ENVIRONMENTAL PRODUCT DECLARATION

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

Owner of the Declaration	MEA Group GmbH
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-MEA-20240245-IBI1-EN
Issue date	28/01/2025
Valid to	27/01/2030

SMC Products

MEA Group GmbH

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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1. General Information

MEA Group GmbH

Programme holder

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

Declaration number

EPD-MEA-20240245-IBI1-EN

This declaration is based on the product category rules:

Reaction resin products, 01/08/2021
(PCR checked and approved by the SVR)

Issue date

28/01/2025

Valid to

27/01/2030

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

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

SMC Products

Owner of the declaration

MEA Group GmbH
Sudetenstraße 1
86551 Aichach
Germany

Declared product / declared unit

1 kg product made from SMC

Scope:

This EPD declares 1 kg product made from SMC from MEA Group GmbH. The data collection refers to the year 2023 for one plant:

MEA Industries Sàrl
25 Av. Jean Prouvé,
88100, Saint-Dié-des-Vosges
France
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

Christina Bocher,
(Independent verifier)

2. Product

2.1 Product description/Product definition

SMC is a sheet molding compound whose resin component consists of unsaturated polyester. The pressed product is reinforced by the addition of glass fibers.The molding compound contains other components such as fillers and additives to optimize the technical properties of the molded part. During the molding process, the SMC compound hardens completely to form a thermoset material. Even when exposed to high temperatures, the molded part does not soften, but remains dimensionally stable until thermal decomposition.The EPD is representative for all products made from SMC of the MEA Group GmbH.

For the placing on the market of the product in the European Union/European Free Trade Association(EU/EFTA) (with the exception of Switzerland) Regulation (EU)No. 305/2011 (CPR) applies. The product needs a declaration of performance taking into consideration *EN 1433:2002 +AC:2004 + A1:2005, Drainage channels for vehicular andpedestrian areas - Classification, design and testingrequirements, marking and evaluation of conformity*. For theapplication and use the respective national provisions apply. Other SMC products are not standardized.

2.2 Application

Products made from SMC are suitable for surface drainage of traffic areas, but are also widely used in the construction industry for various purposes, e.g. as doormat boxes, light wells and mailboxes.

2.3 Technical Data

Products made from SMC are not standardized except for drainage channels. These are manufactured in accordance with EN 1433. Regarding the required declaration of performance the following technical data is relevant:

Constructional data

Name	Value	Unit
Density	1810	kg/m^3
Tensile bond strength	>= 115	N/mm^2
Modulus of elasticity	>= 7500	N/mm²
Water resistance	fulfilled	-
Load capacity (max. load)	E 600	-

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to *EN 1433:2002 + AC:2004+A1:2005, Drainage channels for vehicular and pedestrian areas - Classification, design and testing requirements, marking and evaluation of conformity.*

2.4 Delivery status

Products made from SMC are pressed into molds, so numerous dimensions and shapes of the products are possible. Standard products have a mass range from 1 kg to over 32 kg and correspond to the data sheets. Delivery takes place on a wooden pallet where products are secured with strapping tape (PET - Polyethylene terephthalate) and foil (PE - Polyethylen).

2.5 Base materials/Ancillary materials

Glass fiber, calcium carbonate, unsaturated polyester resin, as well as inhibitors and additives as retarders or catalysts are used to manufacture the products.

This product/article/at least one partial article contains substances listed in the candidate list (date: 22.02.2024) exceeding 0.1 percentage by mass: NO.

This product/article/at least one partial article contains other CMR substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: NO.

Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Ordinance on Biocide Products No. 528/2012): NO.

2.6 Manufacture

In the first department, the SMC semi-finished product in film form on rolls is created by fully automatically mixing the resin filler mixture (paste) with the glass fibers on a continuous production line. After a maturation period of around 4 days, the SMC material can be cut in the pressing department and further processed into finished components using hydraulic vertical presses (high pressure 80 bar and 140-160 °C). After a cycle of around 2-3 minutes in the mold, the pressed molded parts are polymerized and ready for rework (deburring, drilling). The manufactured SMC components are then packed on pallets.

