ENVIRONMENTAL PRODUCT DECLARATION

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

Owner of the Declaration	Armacell International S.A.
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
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Issue date	26/06/2026
Valid to	25/06/2031

Arma-Chek Wrap

Armacell International S.A

Institut Bauen und Umwelt e.V.

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ECO PLATFORM EPD VERIFIED



1. General Information

Armacell International S.A

Programme holder

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

Declaration number

EPD-ARM-20260305-IBA1-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

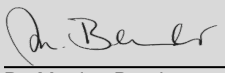
26/06/2026

Valid to

25/06/2031



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Arma-Chek Wrap

Owner of the declaration

Armacell International S.A.
Westside Village, rue Pafebruch 89B
8308 Capellen - GD of Luxembourg
Luxembourg

Declared product / declared unit

1m² of Arma-Check Wrap

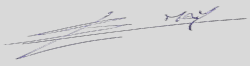
Scope:

Scope:
This document applies to Arma-Chek Wrap. For the preparation of the Life Cycle Assessment, the production quantities of the company manufactory in Leini, Italy, for the year 2024 were surveyed.
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



Sr Lucas Berman,
(Independent verifier)

armacell

2. Product

2.1 Product description/Product definition

Arma-Chek Wrap is an insulation covering material that offers protection against UV- and mechanical impacts. It is suitable for use in various applications, including HVAC, industrial piping, and refrigeration systems. It features a self-welding capability that offers a tight and seamless finish.

The product is manufactured in Leini, Italy, and the majority of the base materials originate from Italy as well. After production and packaging in Leini and Biella, Arma-Chek Wrap is transported via truck to Münster, where it is stored in the warehouse until it is sold to the end-consumer. In Biella is a subcontractor company located, where the cutting process of the mother rolls of Arma-Chek Wrap to the final lengths and widths takes place.

Arma-Chek Wrap is free of halogens, silicone and solvents. At the end of the products' life, it is being thermally treated. The packaging materials are either being recycled or thermally treated as well.

For the use and application of the product, the respective national provisions at the place of use apply, in Germany for example, the building codes of the federal states and the corresponding national specifications.

2.2 Application

The areas of application of Arma-Chek Wrap include: Protection of pipes, ducts, valves and vessels of refrigeration as well as air conditioning equipment, clean room environments, food industries, etc.

2.3 Technical Data

The relevant technical data is listed in the table below:

Constructional data

Name	Value	Unit
Waterproof nach EN 1928 (Dachbahnen)	not applicable	-
Water vapour transmission rate (sD value) according to DIN EN 1931	>1500	m
Resistance to UV according to ISO 4892	Very high	
Tensile strain nach EN 12311-2 (Dachbahnen)	not applicable	%
Maximum service temperature according to EN14706	100	°C
Storage	+5 - +40	°C
Peel resistance of the seam joint (Dachbahnen)	not applicable	N/50mm
Shear resistance of the seam joint (Dachbahnen)	not applicable	N/50mm
Seam strength nach EN 12317-2 (Dachbahnen)	not applicable	-
Tear propagation resistance nach EN 12310-2 (Dachbahnen)	not applicable	N
Artificial ageing nach EN 1297 (Dachbahnen)	not applicable	-
Dimensional stability nach EN 1107-2 (Dachbahnen)	not applicable	%
Folding in the cold nach EN 495-5 (Dachbahnen)	not applicable	°C
Bitumen compatibility nach EN 1548 (Dachbahnen)	not applicable	-
Resistance to root penetration (for green roofs) nach EN 13948 bzw. FLL (Dachbahnen)	not applicable	-
Ozone resistance (for EPDM/IIR) nach EN 1844 (Dachbahnen)	not applicable	-
Waterproof nach EN 1928 (Dichtungsbahnen)	not applicable	-
Tensile strain nach EN 12311-2 (Dichtungsbahnen)	not applicable	%
Resistance to impact loads nach EN 12691 (Dichtungsbahnen)	not applicable	mm
Shear resistance of the seam joint nach EN 12317-2 (Dichtungsbahnen)	not applicable	N/50mm
Tear propagation resistance nach EN 12310-2 (Dichtungsbahnen)	not applicable	N

Performance data of the product with respect to its characteristics in accordance with the relevant technical provision (no CE-marking).

