Indoor Air Comfort GOLD*, *Blue Angel*, *BREEAM International* and *LEED v4.1 BETA*. Corresponding certificates can be requested from Schlüter-Systems KG.

2.12 Reference service life

The service life of DITRA corresponds to the service life of the component in which it is used. This is based on its mechanical rigidity and resistance to the effects of water.
Description of the influences on the ageing of the product when applied in accordance with the rules of technology.

2.13 Extraordinary effects

Fire

In connection with European and German approval procedures for the waterproofing membrane, DITRA was tested for fire resistance on the basis of *DIN EN 13501-1* and rated as building material class E.

Fire protection

Name	Value
DIN EN 13501-1	Class E

Water

Schlüter-DITRA is made of polypropylene and is waterproof. When used properly and in contact with water, no water-soluble substances are released from the waterproofing membrane that could lead to environmental contamination (groundwater, rivers, etc.).

Mechanical destruction

Due to its material type, DITRA is resistant to mechanical loads, so that effects on the environment are not to be expected in the event of unforeseeable mechanical destruction.

2.14 Re-use phase

After installation, the product forms a composite material with screed, tile adhesive and surface covering (tiles, natural stone, etc.). During removal and in the further disposal process, this composite material is separated to such an extent that the product can then be disposed of by thermal utilisation.

2.15 Disposal

Offcut: The waste key according to the *European Waste Catalogue (AVV/EWC)* is 17 02 03 for contaminated plastic disposal on construction sites.

Demolition: The waste key according to the *European Waste Catalogue (AVV/EWC)* is 17 09 04 for Mixed construction and demolition wastes other than those mentioned in 17 09 01 and 17 09 02.

2.16 Further information

Further information can be found at www.schlueter-systems.com

3. LCA: Calculation rules

3.1 Declared Unit

The declared unit is 1 m² of the production quantitiy weighted average for a DITRA uncoupling and waterproofing membrane, including packaging materials. This EPD covers the following products:

- DITRA Uncoupling and Waterproofing Membrane D 5M
- DITRA Uncoupling and Waterproofing Membrane D 30M

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	m^2
Grammage	0.662	kg/m^2
conversion factor to 1 kg	1.869	-
Layer thickness	0.0035	m

3.2 System boundary

Type of EPD: Cradle to gate with options (modules A1-A3, C1-C4 and D). The following modules are considered in accordance with *EN 15804 +A2*:

Module A1-A3

For modules A1-A3, the system boundaries include all raw materials as well as transports, for both material and energy flows, used in the manufacturing of the products from cradle to factory gate.

Modules C1-C4

Module C1 describes the expenses after the product's end of life for dismantling or demolition of the product from the building with a demolition hammer. In module C2, the transports to the disposal processes are considered.
Module C3 contains the necessary processes for waste treatment at the end of the product life cycle, which is a construction waste treatment plant and a waste-to-energy plant (WtE). The loads for waste treatment are mapped here until the end of the waste property is reached. Emissions are assigned to module C3. Resulting credits are assigned to module D.

Module D

The output flows resulting from the waste treatment in A3 and C3, which can potentially serve as energetic input (waste-to-energy route) for a downstream product system, are reported in Module D. Emissions from waste incineration processes are assigned to the respective module (A3/C3) and not to module D.

3.3 Estimates and assumptions

The colorant is largely made up of a PE-based substrate. The exact formula of the non-hazardous pigments is intellectual property of the supplier. Therefore, the data set Polyethylene (PE) in waste incineration plant (0 % H_2O content) was used, when modelling the incineration of the colorant at Module A3 as production waste.

3.4 Cut-off criteria

All material and energy flows entering the product system were taken into account.

3.5 Background data

For the LCA model, the software system for life cycle assessment (*LCA for Experts*) version 10.9 was used. As far as possible, background data sets from the current version of the *LCA for Experts* databases (Service pack 2024.1) were used. In some cases the *ecoinvent* database 3.9 was used.

3.6 Data quality

Foreground data

The data collection for the investigated product was carried out on the basis of evaluations of internal production and environmental data, the collection of LCA-relevant data within the supplier chain as well as by measuring relevant data for the energy supply. The data collected was checked for plausibility and consistency. A good level of representativeness can be assumed.

Background data

The background data sets used for the balancing are generally not older than 10 years. All datasets received an overall rating of very good or good data quality for temporal, technical, and geographical representativeness.