2.7 Environment and health during manufacturing

The production facilities are equipped with extraction systems and there is no health risk to employees.

2.8 Product processing/Installation

The prefabricated products are usually not processed during installation. Elements are laid by hand.

2.9 Packaging

The products are delivered on reusable wooden pallets (0.048 kg/kg) stacked with strapping tape made of polyethylene terephthalate (0.001 kg/kg) and polyethylene foil (0.016 kg/kg). The wooden pallet can be thermally recycled when it reaches the end of its life. The strapping tape and film are disposed as plastic waste.

2.10 Condition of use

If used properly, there is no known change of conditions during the period of use.

2.11 Environment and health during use

Any harmful substances are encapsulated and are not released when used properly. There are no known effects on the environment or health during use.

2.12 Reference service life

According to the manufacturer's estimates, the technical service life is more than 50 years. The actual useful life depends primarily on the use and total useful life of the usable area or traffic area. Relevant aging processes are not known.

2.13 Extraordinary effects

Fire

Fire-related properties depend in particular on the wall thickness of the SMC products.
Basically, the material does not show any burning drippings and the development of smoke is very low. A test according to *EN 13501:1* is currently not available.

Water

The products are particularly designed to drain rainwater. The use of the elements in the area of rainwater is product-specific. There is no contamination of the discharged water.

Mechanical destruction
If handled properly, no destruction will occur. No effects on the environment or health are expected.

2.14 Re-use phase
Pure SMC waste is used as a secondary material in the production of cement clinker (substitution of calciumcarbonate) and serves on the other hand as a substitute fuel in the rotary kiln. After crushing, it can also be reused in the form of aggregates in concrete production or as gravel replacement in the substructure.

2.15 Disposal
If SMC is present in mixed construction waste, landfilling is also possible. Possible waste codes are: 17 01 01: concrete or 17 01 08: other mixed construction and demolition waste.

2.16 Further information
https://www.mea-group.com/de/de/mea-group/water-management/

3. LCA: Calculation rules

3.1 Declared Unit
The declared unit is set as 1 kg of product made from SMC.

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	kg
Gross density	1810	kg/m^3

The product is available in different dimensions on the market. The differences arise from different shapes, nominal widths and lengths. In addition, minimally adapted material mixtures are used.
In order to be able to generate meaningful results, a representative average mixture was calculated. The specific density of the respective mixtures and their specific proportion of the total production were taken into account in the calculation. The differences within the recipes are minimal, so that they have no relevant influence on the life cycle assessment results.

3.2 System boundary
The EPD system boundary takes into account the following life cycle phases: cradle to gate - with options.

- Production stage (A1–A3)
- Construction process stage (A4–A5)
- End of life stage (C1–C4)
- Benefits and loads beyond the system boundaries (D)

A1–A3
Module A1 includes all relevant processes that are necessary to provide the raw materials and intermediate products. Germany and other European countries are used as production locations for the intermediate products. Module A2 maps all relevant transport processes for raw materials and intermediate products to the production site. Trucks and a container ship are used. Module A3 describes the production of the declared product at the production site. Electricity and thermal energy from natural gas are used for manufacturing. The production of the packaging (wooden pallet, PET strapping, PE film) is also declared in A3.
Breakage and technical scrap are taken into account.

A4–A5
Module A4 describes the average transport of the product from the production site to the construction site. SMC products are sold throughout Europe (see Chapter 4, 'Transport from the gate to the site (A4)'). Module A5 describes the installation of the product in the building. The declared products can usually be laid and installed by hand and without the use of large machines. No material and energy flows are necessary. In addition, the product is separated from the packaging which is then transported to the disposal point. The proportionate wooden pallet is burned, and the resulting ecological benefits are shown in Module D. The R1 value of the incinerator is less than 0.6. The PET strapping and the PE films are disposed of as plastic waste (see Chapter 4, "Assembly (A5)").