2.4 Delivery status

The product is sold in five different widths from 70 to 1050 mm. It is rolled around a plastic core and packaged in carton boxes before being delivered to the customer.

2.5 Base materials/Ancillary materials

Name	Value	Unit
Aluminium hydroxide	43	%
Magnesium hydroxide	28	%
Polyisobutylene	22	%
Hydrocarbon resin	<1	%
Stabilizers	2	%
Color pigment	1	%
Additives	<0,5	%
Polyethylen	3,5	%

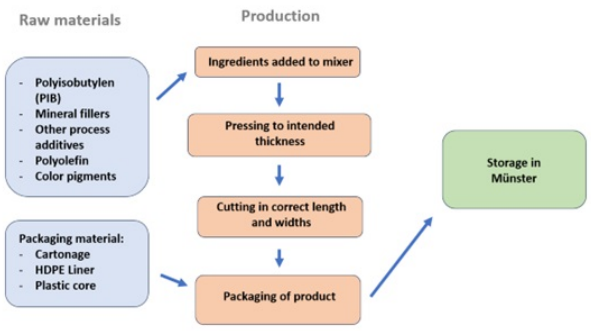
The product Arma-Chek Wrap consists of a number of chemical substances that together form the final product: a flexible insulation tape. The base materials are Polyisobutylen (PIB), mineral fillers, other process additives like Aluminium Hydroxide and Magnesium Hydroxide as well as Polyolefin and colour pigment. The finished tape is rolled onto a plastic core.

Five different dimensions of the tape are available. The colour of the tape is black. The tape is sold in a standard length of 10 meters, the width varies, with widths of 70, 250, 500, 750 or 1050 millimetres.

2.6 Manufacture

The production of Arma-Chek Wrap insulating tape is centred at the Armacell plant in Leini, Italy. The process begins with the precision mixing of raw materials, which are then extruded into a film and processed through a calendar to achieve the specified thickness.
To facilitate handling and prevent self-adhesion, an HDPE liner is applied to the reverse side of the tape.

The material is initially cut into mother rolls before being transported to a subcontracting facility in Biella, Italy, for precision cutting into final dimensions. Following this conversion, the rolls are returned to Leini for final packaging and subsequently transported to the central warehouse in Münster, Germany.
Quality management system in accordance with ISO 9001.



2.7 Environment and health during manufacturing

During all manufacturing steps and in all production facilities production follows national guidelines and regulations.

2.8 Product processing/Installation

Arma-Chek Wrap Insulating Tape is engineered for insulation of HVAC systems, industrial piping, and refrigeration applications. The tape is self-welding, eliminating the need for any additional connecting materials. Installation requires only simple hand tools, such as scissors or a utility knife, allowing the entire process to be completed manually without the use of specialized equipment.

2.9 Packaging

The product is wound onto a plastic core and packaged in cardboard boxes.

2.10 Condition of use

When the product is used in its intended purpose, no change in the material composition occurs during use, except in the case of extraordinary effects.

2.11 Environment and health during use

There are no particular aspects of material composition during use. The product does not release water-soluble substances that can be released into the environment.
No energy is required to use Arma-Chek Wrap.

2.12 Reference service life

Arma-Chek Wrap is a durable product. The results show that their useful life can be 30 years if used and installed properly. The thermal insulation performance is maintained almost without restriction over the entire service life. Impairments of the thermal insulation performance are only caused by extraordinary effects and damage during the construction phase.

The value of 30 years of Reference Service Life is taken out of the "BBSR-Nutzungsdauertabelle" (last revision 04.11.2025). Use the following link to get access to the document: https://www.nachhaltigesbauen.de/austausch/nutzungsdauern-von-bauteilen/

2.13 Extraordinary effects

Fire

Building material class according to EN 135011 is E.

Fire protection

Name	Value
Building material class	E

Water

The insulation covering material is designed in such a way that the penetration of water vapour is permanently limited to a minimum.

Mechanical destruction

The dismantling of the insulating tape is carried out manually.

