ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A1*

Owner of the Declaration	Armacell International S.A.
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ARM-20210263-IAA1-EN
Issue date	27.01.2022
Valid to	26.01.2027

ArmaPET® Eco50
Armacell Benelux SCS

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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1. General Information

Armacell Benelux SCS	ArmaPET® Eco50
Programme holder IBU – Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany	**Owner of the declaration** **Armacell International S.A.** Westside Village 89B rue Pafebruch L-8308 Capellen GD of Luxembourg
Declaration number EPD-ARM-20210263-IAA1-EN	**Declared product / declared unit** The declared product is ArmaPET® Eco50 . The declared unit relates to 1 m³ of product, with an average density of 50 kg/m³. The packaging is also included in the calculation. The declared unit is given in [m³].
This declaration is based on the product category rules: Insulating materials made of foam plastics, 01.2019 (PCR checked and approved by the SVR)	**Scope:** This document relates to ArmaPET® Eco50. For the creation of the life cycle assessment, specific data was collected from the manufacturing plant in Thimister-Clermont in Belgium of the Armacell Group, which corresponds to the annual average and is based on data from 2020 (see 3.8 allocation). The owner of the declaration is liable for the information and evidence on which it is based; the IBU accepts no liability for manufacturer information, life cycle assessment data and evidence.
Issue date 27.01.2022	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+A1*. In the following, the standard will be simplified as *EN 15804*.
Valid to 26.01.2027	**Verification** The standard *EN 15804* serves as the core PCR Independent verification of the declaration and data according to *ISO 14025:2010* ☐ internally ☒ externally
Dipl. Ing. Hans Peters (chairman of Institut Bauen und Umwelt e.V.)	Matthias Schulz (Independent verifier)
Dr. Alexander Röder (Managing Director Institut Bauen und Umwelt e.V.))	

2. Product

2.1 Product description/Product definition

ArmaPET® Eco50 is a low-density polyethylene terephthalate (PET) foam, based on 100% recycled plastic bottles. Its long-term stability of the insulation properties and the low thermal conductivity secure lifetime insulation performance. Excellent water resistance and the closed-cell structure of the material ensure stable thermal conductivity even after many years of operation. These features also prevent moisture penetration, mildew and rot and therefore offer long-term corrosion protection and minimal maintenance requirements.
Additionally, the material can be thermoformed into curved shapes, welded in pre-fabrication or on site, and is versatile for use in almost any type of finishing options. Its thermoplastic nature also allows for full recyclability of the material after the use phase.

Thanks to Armacell's patented rPET technology, ArmaPET® Eco50 is based on 100% recycled PET and is manufactured according to an energy and resource optimised production process: with the re-use of waste material and no use of ozone-depleting hydrofluorocarbons (HFC) or chlorofluorcocarbons (CFC) blowing agents.

For the placing of the product on the market in the European Union/European Free Trade Association /EU/EFTA) (with the exception of Switzerland) the Regulation (EU) No. 305/2011 (CPR) applies. The product needs a declaration of performance taking into

consideration the European Assessment Document (EAD assessment) no. 040179-00-1201, from March 2016, «Factory-made products of extruded, foamed Polyethylene terephthalate (PET) for thermal and/or acoustical insulation» and then further CE-marking. For the application and use the respective national provisions apply.

2.2 Application

ArmaPET® Eco50 offers a solution for the (semi-) structural insulation of building envelopes, roofs, floors and internal partitions, in new building construction and the renovation of older buildings.
Intended use, as specified in EAD (040179-00-1201), is thermal insulation, whether or not exposed to compression loads, to be used for walls (including cellar walls), ceilings (floors), roofs, between rafters and timber work.

2.3 Technical Data

Technical Data
For further technical data consult the product datasheet available on the website. Acoustic properties are not relevant for ArmaPET® Eco50. For fire performance, the product achieves the fire classification Euroclass E according to EN 13501-1.