C1–C4
Module C1 covers the dismantling of the product. The dismantling is carried out using excavators. Module C2 maps the transport to waste treatment (Module C3). Module C3 maps waste treatment for reuse, recovery and/or recycling.
In particular, SMC products that are used in traffic areas (e.g. gutters) can be used as bulk substructure material in road construction. Products in buildings, such as light wells and door scraper boxes, are sent to the landfill (C4) together with other building rubble after the building has been demolished. The distribution of the products corresponds to 52% being sent to landfill and 48% being reused as bulk material (see Chapter 4, 'End of life (C1–C4)'). In both cases the material is treated and shredded (C3). The material loss in this process is 3%.

D
Module D includes reuse, recovery and/or recycling potential. These are reported as net flows and benefits. This affects the the resulting ecological benefits from the thermal utilization of the wooden pallet an plastic packaging (see Chapter 4, "Reuse, recovery and recycling potential (D), relevant scenario information").

3.3 Estimates and assumptions
The electricity mix used in Module A3 represents the average national electricity mix in France, including main producers and self-producers as well as electricity imports. The most important technologies for combustion, flue gas cleaning and power generation are taken into account according to the national situation. Diesel-powered trucks of EURO Class 6 are accepted for transport. They have a gross load of 28 - 32 tonnes (uniformly selected payload value: 22 t) and the route share consists of 56% motorway, 28% intercity road and 16% city traffic. The mass utilization of trucks is assumed to be 61%. A container ship with a capacity of 200,000 dwt is accepted for transport on water. The sulfur content of the fuel is 2.5%.
Due to a data gap for wooden pallets in the current background database, an older data set (EU-28, Wooden Pallets (EURO, 40% moisture), reference year 2018, valid until 2021) was used to estimate the pallet. The palett is suitable for multiple use and has been allocated proportionately to the declared product.

3.4 Cut-off criteria
All known inputs and outputs related with the products were taken into account. Required production plants, machines and infrastructure were not considered.

3.5 Background data
The life cycle assessment model is created using the 'LCA for Experts' software system from Sphera Solutions GmbH. The database version 10.7.0.183 – CUP2023.2 is used. The database provides the life cycle inventory data for raw and auxiliary materials as well as transport processes, which are obtained from the background system

3.6 Data quality

When collecting data for the foreground system, it was ensured that the mass balance for the processes within the system boundary was closed. Therefore, the completeness of the foreground system is rated as high. The data provided to the foreground system has been measured or calculated. Therefore, their accuracy is considered to be high. The completeness and accuracy of the background data, all of which come from database version 10.7.0.183 - CUP2023.2, are documented in the respective data sets. Where possible, region-specific data was used to model the foreground and background systems. If a region-specific data set was not available, an alternative data set from a country/area was used, which can be considered as representative as possible due to the high technological similarities. Input and output flows of all mass and energy flows as well as the associated processes and data sets are transparently documented and disclosed. Based on this information, it is possible to reproduce the results of this study provided if the methodology is followed and the same data sets are used.

3.7 Period under review

The primary data of the foreground system was recorded by MEA Group GmbH. The collection of data in the plant refers to the year 2022. The data sets from the background database are representative for the period under consideration.

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

The life cycle under consideration and the associated production processes do not result in any further by-products or co-products. Therefore, no allocations had to be made. In order to make advantages and burdens visible outside the product system, a system space expansion is carried out within Module D. This concerns the thermal utilization of the wooden pallet as well as the presentation of ecological advantages by avoiding primary material (gravel) at the end of life.

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. The life cycle assessment model is created using the 'LCA for Experts' software system from Sphera Solutions GmbH. The database version 10.7.0.183 – CUP2023.2 is used.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

Due to the material composition, the product itself has no biogenic carbon content at the factory gate. The pallet as part of the packaging, however, contains biogenic carbon.