2.14 Re-use phase

After proper dismantling, the product can be thermally treated.

2.15 Disposal

The materials must be disposed of in accordance to local regulations, regulated by the European Waste Catalogue: waste code 07 02 13 (plastic waste).

2.16 Further information

Further information and detailed specifications of Arma-Chek Wrap products can be found on the manufacturer's website: www.armacell.com.

3. LCA: Calculation rules

3.1 Declared Unit

The declared unit is 1 m² of Arma-Chek Wrap and refers to the production volume of the year 2024.

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	m^2
Grammage	1.7801	kg/m^2
Layer thickness	0.0011	m
Raw densitiy	1.618,26	kg/m^3

3.2 System boundary

The data collected refers to the annual production of 2024.
Type of EPD: Cradle to gate with modules C1-C4 and module D (A1-A5+C+D).

A1–A3: Production phase
The modules contain the production of all the raw materials, pre-products and packaging materials, the transport of these materials to the production facility, the production of Arma-Chek Wrap and the energy that is needed during production, the disposal and treatment (until the end of the waste phase) of any outputs of the production process, the transport of the intermediate packaging to thermal treatment and recycling facility and internal tranpsorts.

For the production site in Leini, Italy, supplier-specific electricity data were used. The electricity supply consists of a mix of conventional and renewable energy sources. In addition, the production facility in Leini generates renewable electricity via on-site photovoltaic (PV) installations. However, as no verified documentation is available regarding the exact electricity generation volumes or the quantities fed into the public grid, this energy is conservatively modelled using the Italian national electricity mix. Likewise, the share of renewable electricity indicated by the electricity supplier is modelled using the national electricity mix, as no Guarantee of Origin is available.

For the cutting process at the subcontractor's facility, no specific primary data on energy consumption were available. Therefore, the electricity demand was estimated based on the technical specifications of a comparable cutting machine and the corresponding production volumes. For the modelling of this electricity consumption, the Italian national electricity mix was also applied.

A4: This module accounts for the transport of the finished product and the used packaging materials to the construction site.

A5: This module contains the installation of the product Arma-Chek Wrap onsite:

- The installation is carried out manually and therefore requires no energy input.
- The module includes the disposal scenario 'recycling of cardboard' for 100 % of the packaging material.
- The module also includes the disposal scenario 'thermal treatment' for 100 % of HDPE-Liner that is stuck to the back of the Arma-Chek Wrap insulating tape as well as the plastic cores that Arma-Chek Wrap is wrapped around.

B1–B7: Use phase
When used in its intended way there are no environmental burdens expected to occur in these modules.

C1–C4: Disposal
These modules account for the disposal of the product Arma-Chek Wrap:

- C1 (Demolition) includes dismantling, which is carried out manually and therefore requires no energy input.
- C2 considers the transport to the waste treatment plants.
- C3 considers the treatment of the removed materials by thermal waste treatment in a plant with R1 greater than 0,6.
- C4 accounts for the landfilling of the product.

D: This module covers the advantages and burdens attributed to the subsequent product system.
These are the generation of electrical and thermal energy resulting from the incineration of plastic product components in module A5 and C3.

3.3 Estimates and assumptions

A1-A3:
Transport to waste treatment: The transport of outputs for waste treatment is accounted for based on the quantities of waste generated and an assumed average distance between the plant and the respective waste treatment facility. An average distance of 25 km is assumed for recycling facilities and 330 km for thermal treatment facilities.

Packaging waste:
Packaging materials of incoming raw materials are only modelled with transport to waste treatment, representing a conservative assumption.

A4: For transport from the factory to the construction site, distances at home and abroad are weighted according to turnover. The average transport distance is estimated on the basis of order processing and is 991,64 km.

A5:
The installation of Arma-Chek Wrap is carried out manually, which means no energy input is required. The cardboard used as packaging material is recycled and the plastic core as well as the HDPE liner are thermally treated. The average distance between the construction site and the recycling and incineration facility is assumed to be 350 km.

C1:
The dismantling of the insulating tape is carried out manually, just like the installation and therefore requires no energy input.