Name	Value	Unit
Gross density acc. to EN 1602	50	kg/m^3
Compressive strength acc. to EN 826	>150	N/mm^2
Tensile strength acc. to EN 1607	>480	N/mm^2
Tensile strength acc. to EN 826	-	N/mm2
Flexural strength acc. to EN 12089	>780	N/mm^2
Modulus of elasticity acc. to EN 826	-	N/mm^2
Calculation value for thermal conductivity acc. to EN 12667 and EN 13164 Annex C	<0,036	W/(mK)
Water vapour diffusion resistance factor acc. to EN 12086	<2700	-
Moisture content at 23 °C, 80%	<3	M.-%
Sound absorption coefficient (if relevant)	-	%
Thermal conductivity acc. to EN 12667	<0,027	W/(mK)
Dynamic rigidity acc. to DIN EN 29052	-	MN/mm^3
Creep behaviour or permanent compressive strength acc. to DIN EN 1606	<2%	N/mm^2
Water absorption after diffusion acc. to EN 12088	-	Vol.-%
Long term water absorption by diffusion acc. to EN ISO 16535	2,3	Vol.-%
Maximum water absorption acc. to DIN EN 12091	-	Vol.-%
Water absorption by capillarity acc. to DIN EN 15801	-	cm
Short term water absorption by partial immersion ISO 29767	0,09	kg/m2
Short term water absorption by partial immersion EN1609, method A, drainage	0,2	kg/m2
Long term water absorption by partial immersion EN ISO 16535	0,32	kg/m2
Reaction to fire - EN 13501-1	E	-

Product according to the CPR, based on an EAD:
Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to EAD assessment no. 040179-00-1201, from March 2016, «Factory-made products of extruded, foamed Polyethylene terephthalate (PET) for thermal and/or acoustical insulation».

2.4 Delivery status

ArmaPET® Eco50 is supplied in boards. A flexible thickness range from 20 to 200 mm is available, with standard widths of 1000 or 1220 mm and length options between 500 and 3000 mm.

2.5 Base materials/Ancillary materials

ArmaPET® Eco50 is a low density, closed-cell foam, produced based on 100% recycled PET. Mechanically recycled PET is mixed in a molten state with additives that ensure a stable foaming process. These include nucleating agents, viscosity modifiers, foam stabilisers and a physical blowing agent.

Name	Value	Unit
Recycled PET	94.8	%
Fillers and modifiers	1.2	%
Blowing agent	4.0	%

The nucleating agent determines the foam's cell size distribution. The viscosity modifier ensures sufficient melt strength for foaming by increasing the molecular weight of the PET, broadening its molecular weight distribution and introducing long-chain branches. The physical blowing agent expands the foam to achieve the required density range. Eventually, the additional modifiers and stabilisers support the process stability and help to avoid cells' coalescence.

This product contains substances listed in the candidate list (date: 14.06.2021) exceeding 0.1 percentage by mass: **no**.

This product 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

The ArmaPET® Eco50 foam is manufactured based on mechanically recycled PET, applying the patented technology of Armacell. This method is based on the traditional approach of reprocessing post-consumer PET waste to produce recycled flakes, after separation of the polymer from contaminants. Recycling includes sorting and separating of waste, washing it to remove any dirt and contaminants, and further grinding, crushing and sorting carried out by Armacell's suppliers. The recycled product is compliant with the predefined specification of Armacell and is supplied in the form of flakes and granules.

At Armacell, the flakes are subjected to the additional sorting, mixing and melt reprocessing operations, to reduce the impact of the heterogeneity, contamination, and partial degradation of the recycled PET. This is made in the granulation process. Obtained recycled PET granules are further processed into foam through foaming extrusion, in the presence of halogen-free supercritical fluid used as a physical blowing agent. The patented method of rPET treatment and modification during melt processing allows Armacell to overcome the main disadvantage of mechanical recycling – a decline in the product quality – and to upgrade the quality despite the thermal degradation, photo-oxidation and mechanical stresses.

The extruded foamed PET boards with homogeneous and closed-cell structure are then calibrated, edge cut and surface plain to obtain the final product with the required dimensions and surface planarity.
Most of the foam production scrap is collected, compacted and returned to the process as a regrind. Certain amount of waste is incinerated in a local site, resulting in potential benefits.
A small amount of waste is disposed.

