

# Environmental Product Declaration



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for

## ***alpha dampspærretape for roof underlay, vapour and wind barriers***

from

**BetaPack A/S**



Programme:

The International EPD® System, [www.environdec.com](http://www.environdec.com)

Programme operator:

EPD International AB  
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EPD type:

EPD of a specific product

*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [www.environdec.com](http://www.environdec.com)*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
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<b>Accountabilities for PCR, LCA and independent, third-party verification</b>
<b>Product Category Rules (PCR)</b>
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): Construction Products, PCR 2019:14, Version 1.3.2. UN CPC code: Nr. 36920: „Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics”
PCR review was conducted by: The Technical Committee of the International EPD System. See <a href="http://www.environdec.com">www.environdec.com</a> for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat <a href="http://www.environdec.com/contact">www.environdec.com/contact</a>
<b>Life Cycle Assessment (LCA)</b>
LCA accountability: Jannik Schulz, María Díaz Cáceres, brands & values GmbH, <a href="mailto:info@brandsandvalues.com">info@brandsandvalues.com</a>
<b>Third-party verification</b>
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: Third-party verifier: Jan Weinzettel, <a href="mailto:weinzettel@seznam.cz">weinzettel@seznam.cz</a> , Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

*The EPD owner has the sole ownership, liability, and responsibility for the EPD.*

*EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025*

## Company information

Owner of the EPD:

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Contact:

Jens Ravn Sørensen – js@betapack.dk

Description of the organisation:

BetaPack A/S is an independently owned Danish company located in Hørning close to Aarhus. Established in 1997 BetaPacks primary focus is in offering innovative and customized solutions to customers within two specific business areas: 1) Packaging solutions and 2) Building material solutions.

BetaPack A/S packaging solutions are sold directly to B2B customers within industrial and food (FMCG) segments. Our building material solutions are sold through builders' merchant with a focus on the professional craftsmen.

BetaPack A/S specializes in building material solutions that ensure a good indoor climate with a focus on:

- Airtightness
- Acoustic performance
- Ventilation
- Moisture and radon protection

Product-related or management system-related certifications:

All production sites are ISO 9001 certified.

Name and location of production site(s):

Hørning, Denmark and third-party affiliated contractors in Germany.

## Product information

Product name:

alpha universal tape for roof underlay, vapour and wind barriers

Product identification:

alpha universal dampspærretape is an adhesive tape that has been specially developed for joining vapour barrier membranes, for airtight connections of all types of vapour barrier and airtight membranes, including roof underlays.

Product description:

alpha universal tape is designed for interior and exterior use for durable joints. The tape is flexible but not stretchy and can therefore be used for joints as well as for details in the waterproofing layer, for example, around rafters or joists. The tape can also be used on underlayments and wind barriers. Adheres strongly to polyethylene, polypropylene, wood and aluminium sheets.

UN CPC code: Nr. 36920: „Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics”

Product covered by the EPD:

alpha universal tape (width 60 mm / length 25 m) GTIN 5712649413312

Geographical Scope:

Europe

Technical specifications:

alpha universal tape is a flexible universal tape for indoor and outdoor use.

Applications:

For permanent joints in the interior and exterior building envelopes.

Properties:

The tape can be used both for joints between vapour barrier membranes and for details in the sealing plane, e.g. around rafters or beams.

Technical specifications	Value & Unit
Typical consumption	0.054 m <sup>2</sup> per each 1 m <sup>2</sup> of membrane
Band width	60 mm
Tape length	25 m
Color	White, transparent, others possible
Layer thickness	0.5 mm

## LCA information

The EPD is carried out for the specific product alpha universal tape.

Declared unit: 1 m<sup>2</sup> alpha universal tape with packaging, release paper and roll core

Conversion factor to mass: 0.456 kg/m<sup>2</sup> (Product with packaging, release paper and roll core)

Product grammage: 0.280 kg/m<sup>2</sup> (Product without packaging, release paper nor roll core)

Reference service life: 50 years

Time representativeness: Based on yearly manufacturing data from 01/01/2020 until 31/12/2020.

### Description of the manufacturing processes:

The production of the alpha universal tape is done by bonding the tape carrier with the polymers, the scrim and the nonwoven into large rolls. After printing, the large rolls are coated with the adhesive, cut into sale units and packed for further distribution.