C2:
Assuming that the transport route from the construction site to the thermal treatment facility is the same as in Module A5, a distance of 350 km is applied. Due to the higher availability of disposal facilities, an average transport distance of 50 km is assumed for transport from the construction site to the landfill.

C3 and C4:
It is assumed that separation and collection at the construction site cannot be carried out with the same quality as under factory conditions (e.g. due to damage during dismantling and less controlled waste handling). Therefore, a conservative assumption is applied:

- 97 % of Arma-Check Wrap are thermally (R1 > 0,6) treated
- 3 % are disposed of in a landfill

D: The useful energy produced is declared as exported energy in A5 and C3, and the advantages and burdens associated with

the useful energy produced in module D.

According to the dataset used for the incineration of the polyethylene components in A5 ' Treatment of waste polyethylene, municipal incineration [GLO]', 4,98 MJ/kg of electrical energy and 9,62 MJ/kg of thermal energy are recovered.

According to the dataset used for the incineration of the plastic components in C3 'Treatment of waste plastic, mixture, municipal incineration [RoW]', 3,92 MJ/kg of electrical energy and 7,66 MJ/kg of thermal energy are recovered.

3.4 Cut-off criteria

The maximum cut-off applied for all excluded inputs and outputs in this EPD is 5 % of the total energy and mass per module, in accordance with EN 15804 + A2 and PCR Part A.

For this LCA, all available inputs and outputs, including those below the 1 % threshold, are considered, except for site-specific buildings, machinery, and production infrastructure at the manufacturing plant.

3.5 Background data

The LCA model was created using SimaPro software (version 10.2). The 'EN 15804+A2 Method' was used to calculate the core indicators (except 'Climate Change – biogenic') for the environmental impacts and the additional environmental indicators. This method takes into account the characterisation factors of the Ecological Footprint Method, version 3.1. The EcoInvent database (version 3.11) provides the LCA data from the underlying system for various raw and process materials. The system models of the Ecoinvent datasets are based on 'cut-off by classification' allocation.

3.6 Data quality

The foreground data collected by the manufacturer is based on production volumes and sales volumes in 2024 and extrapolations of measurements for specific machines and equipment at the production site.

Temporal representativeness:
The data on which the EPD is based originate from the 2024 financial year and include all inputs and outputs that occurred during that year. There are no deviations from the reporting year 2024 in the collection of the specific data.

Geographical representativeness:
The production of the product Arma-Chek Wrap takes place in Italy. For the modelling of product use and end-of-life treatment, Italian datasets were primarily applied. For module D, German datasets were used because the recycling takes place in Germany. Where Italy-specific data was not available, European, global, or Rest-of-World datasets were used.

Technological representativeness:
The production of the insulation takes place in company-owned extrusion lines and reflects the current state of the art. Since the environmental performance of the product is calculated using site-specific production volumes, the results also provide a representative picture of site-specific production technologies.

Most of the necessary Life Cycle Inventories (LCI) of the basic materials are available in the EcoInvent database. LCA data not available in EcoInvent is approximated using LCIs of similar materials or estimated by combining available LCIs.

The Ecoinvent background data used correspond to the most recent datasets available. detailed assessment of the data quality according to EN 15804 (Annex E) was carried out and presented in the associated project report. Geographical representativeness is rated as 'good' on average, while temporal representativeness and technological representativeness are rated as 'very good' on average.

The data are also plausible, as deviations from comparable results (other manufacturer) are
consistent and understandable.

3.7 Period under review

The production data refers to the year 2024.

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 production process does not generate any byproducts. Therefore, the life cycle assessment (LCA) model underlying the LCA does not allocate resources and environmental burdens to byproducts.

A1–A3 Transports:
The tonne kilometres (tkm) of each product/raw material transported to the plant are calculated based on the input quantities and the distance between the manufacturer/supplier and the plant.

A1-A3 Energy:
In addition to Arma-Chek Wrap, other products are also manufactured at the Leini facility. The allocation of electricity and thermal energy is performed based on the production volumes within the plant.

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 underlying database used is EcoInvent.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

The information on the biogenic carbon content refers to the declared unit of 1 m² of Arma-Chek Wrap.