All preliminary products are delivered from Europe. The transport is carried out exclusively by truck. The following flow chart illustrates the information modules on which this is based.

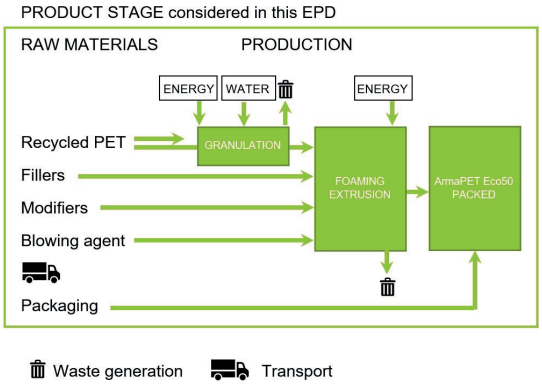


Illustration 1. Representation of the life cycle stages

2.7 Environment and health during manufacturing

All our plants employ environmental monitoring systems, and we exchange ideas and best practices via the internal communications network. We collect key performance indicators on energy use, CO_2 emissions, water consumption and waste management in order to evaluate and continually improve our sustainability performance. 13 of Armacell's plants are environmentally certified acc. to *ISO 14001,* and the energy management systems at our German facilities in Münster and Friesenhofen are certified to *ISO 50001* as well.
Environmental management at Armacell is implemented in line with the “Environment” pillar of the World-Class Armacell Mindset Manufacturing program. This program maintains consistency in standards and sustains the implementation of improved processes. It is based on the systematic identification of losses and non-value-added tasks at Armacell’s multi-technology sites.

2.8 Product processing/Installation

ArmaPET® Eco50 can be used on its own and/or as part of a system, depending on the application. It can be handled and installed without any special precautions for personal and environmental protection. Further advice on handling and installation can be found in the related product literature provided by the manufacturer.

2.9 Packaging

ArmaPET® Eco50 boards are stacked on reusable wooden pallets for transport and storage. These pallets comply with the *ISPM15* regulation. All pallets are protected in a way that prevents damage at the corners of the boards, and plastic wrapping ensures protection from moisture and dirt. The polyethylene- and carton-based packaging elements are recyclable and (actually) recycled in the countries having a return system.

2.10 Condition of use

When the products are used for the purpose for which they are intended, there are no changes in the material composition during use, except in the event of extraordinary impacts (see 2.14).

2.11 Environment and health during use

ArmaPET® Eco50 does not contain any Substances of Very High Concern (SVHC) or any compounds that are persistent, bioaccumulative and/or toxic (PBT). No environmental damage or health risks are to be expected during normal conditions of use.

ArmaPET® Eco50 has been assessed in terms of the emission of regulated dangerous substances from construction products into indoor air (according to EN16516) and the results confirm that no substances are emitted in quantities above the European limits.

2.12 Reference service life

ArmaPET® materials are long-lasting products with a designed lifetime of 25 to 50 years. The service life is practically only restricted by the lifetime in the application. The insulation performance is maintained throughout the entire service life, thanks to the low water absorption, closed-cell cellular structure and the high solubility of a foaming agent in the PET matrix. The insulation performance can only be compromised by extraordinary impacts and damage during construction.

2.13 Extraordinary effects

Fire

According to the European fire classification system, ArmaPET® Eco50 is classified as combustible insulation material of Euroclass E, tested as per EN ISO 11 925-2 by means of the ignitability test. For classes A2 to D, additional classification using the SBI test procedure (Single Burning Item test) in accordance with EN 13823 is required:

Fire protection

Name	Value
Building material class acc. to EN 13501-1	E

Water
ArmaPET® Eco50 is chemically neutral, not water soluble, and if used for the intended purpose does not release any water-soluble substances that might pollute groundwater, rivers or oceans. Water or water vapour has virtually no impact on the thermal conductivity. For water exposure tests please revise the Table of point 2.3 and for water leakages - point 7.2.