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	0.197	kg C

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

The following technical scenario information is required for the declared modules:

Transport from the gate to the site (A4)

The products from SMC are sold throughout Europe and the representation of an average transport distance leads to results that are of little significance. The product is therefore assumed to be transported by road and over a distance of 100 km, thus enabling customer and project-specific scaling of the A4 module. The values in the following table refer to the declared unit.

Name	Value	Unit
Litres of fuel	0.0026	l/100km
Transport distance	100	km
Capacity utilisation (including empty runs)	61	%
Gross density of products transported	1810	kg/m^3

Assembly (A5)

The product is separated from the packaging which is transported for thermal recycling.

Name	Value	Unit
For thermal utilization	0.065	kg
Exportet electrical energy	0.171	MJ
Exportet thermal energy	0.34	MJ

The reference service life is designed for over 50 years. However, this also depends on the useful life of the entire structure or the entire traffic area. Due to the material composition of the product, no aging processes are known.

End of life (C1-C4)

An excavatoris used for the dismantling of module C1. Module C2 maps the transport to waste treatment (Module C3). The average transport distance is 100 km. Module C3 maps waste treatment for reuse, recovery and/or recycling.
The SMC product, at the end of its life is landfilled as conservative scenario. For this, the material is pretreated and broken. The material loss in this process is 3%.

Name	Value	Unit
Litres of fuel (C1)	0,00017	l
Litres of fuel (C2)	0.0025	l/100km
Transport distance (C2)	100	km
Loss (C3)	0,03	kg
Landfilling (C4)	0.97	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

The ecological benefits resulting from the disposal of the packaging are also declared in Module D. Thermal energy (0.34 MJ) is generated when packaging is burned. This thermal energy is represented with the ecological advantage of burning natural gas. Additionally, electricity (0.171MJ) is generated. A corresponding ecological benefit of the European electricity mix is awarded for this.

Name	Value	Unit
Ecological benefit for generated thermal Energy	0.34	MJ
Ecological benefit for generated electrical Energy	0.171	MJ

5. LCA: Results

The results of the impact assessment of selected environmental impacts, the use of resources as well as waste and other output flows for 1 kg of SMC product are shown below. This is manufactured in a french factory in Saint-Dié-des-Vosges. The average bulk density is 1810 kg/m³. All declared life cycle stages are marked with an 'X' in Table 1, all undeclared ones are marked with 'ND' (modules B3, B4 and B5 are not relevant and therefore marked with 'MNR').

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	X	X	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 kg Product made from SMC

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	1.13E+00	9.58E-03	1.19E-01	9.32E-05	9E-03	2.56E-03	1.39E-02	-3.83E-02
GWP-fossil	kg CO_2 eq	1.29E+00	9.16E-03	4.25E-02	9.25E-05	8.61E-03	2.55E-03	1.44E-02	-3.81E-02
GWP-biogenic	kg CO_2 eq	-1.61E-01	4.17E-04	7.67E-02	6.7E-07	3.92E-04	-2.61E-06	-4.94E-04	-1.68E-04
GWP-luluc	kg CO_2 eq	8.02E-04	5.83E-07	1.21E-06	3.83E-08	5.48E-07	1.25E-05	4.53E-05	-2.42E-06
ODP	kg CFC11 eq	4.98E-12	1.1E-15	2.16E-14	7.19E-17	1.03E-15	7.79E-15	3.71E-14	-2.83E-13
AP	mol H^+ eq	5.35E-03	7.84E-06	2.01E-05	3.06E-06	7.37E-06	1.3E-05	1.03E-04	-4.63E-05
EP-freshwater	kg P eq	1.61E-05	2.24E-09	5.82E-09	1.47E-10	2.11E-09	6.74E-09	2.93E-08	-5.86E-08
EP-marine	kg N eq	1.09E-03	2.26E-06	5.34E-06	1.45E-06	2.13E-06	6.06E-06	2.67E-05	-1.37E-05
EP-terrestrial	mol N eq	1.24E-02	2.62E-05	8.66E-05	1.59E-05	2.47E-05	6.68E-05	2.94E-04	-1.47E-04
POCP	kg NMVOC eq	3.2E-03	7.36E-06	1.48E-05	4.1E-06	6.92E-06	1.63E-05	8.06E-05	-3.83E-05
ADPE	kg Sb eq	6.82E-06	1.15E-10	1.87E-10	7.54E-12	1.08E-10	2.77E-09	6.74E-10	-2.61E-09
ADPF	MJ	3.3E+01	1.33E-01	4.83E-02	8.75E-03	1.25E-01	4.98E-02	1.94E-01	-7E-01
WDP	m^3 world eq deprived	1.27E-01	2.23E-05	1.24E-02	1.46E-06	2.1E-05	4.52E-04	1.6E-03	-3.43E-03