The variants considered in this EPD have the same composition and differ only in their dimensions and thus the amount of packaging material. When evaluating modules A1 to A3 it was assessed that the deviation of all products range between -15 % and 1 % for GWP-fossil.

3.7 Period under review

The collected material and energy data originate from the period January 01, 2022 to December 31, 2022.

3.8 Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Europe

3.9 Allocation

Within the defined system boundaries, in the production process, data for the product was determined with respect to the total produced area (m^2). The primary data for the material and energy inputs was gathered for the specific product declared. There are no co-products.

3.10 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. As far as possible, background data sets from the current version 10.8 of the *LCA for Experts* databases (Service pack 2024.1) were used. In some cases the *ecoinvent* database 3.9 was used.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

The biogenic carbon content was calculated based on the product components. Biogenic carbon is only found in the packaging (cardboard and wood).

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	0.054	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Installation into the building (A5 - technical scenario)

Output of waste packaging after installation

Name	Value	Unit
Cardboard	0.0043	kg
PE film (PE-HD)	0.0059	kg
Wood	0.1165	kg

The service life of the product corresponds to the service life of the component in which it is used.

End of life (C1-C4)
Module C1 describes the expenses after the product's end of life for dismantling or demolition of the product from the building with a demolition hammer. Assuming a 2000 W demolition hammer working an area of around 3 m^2 per hour, 2.52 MJ per m^2 are used as conservative approximation for the energy demand in C1.

In module C2, the transports to the disposal processes are considered (100 km with 61 % utilization rate).

Module C3 contains the necessary processes for waste treatment at the end of the product life cycle, which is a construction waste treatment plant. This process includes a 3 % material loss. Next, the membrane is treated in a waste-to-energy-plant (WtE).

Name	Value	Unit
Electricity for demolition (C1)	2.52	MJ
Transport to waste treatment (C2)	100	km
Collected as mixed construction waste (C3)	0.535	kg
Energy recovery (C3)	0.519	kg

Reuse, recovery and recycling potential (D)
In Module D, the output flows resulting from the production waste treatment in A3 and C3, which can potentially serve as energetic (waste-to-energy route) input for a downstream product system, are reported.

5. LCA: Results

The present results in the impact categories refer to the potential environmental impacts in an analysis period of 100 years. Long-term emissions (> 100 years) are not considered in the impact assessment. Note: Impact assessment results are relative statements only and do not provide information on impact category endpoints, threshold exceedances, margins of safety, or on risks. For all indicators mentioned, the characterisation factors of *EC-JRC* (EF 3.1) were applied.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m2 DITRA membrane

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Global Warming Potential total (GWP-total)	kg CO_2 eq	2.33E+00	3.51E-01	2.95E-03	1.63E+00	0	-7.54E-01
Global Warming Potential fossil fuels (GWP-fossil)	kg CO_2 eq	2.33E+00	3.51E-01	2.9E-03	1.63E+00	0	-7.54E-01
Global Warming Potential biogenic (GWP-biogenic)	kg CO_2 eq	0	0	0	0	0	0
Global Warming Potential luluc (GWP-luluc)	kg CO_2 eq	8.39E-04	5.25E-05	4.75E-05	2.26E-05	0	-7.01E-05
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC11 eq	4.4E-10	3.86E-12	4.16E-16	8.88E-14	0	-6.98E-12
Acidification potential of land and water (AP)	mol H^+ eq	2.92E-03	8.2E-04	1.22E-05	1.69E-04	0	-7.98E-04
Eutrophication potential aquatic freshwater (EP-freshwater)	kg P eq	3.58E-06	1.84E-07	1.21E-08	2.41E-08	0	-1.31E-06
Eutrophication potential aquatic marine (EP-marine)	kg N eq	9.25E-04	1.37E-04	5.77E-06	3.81E-05	0	-2.44E-04
Eutrophication potential terrestrial (EP-terrestrial)	mol N eq	9.63E-03	1.47E-03	6.44E-05	8.05E-04	0	-2.62E-03
Formation potential of tropospheric ozone photochemical oxidants (POCP)	kg NMVOC eq	3.17E-03	4.1E-04	1.15E-05	1.13E-04	0	-6.88E-04
Abiotic depletion potential for non fossil resources (ADPE)	kg Sb eq	1.32E-07	1.66E-08	2.46E-10	2.4E-09	0	-6.67E-08
Abiotic depletion potential for fossil resources (ADPF)	MJ	5.21E+01	6.51E+00	3.72E-02	2.15E-01	0	-1.34E+01
Water use (WDP)	m^3 world eq deprived	7.34E-02	2E-02	4.37E-05	1.5E-01	0	-8.05E-02