Mechanical destruction
ArmaPET® Eco50 is designed for load bearing and non-load bearing (semi-) structural insulation applications and has a compression strength of >150 kPa when used as a standalone material. It can withstand certain mechanical impacts during handling and storage without significant damage.

2.14 Re-use phase
In the non-contaminated form, the product is fully recyclable by a mechanical recycling scheme for PET. It could be shredded into smaller pieces and reprocessed to granules using extrusion, and reused as tertiary recycled pellets in the non-food contact applications (e.g. for foaming processes, fibres spinning, injection moulding, etc.).
In case of severe contamination and problems with separation, the product could be recycled via chemical recycling with bis(2-hydroxyethyl) terephthalate (BHET) or dimethyl terephthalate (DMT) or monomers purified therephthalic acid and mono-ethylene glycol (PTA and MEG, respectively) recovery, depending on the recycling method (glycolysis or hydrolysis).

2.15 Disposal
Dispose of the materials according to local regulations. Regulated by the European Waste Catalogue: Waste code 07 42 0 (other non-hazardous plastic waste).
Note: Please observe Commission Decision 2001/118/EC.

2.16 Further information
Further Information on ArmaPET Eco50 can be found on the manufacturer's website
www.armacell-core-foams.com

3. LCA: Calculation rules

3.1 Declared Unit
The declared product is an ArmaPET® Eco50. The declared unit relates to 1 m³ of product. The packaging with 4,329 kg is also included in the calculation. The following table shows the data of the declared unit.

Declared unit

Name	Value	Unit
Declared unit	1	m^3
Average density	50	kg/m^3
Weight	50	kg

3.2 System boundary
The type of the EPD is cradle to gate. The following information modules are defined as system limits in this study:

A1–A3 Product development:
- A1 – Production of raw materials
- A2 – Transport to the manufacturer
- A3 – Manufacture

This is a manufacturer's declaration. The declaration refers to a specific product from a manufacturer's plant (1a). In order to accurately record the indicators and environmental impact of the declared unit, three information modules are observed. Information modules A1–A3 describe the production of materials, transport to the production facilities and the product production process itself and packaging.

3.3 Estimates and assumptions
The electricity mix and other background data is calculated for the production process on a country-specific basis.
For the rPET-flakes no specific data could be provided by the supplier. In the background databases there is only rPET granulate available. For this reason, the background data for rPET granulate without the impact of the electrical energy of granulation, was used to calculate the rPET flakes in module A1. This assumption is important for the whole calculation of the EPD to avoid a double counting, because in module A3 for this material a specific granulation at Armacell is calculated. From the material input, the blowing agent in the quantity of 1,984 kg results in 0,763 kg residual foaming gas diffusion to air. This value is given by Armacell and is considered the photochemical ozone creation potential (POCP) of this calculation. For the other special raw materials, which don't exist in the database, the chemically closest counterparts have been chosen from *Sphera* database (2020) and used for environmental impact simulation. The quantities of those components have followed the 2020 yearly consumption, recalculated to the declared unit of ArmaPET Eco50. Since the considered transport routes are within the European Union, an EU-28 mix was used for the provision of fuel.

3.4 Cut-off criteria
All information modules of this calculation are recorded in the way, that the requirements of the */EN 15804/* are met. No inputs and output flows are cut- off in this calculation.

3.5 Background data
The following link provides access to the background data base for the *GaBi 10* databases (including *Ecoinvent 3.7.1*) to which this study refers *Sphera.* For this calculation primarily backgrond data from *Sphera* is used.

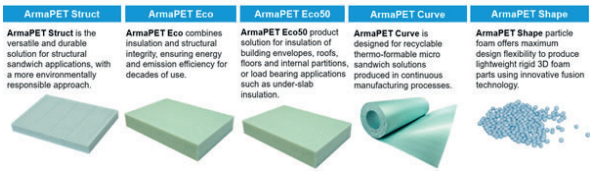
3.6 Data quality
The data quality is considered appropriate. The relevant data sets, which are used tocalculate the raw material acquisition and the production of the declared unit, are current (EU-28: market for polyethylene terephthalate, granulate, amorphous, recycled, Source: /*Ecoinvent 3.7.1*/, Year2020; BE: Electricity grid mix, Source: /*Sphera*/, Year 2017; GLO: Blowing agent [Group NMVOC to air] Source: /*Sphera*/, Year 2020).