### Database and LCA software used:

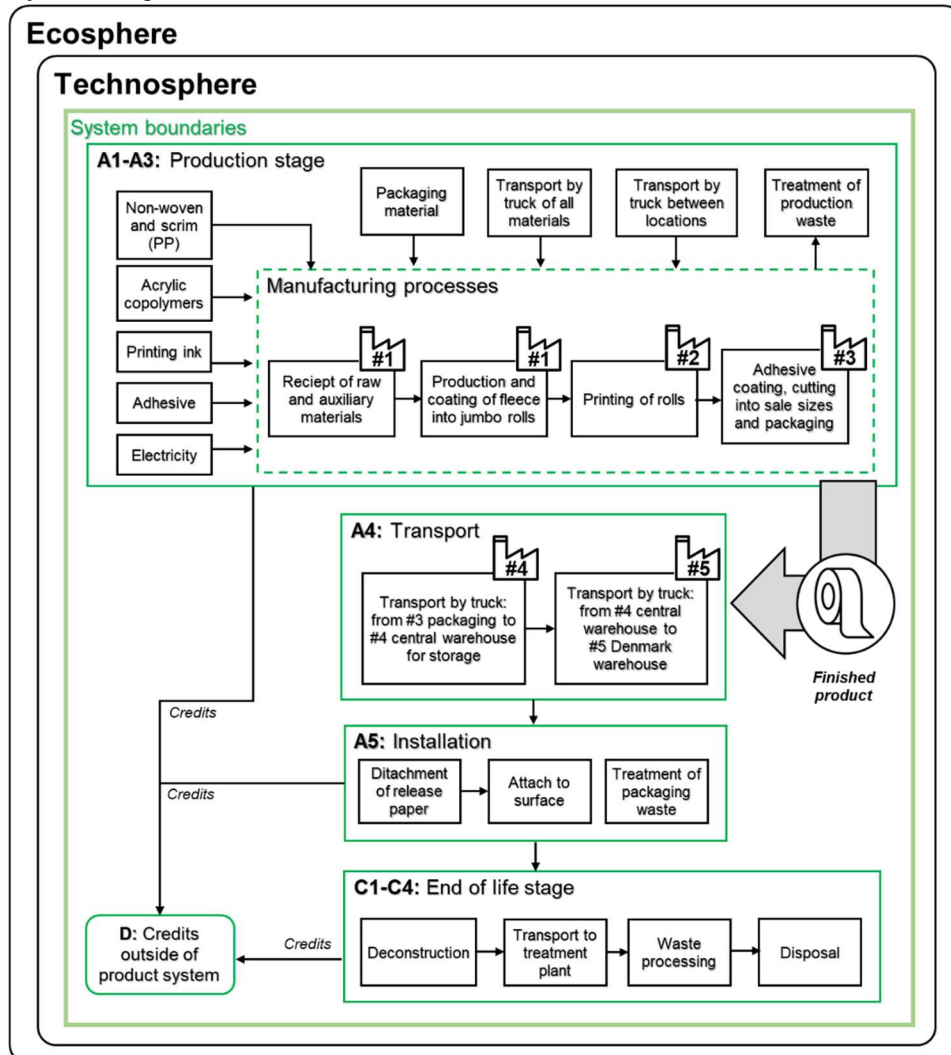
For the LCA model, the software system for holistic balancing (LCA for Experts) version 10.7 was used. Background data sets from the current version of the LCA for experts (GaBi) databases (Service pack 2023.2) were used entirely

### Description of system boundaries:

b) Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). The additional modules are A4 and A5.

- The biogenic C of the product packaging is balanced out in module A5.
- Infrastructure and capital goods are excluded from the system boundaries.
- All processing steps and locations are balanced within the system boundaries.
- The LCI data manufacturing data was gathered for the specific declared product, and no co-product allocation was necessary.
- The allocation of waste follows the polluter-pays principle. The system boundary to the next product system is set when the waste reaches the end-of-waste state. The impacts of waste treatment from production are included in Module A3. The impacts of waste treatment during end-of-life are included in Module C3, where the product reaches the end-of-waste status.
- All the LCI data in Modules A1-A5 corresponds to primary data collected from the manufacturing plant and contracted suppliers, including material and energy inputs, and waste and emission outputs. This data is responsible for >90% of the GHG emissions.