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

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier (PERE)	MJ	1.7E-01	9.27E-01	3.2E-03	5.73E-02	0	-4.58E+00
Renewable primary energy resources as material utilization (PERM)	MJ	1.93E+00	0	0	0	0	0
Total use of renewable primary energy resources (PERT)	MJ	2.1E+00	9.27E-01	3.2E-03	5.73E-02	0	-4.58E+00
Non renewable primary energy as energy carrier (PENRE)	MJ	2.86E+01	6.51E+00	3.72E-02	2.34E+01	0	-1.34E+01
Non renewable primary energy as material utilization (PENRM)	MJ	2.34E+01	0	0	-2.32E+01	0	0
Total use of non renewable primary energy resources (PENRT)	MJ	5.21E+01	6.51E+00	3.72E-02	2.15E-01	0	-1.34E+01
Use of secondary material (SM)	kg	3.98E-03	0	0	0	0	0
Use of renewable secondary fuels (RSF)	MJ	0	0	0	0	0	0
Use of non renewable secondary fuels (NRSF)	MJ	0	0	0	0	0	0
Use of net fresh water (FW)	m^3	6.35E-03	1.31E-03	3.57E-06	3.52E-03	0	-3.43E-03

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m2 DITRA membrane

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	5.52E-09	9.21E-10	1.42E-12	1.17E-10	0	-9.29E-09
Non hazardous waste disposed (NHWD)	kg	1.39E-02	1.61E-03	6.07E-06	6.45E-03	0	-7.05E-03
Radioactive waste disposed (RWD)	kg	8.58E-04	8.41E-04	6.78E-08	1.11E-05	0	-9.87E-04
Components for re-use (CRU)	kg	0	0	0	0	0	0
Materials for recycling (MFR)	kg	0	0	0	0	0	0
Materials for energy recovery (MER)	kg	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	1.25E-01	0	0	3.47E+00	0	0
Exported thermal energy (EET)	MJ	2.88E-01	0	0	6.16E+00	0	0

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 m2 DITRA membrane

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Incidence of disease due to PM emissions (PM)	Disease incidence	ND	ND	ND	ND	ND	ND

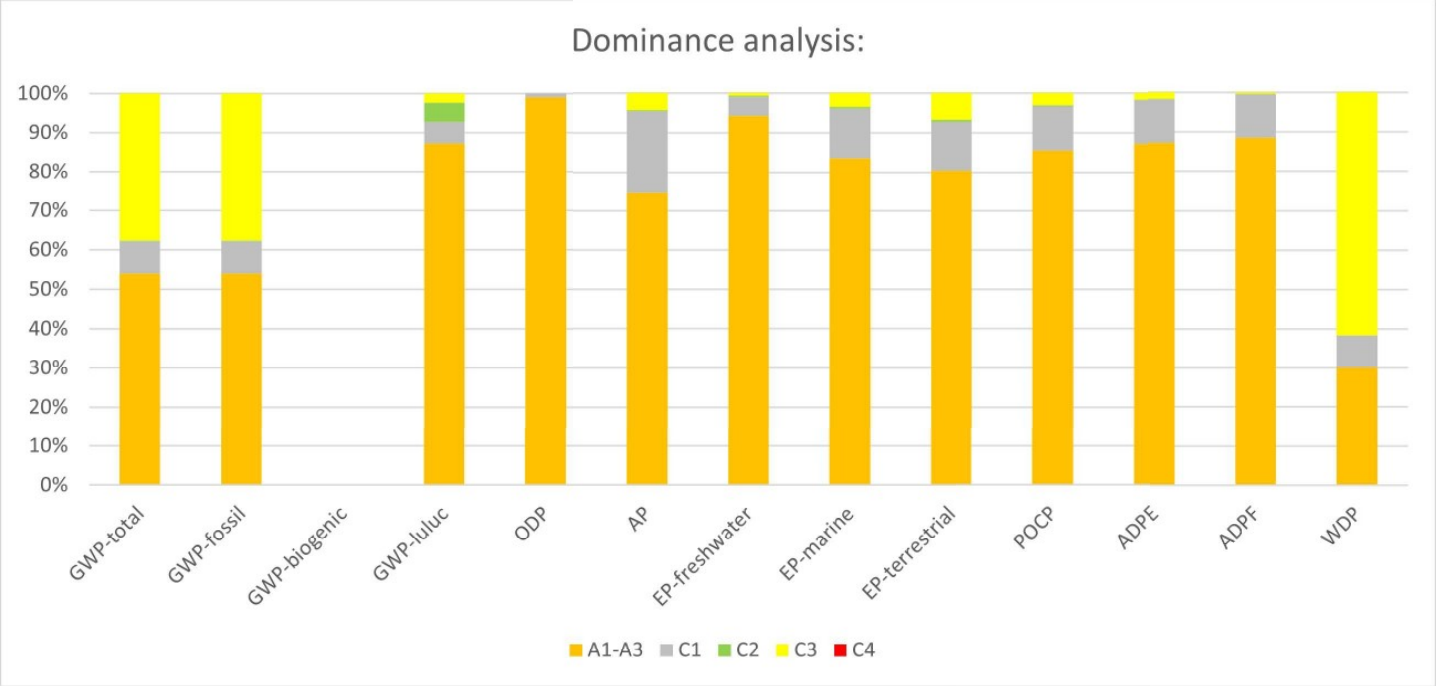
Human exposure efficiency relative to U235 (IR)	kBq U235 eq	ND	ND	ND	ND	ND	ND
Comparative toxic unit for ecosystems (ETP-fw)	CTUe	ND	ND	ND	ND	ND	ND
Comparative toxic unit for humans (carcinogenic) (HTP-c)	CTUh	ND	ND	ND	ND	ND	ND
Comparative toxic unit for humans (noncarcinogenic) (HTP-nc)	CTUh	ND	ND	ND	ND	ND	ND
Soil quality index (SQP)	SQP	ND	ND	ND	ND	ND	ND