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 kg Product made from SMC

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	4.94E+00	8.6E-04	8.49E-01	5.65E-05	8.08E-04	5.48E-03	3.16E-02	-1.93E-01
PERM	MJ	8.37E-01	0	-8.37E-01	0	0	0	0	0
PERT	MJ	5.77E+00	8.6E-04	1.17E-02	5.65E-05	8.08E-04	5.48E-03	3.16E-02	-1.93E-01
PENRE	MJ	3.3E+01	1.34E-01	4.83E-02	8.78E-03	1.26E-01	4.98E-02	1.94E-01	-7E-01
PENRM	MJ	9.55E+00	0	-7.58E-01	0	0	0	0	0
PENRT	MJ	3.3E+01	1.34E-01	4.83E-02	8.78E-03	1.26E-01	4.98E-02	1.94E-01	-7E-01
SM	kg	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	7.39E-03	1E-06	2.93E-04	6.57E-08	9.4E-07	1.32E-05	4.9E-05	-1.57E-04

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 = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 kg Product made from SMC

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	1.07E-07	2.46E-13	6.03E-14	1.62E-14	2.31E-13	-5.33E-13	4.23E-12	-4.16E-11
NHWD	kg	6.53E-02	1.33E-05	5.6E-03	8.75E-07	1.25E-05	1.4E-05	9.71E-01	-3.38E-04
RWD	kg	1.36E-03	2.23E-07	1.82E-06	1.46E-08	2.09E-07	4.08E-07	2.21E-06	-5.13E-05
CRU	kg	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0

MER	kg	0	0	0	0	0	0	0	0
EEE	MJ	0	0	1.71E-01	0	0	0	0	0
EET	MJ	0	0	3.4E-01	0	0	0	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 kg Product made from SMC

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	5.08E-08	5.72E-11	1.68E-10	3.47E-11	5.38E-11	2.51E-10	1.27E-09	-3.93E-10
IR	kBq U235 eq	2.99E-01	3.29E-05	2.53E-04	2.16E-06	3.09E-05	4.29E-05	2.56E-04	-8.54E-03
ETP-fw	CTUe	1.22E+01	9.59E-02	2.16E-02	6.3E-03	9.02E-02	3.58E-02	1.05E-01	-9.3E-02
HTP-c	CTUh	5.61E-10	1.76E-12	1.57E-12	1.16E-13	1.66E-12	7.83E-13	1.63E-11	-7.63E-12
HTP-nc	CTUh	4.79E-08	5.68E-11	9.68E-11	3.74E-12	5.34E-11	2.73E-11	1.72E-09	-1.92E-10
SQP	SQP	2.4E+01	8.33E-04	1.22E-02	5.47E-05	7.82E-04	1.26E-02	4.71E-02	-1.27E-01