3.7 Period under review
The life cycle inventory analysis data provided by the

manufacturer is from 2020 and corresponds to the annual average.

3.8 Allocation

The data presented in this EPD for ArmaPET® Eco50 are collected based on the yearly manufacturing output of the Armacell's plant in Thimister-Clermont/ Belgium. Currently, this is the only location manufacturing Eco50 and in 2020, which is a year of evaluation, the volume of produced Eco50 was quite limited compared to the other manufactured products. In general, the split between all the manufactured items covers:



with a total mass of all the manufactured foams equal to 8.801.404 kg, out of which only 4.204 kg (so 0,048% - in the further sections called allocation factor) accounts for ArmaPET® Eco50.

The data linked to energy and water consumptions are collected collectively at the plant level and are allocated to the Eco50 production based on the 0,048% allocation factor. The energy consumption data are collected separately for the extrusion, granulation and warehousing operations and are allocated to Eco50 production based on the 0,048% allocation factor. The same is applied to the total waste, measured separately on the yearly basis for all the produced items.

The production waste of the granulation at Armacell in Thimister-Clermont goes into a thermal recovery. From the thermal recovery of the 0,780 kg production waste in the granulation, resulting credits of 2,57 MJ electrical and 4,7 MJ thermal energy, which are subtracted from inputs of this production process. From the extrusion at Armacell in Thimister-Clermont resulting 2,08 kg production waste for recycling. This production waste is looped to the material input rPET granules purchased of the declared unit. Electrical and thermal energy credits of the production waste of the packaging, which result from thermal recovery of the polymers, are subtracted from inputs of these production processes.

3.9 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 following link documents the background data of the GaBi 10 databases (SP 40), to which this study also refers *Sphera*.

4. LCA: Scenarios and additional technical information

As the information modules A1–A3 are observed in this study, no information is provided on the LCA scenarios and no further technical information is made available.

5. LCA: Results

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE 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	MND	MND	MND	MND	MND

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A1: 1 m³ ArmaPET Eco 50

Parameter	Unit	A1-A3
Global warming potential	[kg CO_2-Eq.]	91.30
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	5.18E-6
Acidification potential of land and water	[kg SO_2-Eq.]	2.30E-1
Eutrophication potential	[kg $(PO_4)^3$-Eq.]	2.58E-1
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	3.25E-1
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	4.14E-4
Abiotic depletion potential for fossil resources	[MJ]	1250.00

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A1: 1 m³ ArmaPET Eco 50

Parameter	Unit	A1-A3
Renewable primary energy as energy carrier	[MJ]	409.00
Renewable primary energy resources as material utilization	[MJ]	67.30
Total use of renewable primary energy resources	[MJ]	476.00
Non-renewable primary energy as energy carrier	[MJ]	701.00
Non-renewable primary energy as material utilization	[MJ]	1170.00
Total use of non-renewable primary energy resources	[MJ]	1880.00
Use of secondary material	[kg]	52.51
Use of renewable secondary fuels	[MJ]	0.00E+0
Use of non-renewable secondary fuels	[MJ]	0.00E+0
Use of net fresh water	[m³]	7.51E-1

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A1: 1 m³ ArmaPET Eco 50

Parameter	Unit	A1-A3
Hazardous waste disposed	[kg]	1.10E-6
Non-hazardous waste disposed	[kg]	2.18E+0
Radioactive waste disposed	[kg]	1.62E-1
Components for re-use	[kg]	0.00
Materials for recycling	[kg]	0.00
Materials for energy recovery	[kg]	0.00
Exported electrical energy	[MJ]	0.00
Exported thermal energy	[MJ]	0.00

All indicators are collected in accordance with */EN 15804/*. The impact assessment of environmental categories is carried out according to *CML 2001 Apr. 2015.*

6. LCA: Interpretation

The dominance analysis shows that the main causes of the environmental impacts and indicators can be found in the information modules A1 and A3. This shows the global warming potential for raw material acquisition with approx. 70% and production with 27%, based on all information modules.