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

6. LCA: Interpretation

The evaluation of the environmental impacts allows the following interpretation:



As can be seen above, for GWP-total and GWP-fossil, modules A1-A3 account for 54 % of the total environmental impact, followed by module C3 with around 38 %, due to the product's incineration. For the indicator WDP, around 61 % of the impact is related to the incineration in module C3, followed by 30 % contribution from modules A1-A3. For the rest of the indicators, above 70 % of the impact occurs in modules A1-A3, with module C1 being the second largest contributor, due to energy demand for demolishing the product. The latter can be seen as a conservative assessment, as the impact of this energy demand should be shared with the demolishing of other products, such as tiles.

Module C2, transport to the waste-treatment facility, only shows a noticeable impact of about 5% for the indicator GWP-luluc.

GWP-biogenic shows no impact. The negative impact through biogenic carbon being bound to packaging material in modules A1-A3, is balanced out in the same module, as A5 is not declared in this EPD.

In order to identify the responsible sources along the life cycle, the environmental impacts are analyzed using the example of global warming potential (GWP-total): Largest single contributor to the total global warming potential is the waste incineration of polypropylene (37 %), followed by the electric energy demand (27 %) and the provision of polypropylene (25 %) for production.

When evaluating modules A1 to A3, it was assessed that the deviation of all products range between -15 % and 1 % for GWP-fossil.

7. Requisite evidence

VOC emissions

DITRA was tested in spring 2022 by the testing institute Eurofins Danmark for emissions of volatile organic compounds (VOC) according to the Indoor Air Comfort GOLD test protocol and is suitable for indoor use.

Name	Value	Unit
TVOC	<5	µg/m³
SVOC components	None determined	µg/m³
VOC without NIK	None determined	µg/m³
R-value	0	dimensionless
Carcinogenic Substances	<1	µg/m³

8. References

Standards

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.

ISO 14025
DIN EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

DIN EN 13501-1
DIN EN 13501-1:2018, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests; German version EN 13501-1:2018

Further literature

AgBB
AgBB Scheme:2024, Evaluation Scheme for VOC Emissions from Construction Products — Committee for Health-related Evaluation of Building Products (AgBB), Berlin: German Environment Agency (Umweltbundesamt), September 2024.

AVV
Waste Catalogue Ordinance (AVV) of 10 December 2001 (BGBl. I p. 3379), last amended by Article 1 of the Ordinance of 30 June 2020 (BGBl. I p. 1533).

Belgian Regulation on Indoor Air Quality
Law of 6 November 2022 on Improving Indoor Air Quality in Enclosed Public Spaces — Brussels: Federal Public Service for Health, Food Chain Safety and Environment, November 6, 2022.

Blue Angel
Blue Angel:1978, Environmental Label for Eco-Friendly Products and Services — Berlin: RAL gGmbH on behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), 1978.

BREEAM International
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