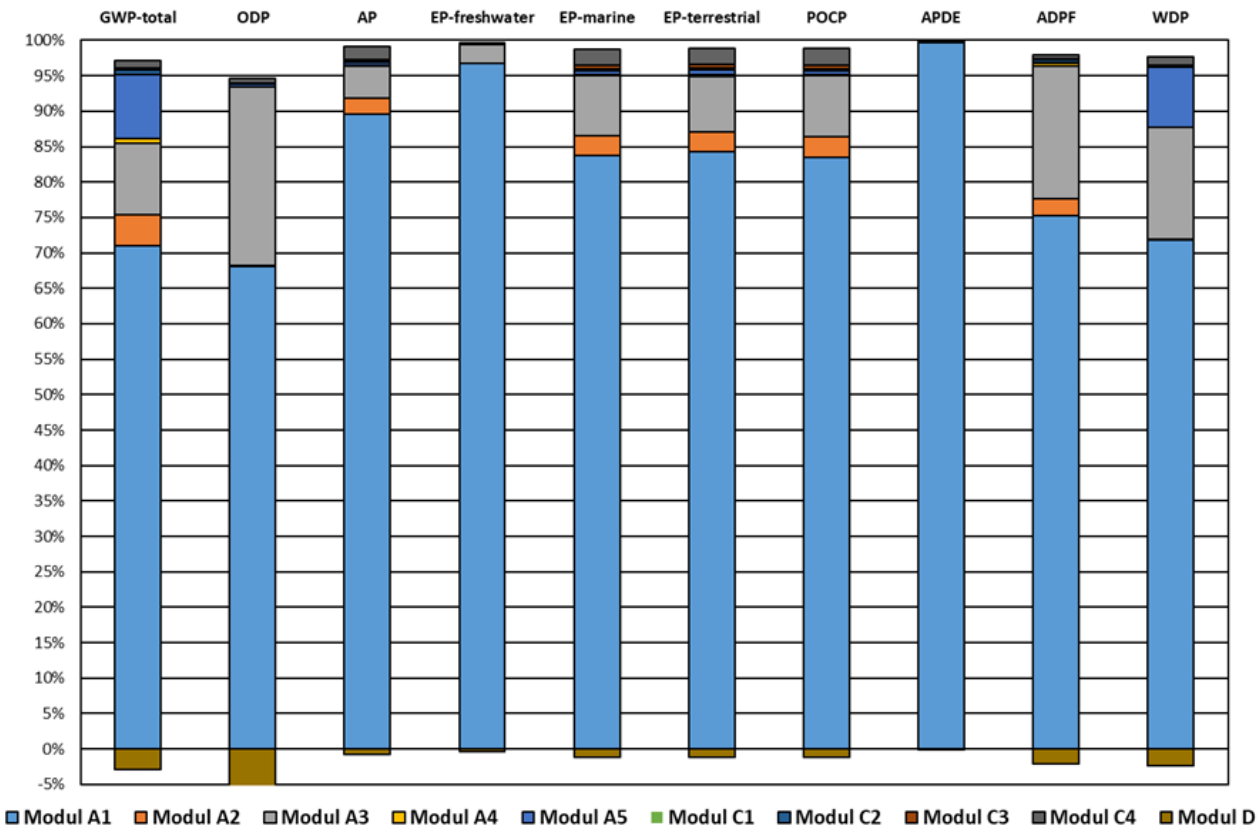
PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

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 significant influence of the life cycle Module A1 on the environmental impact categories presented here can be clearly seen. The provision of raw materials or intermediate products (especially unsaturated polyester resin) for the SMC products is the most important in Module A1 and is responsible for well over 70% of the potential environmental impacts. The transport of raw materials (A2, A4, C2) has a negligible impact due to the relatively short distances. The use of electrical and thermal energy in the production of the product (A3) has a fairly important influence. The ecological benefits (D) have little influence.



7. Requisite evidence

Classification report on fire behavior according to *EN 13501-1 :2007+A1 :2009* is currently not available.

7.1 VOC emissions

The declared products are not used indoors. An AgBB overview of results is therefore not necessary.

8. References

Standards

EN 1433

DIN EN 1433:2002 + AC:2004 + A1:2005 Drainage channels for vehicular and pedestrian areas - Classification, design and testing requirements, marking and evaluation of conformity; German version EN 1433:2002 + AC:2004 + A1:2005

EN 13501

DIN EN 13501-1:2019-05 Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests; German version EN 13501-1:2018

EN 15804

DIN EN 15804:2022-03 Sustainability of construction works - Environmental product
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