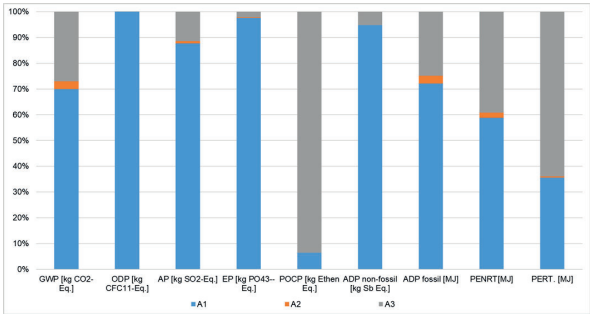


Diagram: Dominance analysis - Modules A1 to A3

Looking at the raw material acquisition for the product in detail, it becomes clear that two raw materials contribute decisively to the respective environmental impacts and indicators.

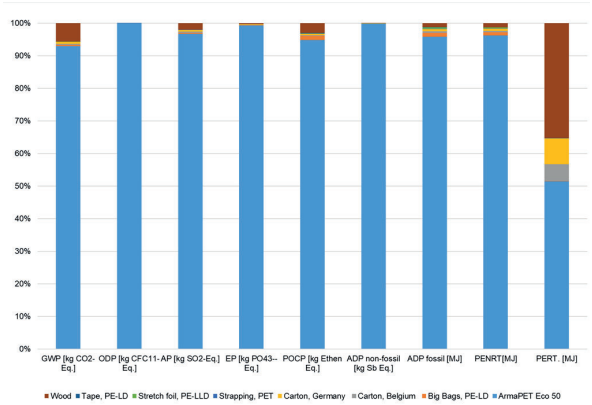


Diagram: Dominance analysis A1 – Raw material acquisition

The material provision of rPET flakes produces approx. 55% of the global warming potential. For the rPET granules purchased account for approximately 44% of greenhouse gas emissions. In production in module A3, especially the direct emissions from 0,763 kg residual foaming gas diffusion to air, has a high impact with 94% on the POCP of the whole calculation.

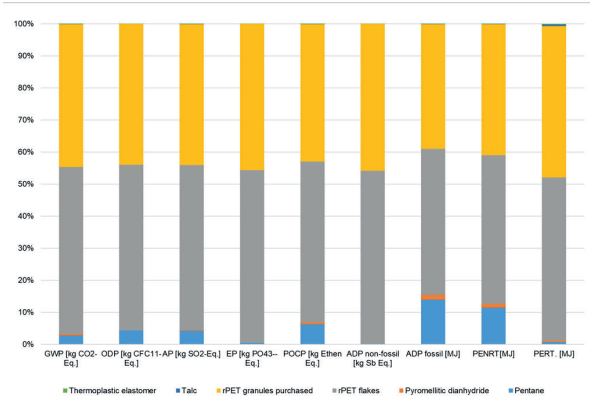


Diagram: Dominance analysis A1 – ArmaPET Eco50

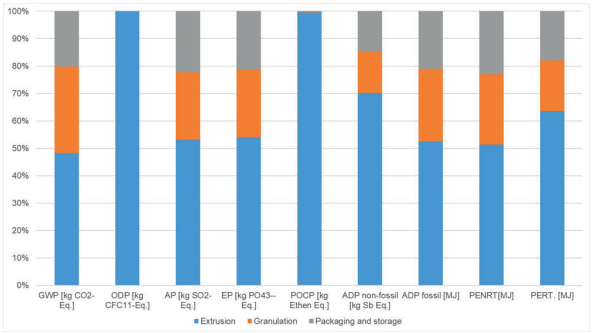


Diagram: Dominance analysis A3 – Production

The mass of PET flakes and PET granules comes from the information on the recipe of the product. The same applies to the information on the production process.