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	0.029	kg C
Biogenic carbon content in accompanying packaging	0.0142	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 and optional for non-declared modules. Modules for which no information is declared can be deleted; additional information can also be listed if necessary.

The following technical information is a basis for the declared modules or can be used for developing specific scenarios in the context of a building assessment if modules are not declared (MND).

A5 is not declared including the disposal of the packaging material on the construction site, the amounts of packaging materials included in the LCA calculations must be declared as technical scenario information for Module A5.

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	18	l/100km
Transport distance	991,64	km
Capacity utilisation (including empty runs)	36,7	%
Gross density of products transported	1618,26	kg/m^3

Installation into the building (A5)

Name	Value	Unit
Output substances as a result of waste treatment on the construction site HDPE Liner	0,062	kg/m²
Output substances as a result of waste treatment on the construction site Plastic core	0,023	kg/m²
Output substances as a result of waste treatment on the construction site Carton packaging	0,034	kg/m²

Reference service life

Name	Value	Unit
Reference service life (according to ISO 15686-1, -2, -7 and -8)	30	a

End of life (C1-C4)

Name	Value	Unit
Waste for thermal treatment (C3)	1,73	kg/m²
Waste for landfill (C4)	0,05	kg/m²

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

Name	Value	Unit
Thermal recycling (C3)	1,73	kg/m²
Thermal recycling (A5)	0,09	kg/m²

5. LCA: Results

The results of the indicators of the impact assessment, resource use, waste and other output streams related to one m² of the product Arma-Chek Wrap are presented below. To calculate the core indicators of the environmental impact as well as the additional environmental indicators, the 'EN 15804+A2 Method' of the Simapro software was used. This method takes into account the characterisation factors of the Ecological Footprint Method, version 3.1.

The results of the biogenic global warming potential (GWP-biogenic) only take into account the greenhouse gas emissions that are stored in the raw and packaging materials made from renewable raw materials in the form of carbon in the biomass (negative value in A1-A3) and are released back into the environment when the product is installed in the course of End-of-Life and packaging disposal (positive value in A5 and C3/C4). The very low biogenic greenhouse gas emissions of the energy supply processes are neglected in the present case.

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:

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	3.74	0.352	0.315	0	0.113	4.21	0.00811	-2.53
GWP-fossil	kg CO_2 eq	3.85	0.352	0.263	0	0.113	4.11	0.00492	-2.52
GWP-biogenic	kg CO_2 eq	-0.158	0	0.0519	0	0	0.103	0.00319	0
GWP-luluc	kg CO_2 eq	0.0477	0.000118	7.22E-07	0	0.0000381	0.000032	3.58E-07	-0.00172
ODP	kg CFC11 eq	1.02E-07	7.67E-09	3.53E-11	0	2.47E-09	1.3E-09	1.48E-11	-9.25E-08
AP	mol H^+ eq	0.015	0.000755	0.0000334	0	0.000243	0.000938	4.24E-06	-0.00346
EP-freshwater	kg P eq	0.0000946	2.62E-06	3.07E-08	0	8.43E-07	1.16E-06	6.73E-09	-0.00015
EP-marine	kg N eq	0.00275	0.000177	0.0000157	0	0.0000572	0.000442	3.42E-06	-0.000938
EP-terrestrial	mol N eq	0.0282	0.00196	0.000172	0	0.000633	0.00455	0.0000173	-0.0103
POCP	kg NMVOC eq	0.0155	0.0012	0.0000425	0	0.000386	0.00114	7.11E-06	-0.00368
ADPE	kg Sb eq	0.000027	1.21E-06	5.25E-09	0	3.89E-07	1.99E-07	1.08E-09	-2.14E-06
ADPF	MJ	72.2	4.99	0.0252	0	1.61	0.773	0.013	-41.5
WDP	m^3 world eq deprived	1.39	0.0196	0.00145	0	0.00633	0.133	-0.0085	-0.0634

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:

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2.79	0.0797	0.436	0	0.0257	1.22	0.0371	-2.95
PERM	MJ	1.67	0	-0.436	0	0	-1.19	-0.0369	0
PERT	MJ	4.45	0.0797	0.00058	0	0.0257	0.0302	0.000173	-2.95
PENRE	MJ	56.3	4.99	3.64	0	1.61	12.7	0.383	-41.5
PENRM	MJ	15.9	0	-3.61	0	0	-12	-0.37	0
PENRT	MJ	72.2	4.99	0.0252	0	1.61	0.773	0.013	-41.5
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	1.35	0.0196	0.00144	0	0.00633	0.132	-0.0085	-0.0626

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:

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	0.00072	0.0000341	3.98E-07	0	0.000011	9.58E-06	9.21E-08	-0.00018

NHWD	kg	0.497	0.244	0.00344	0	0.0785	0.0791	0.0535	-0.0595
RWD	kg	0.000118	2.71E-06	1.24E-08	0	8.73E-07	5.97E-07	4.83E-09	-0.000114
CRU	kg	0	0	0	0	0	0	0	0
MFR	kg	0	0	0.0339	0	0	0	0	0
MER	kg	0	0	0.085	0	0	1.73	0	0
EEE	MJ	0	0	0.423	0	0	6.79	0	0
EET	MJ	0	0	0.817	0	0	13.2	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:

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	2.32E-07	2.62E-08	1.47E-10	0	8.45E-09	4.87E-09	9.36E-11	-1.29E-08
IR	kBq U235 eq	0.0831	0.00218	0.0000105	0	0.000704	0.000509	4.22E-06	-0.0512
ETP-fw	CTUe	19.7	0.67	0.0496	0	0.216	8.08	0.179	-3.16
HTP-c	CTUh	1.96E-09	5.87E-11	7.69E-12	0	1.89E-11	3.5E-10	3.29E-13	-2.23E-10
HTP-nc	CTUh	5.3E-08	3.14E-09	3.73E-10	0	1.01E-09	1.23E-08	5.72E-11	-6.69E-09
SQP	SQP	18	3	0.00649	0	0.967	0.222	0.0308	-2.31

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.

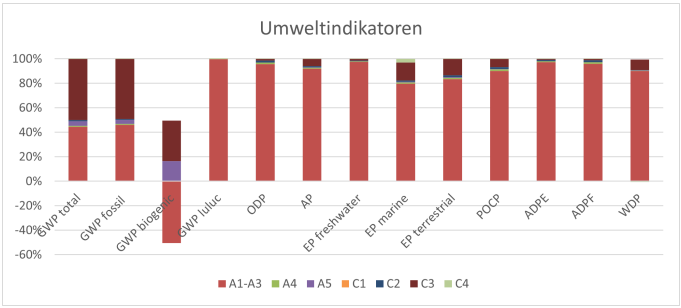
This EPD was created using a software tool.

6. LCA: Interpretation

For the core environmental impact indicators, it becomes evident that Modules A1–A3 account for at least 86 % of the impacts across all categories. Module C3 shows a relevant contribution for the indicator Climate Change fossil (49 %).

The negative value of the indicator Climate Change – biogenic in Modules A1–A3 is attributable to the cardboard packaging material and the stearin acid made from beef tallow. This material contains biogenic carbon in the form of carbon dioxide absorbed during plant growth (i.e., a negative greenhouse gas potential). In Module A5, the stored carbon dioxide is reported as a positive value, since the materials leave the system at this stage. Over the entire life cycle of the product, this results in a balanced CO2 balance for the biogenic carbon sequestered in the product packaging.

For the additional environmental impact indicators, Modules A1–A3 account for almost 86 % in each indicator. C3 has an average impact of 11 %. All other modules therefore play a subordinate role.



The analysis of the manufacturing phase of Arma-Chek Wrap identifies the supply of raw materials as a key driver with a share of about 68 % in all environmental indicators. Among the individual raw materials, the synthetic rubber is responsible for an average of 31 % of the environmental impact in all environmental indicators, followed by aluminium hydroxide with 13 % and fatty acids with 10 %. Other relevant shares are the sum of transports (about 8 %) as well as the sum of packaging materials (about 7 %) and energy supply (about 11 %). For the indicator Climate change – LULUC the most relevant source is fatty acid, with a share of 96 %.

7. Requisite evidence

8. References

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