7. Requisite evidence

7.1 VOC emissions

The product has been tested for determination of the volatile organic compound emissions according to EN16516:2017 "*Construction products: Assessment of release of dangerous substances - Determination of emissions into indoor air*". The test has been performed by Servaco/ Normec Product Testing (Wetteren, Belgium) on June 11th, 2021, and the results are covered by the test report SPT2021-R084. The data are expressed for Floor and Wall application.

AgBB overview of results (28 days [µg/m³])

Name	Value	Unit
TVOC (C6 - C16) Floor application	27	µg/m³
Sum SVOC (C16 - C22) Floor application	<5	µg/m³
R (dimensionless) Floor application	3	-
VOC without NIK Floor application	27	µg/m³
Carcinogenic Substances Floor application	<1	µg/m³
TVOC (C6 - C16) Wall application	69	µg/m^3
Sum SVOC (C16 - C22) Wall application	<5	µg/m^3
R (dimensionless) Wall application	0,0007	-
VOC without NIK Wall application	69	µg/m^3
Carcinogenic Substances Wall application	<1	µg/m^3

AgBB overview of results (3 days [µg/m³])

Name	Value	Unit
TVOC (C6 - C16) Floor application	<5	µg/m³
Sum SVOC (C16 - C22) Floor application	0	µg/m³
R (dimensionless) Floor application	0	-
VOC without NIK Floor application	0	µg/m³
Carcinogenic Substances Floor application	<1	µg/m³
TVOC (C6 - C16) Wall application	7	µg/m^3
Sum SVOC (C16 - C22) Wall application	0	µg/m^3
R (dimensionless) Wall application	0	-
VOC without NIK Wall application	0	µg/m^3
Carcinogenic Substances Wall application	<1	µg/m^3

7.2 Leaching performance

Measurement of leaching performance has been indicatively tested based on **DIN EN 13468**: “Thermal insulating products for building equipment and industrial installations - Determination of trace quantities of water soluble chloride, fluoride, silicate, and sodium ions and pH”, at Armacell. Test temperature was 100 °C, with a leaching time of 0,5 h. The results on water leachable ions specified in mg/kg are summarized in the table.

Chloride (Cl^-)	Fluoride (F^-)	Silicate (SiO_3^{2-})	pH value
54 mg/kg	10 mg/kg	27 mg/kg	8,4

8. References

CML 2001 April. 2015
Indicators for environmental impacts
Leiden: Universität Leiden
http://cml.leiden.edu/software/data-cmlia.html#downloads
(30.11.2021)

ECHA-List
Candidate List of substances of very high concern for Authorisation,
https://echa.europa.eu/candidate-list-table (2021)

CPR
Regulation (EC) No 305/2011, Construction Products Regulation

DIN EN 826
DIN EN 826: 2013: Thermal insulating products for building applications - Determination of compression behaviour.

DIN EN 1606
DIN EN 1606: 2013: Thermal insulating products for building applications - Determination of compressive creep.

DIN EN 1607
DIN EN 1607: 2013: Thermal insulating products for building applications - Determination of tensile strength perpendicular to faces.

DIN EN 12091
DIN EN 12091: 2013: Thermal insulating products for building applications - Determination of freeze-thaw resistance.

DIN EN 12667
DIN EN 12667: 2001: Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Products of high and medium thermal resistance.

DIN EN 13468
DIN EN 13468: 2001 Thermal insulating products for building equipment and industrial installations - Determination of trace quantities of water-soluble chloride, fluoride, silicate, and sodium ions and pH.

DIN EN 15801
DIN EN 15801: 2010: Conservation of cultural property - Test methods - Determination of water absorption by capillarity.

DIN EN 29052
DIN EN 29052-1: 1991: Acoustics; determination of dynamic stiffness - Part 1: Materials used under floating floors in dwellings.

EAD
European Assessment Document no. 040179-00-1201, March 2016, “Factory-made products of extruded, foamed Polyethylene terephthalate (PET) for thermal and/or acoustical insulation”.

ecoinvent 3.7.1
Background database**:** ecoinvent 3.7.1
Zürich: ecoinvent
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