System diagram:



Each processing step within the system boundaries is marked with an icon and number (#1, #2, #3, etc.), indicating the specific production site where it occurs. The system boundaries cover the following modules:

**A1. Raw Material Supply**

- Extraction and processing of raw materials required for manufacturing the defined alpha universal tape for roof underlay, vapour and wind barriers: Non-woven and scrim (PP), acrylic copolymers, printing ink and adhesive.
- Extraction and processing of raw materials required for packaging the 1 m<sup>2</sup> of finished product, alpha universal tape for roof underlay, vapour and wind barriers. This includes the release paper, which is found between the layers of tape, and the roll core which holds the structure of the tape roll. The materials are: Paper, silicone, cardboard, film (PE), film (PP), pallet.
- Extraction and processing of raw materials required for internal packaging, referring to packaging for the transportation of the semi-finished product between all locations depicted in the system diagram (#1 to #4). Internal packaging includes cardboard, film (PE) and wood Pallet.
- Generation of electricity from primary energy resources to supply the production sites with energy.

#### A2. Transportation

- Transportation of the raw materials was modelled based on the providers specific locations and transportation via truck to the corresponding production locations in Germany. All materials are procured from providers within a distance of less than 1400 km.
- After production is done in the production location #1, the large rolls are transported to the production location #2 for printing. The application of the adhesive, cutting and packaging of the large roll into sales units occurs then in production location #3. The units are packed and loaded onto pallets for further transport. The transportation of raw materials for packaging as well as the transportation of the semi-finished products to all production locations is modelled in Module A2.

#### A3. Manufacturing

- Manufacturing of the defined alpha universal tape for roof underlay, vapour and wind barriers construction product occurs in Germany.
- The production of the large rolls of the alpha universal tape is done in the production location #1 by bonding the tape carrier with the polymers, the scrim and the nonwoven into large rolls. After printing in the production location #2, the large rolls are transported to production location #3 for coating with adhesive and to be cut into sale units. The products are then packed onto pallets for further transportation.
- Treatment of waste generated from the manufacturing processes is included in the model. Processing up to the end-of waste status or disposal of final residues including any packaging not leaving the factory gate with the product was modelled in module A3. Resulting credits are assigned to module D.
- Electricity for production in module A3 is modelled with the German Residual electricity mix.

#### A4. Transport

- The final pallets with packed products are transported to the main logistics centre within Germany (#4), and then transported to Denmark for final distribution (#5). The modelling is based on the providers specific locations and transportation via truck.

#### A5. Construction Installation

- The alpha universal tape for roof underlay, vapour and wind barriers is installed by removing the release paper and securing the overlapped membranes in place.
- The packaging waste resulting from the installation of the product on the construction site is sent for waste treatment.
- The expenses for installation and the transport expenses for disposal are taken into account in module A5.
- The incineration of packaging waste receives credits for electricity and thermal energy generation, which are allocated in module D.

#### C1-C4. End of Life

- The alpha universal tape for roof underlay, vapour and wind barriers is treated as waste in module C3 by means of incineration with energy recovery.
- Module C2 contains the environmental impact of transportation of the product to the waste treatment plant.
- Module C3 contains the necessary processes for waste treatment at the end of the product life cycle.
- 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.

D. Reuse, recovery, recycling potential

- This product has no considerable benefits due to recycling or/and reuse, but considerable benefits from energy recovery in End of Life.
- The value flows resulting from the treatment of packaging waste in module A3, packaging waste in module A5 and the product in module C3, which can potentially serve as energy input for a downstream product system in the form of the energy recovered from the waste-to-energy treatment, are accounted for completely in module D as credits outside of product system.

More information

For further information please contact Betapack A/S team at [info@betapack.dk](mailto:info@betapack.dk)

LCA practitioner: brands & values GmbH, [info@brandsandvalues.com](mailto:info@brandsandvalues.com)

Electricity in A1-A3 accounts for less than 30% of the GWP-GHG results of modules A1-A3. The energy requirements for production were modelled using the Residual electricity mix of the electricity supplier on the market. In this case the LCA for Experts dataset of Residual grid mix; AC, technology mix; consumption mix, to consumer; <1kV in Germany from the reference year 2020. The climate impact of the selected German Residual grid mix is 0.674 kg CO<sub>2</sub> eq./kWh, using the GWP-GHG indicator as defined in the PCR.

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	DE	DE	DE	EU	EU								EU	EU	EU	EU	EU
Specific data used	>90%																
Variation – products	0%																
Variation – sites	0%																

Modules declared: (X = included; ND = not declared).



## Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Non-woven and scrim (PP)	0.054	0.0%	0.0%- 0 kg C/kg
Acrylic copolymers	0.024	0.0%	0.0%- 0 kg C/kg
Printing ink	0.002	0.0%	0.0%- 0 kg C/kg
Adhesive	0.200	0.0%	0.0%- 0 kg C/kg
<b>Total product</b>	<b>0.280</b>	<b>0.0%</b>	<b>0.0%- 0 kg C/kg</b>
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Paper	0.090	19.8%	0.032 kg C/kg
Silicone	0.003	0.7%	0 kg C/kg
Cardboard	0.047	10.4%	0.019 kg C/kg
Film (PE)	0.001	0.2%	0 kg C/kg
Film (PP)	0.002	0.4%	0 kg C/kg
Pallet	0.033	7.3%	0.015 kg C/kg
<b>Total packaging</b>	<b>0.176</b>	<b>38.7%</b>	<b>0.667 kg C/kg</b>
<b>TOTAL Product with packaging</b>	<b>0.456</b>	<b>100%</b>	

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
None	Not applicable	Not applicable	Not applicable

## Environmental Information

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks. According to the EN 15804 standard, the characterization factors of EU-JRC must be applied. Version EF 3.1. of the characterization factors was used.

The characterization factors are available at the following internet connection:

<http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml>

Disclaimer: The use of the results of modules A1-A3 is discouraged without considering the results of modules C1-C4.

### Potential environmental impact – mandatory indicators according to EN 15804

Results per functional or declared unit									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	6.51E-01	4.58E-02	1.89E-02	0.00E+00	2.00E-03	6.64E-01	0.00E+00	-3.20E-01
GWP-bio-genic	kg CO <sub>2</sub> eq.	-2.45E-01	0.00E+00	2.45E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO <sub>2</sub> eq.	2.98E-03	4.23E-04	1.02E-05	0.00E+00	1.84E-05	8.56E-07	0.00E+00	-2.15E-05
GWP-total	kg CO <sub>2</sub> eq.	4.10E-01	4.62E-02	2.63E-01	0.00E+00	2.01E-03	6.64E-01	0.00E+00	-3.21E-01
ODP	kg CFC 11 eq.	7.83E-10	5.94E-15	1.72E-14	0.00E+00	2.59E-16	4.13E-14	0.00E+00	-2.63E-12
AP	mol H <sup>+</sup> eq.	1.66E-03	8.28E-05	3.97E-05	0.00E+00	3.31E-06	6.93E-05	0.00E+00	-3.97E-04
EP-freshwater	kg P eq.	5.78E-06	1.67E-07	9.01E-09	0.00E+00	7.28E-09	9.87E-09	0.00E+00	-5.46E-07
EP-marine	kg N eq.	4.91E-04	3.33E-05	1.43E-05	0.00E+00	1.29E-06	1.78E-05	0.00E+00	-1.18E-04
EP-terrestrial	mol N eq.	5.62E-03	3.80E-04	1.81E-04	0.00E+00	1.48E-05	3.31E-04	0.00E+00	-1.26E-03
POCP	kg NMVOC eq.	1.61E-03	7.43E-05	3.76E-05	0.00E+00	2.95E-06	5.08E-05	0.00E+00	-3.26E-04
ADP-minerals&metals*	kg Sb eq.	9.17E-07	3.03E-09	2.22E-10	0.00E+00	1.32E-10	3.84E-10	0.00E+00	-2.35E-08
ADP-fossil*	MJ	1.73E+01	6.22E-01	5.69E-02	0.00E+00	2.71E-02	1.04E-01	0.00E+00	-5.86E+00
WDP*	m <sup>3</sup>	8.12E-02	5.52E-04	1.73E-02	0.00E+00	2.41E-05	6.41E-02	0.00E+00	-2.89E-02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

<sup>1</sup> Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

## Potential environmental impact – additional mandatory and voluntary indicators

Results per functional or declared unit									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG	kg CO <sub>2</sub> eq.	6.54E-01	4.62E-02	1.90E-02	0.00E+00	2.01E-03	6.64E-01	0.00E+00	-3.21E-01
PM	Disease incidence	ND	ND	ND	ND	ND	ND	ND	ND
IR	kBq U235 eq.	ND	ND	ND	ND	ND	ND	ND	ND
ETP-fw	CTUe	ND	ND	ND	ND	ND	ND	ND	ND
HTP-c	CTUh	ND	ND	ND	ND	ND	ND	ND	ND
HTP-nc	CTUh	ND	ND	ND	ND	ND	ND	ND	ND
SQP	dimensionless	ND	ND	ND	ND	ND	ND	ND	ND
Acronyms	GWP-GHG = This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO <sub>2</sub> is set to zero; PM = Particulate matter emissions; IR = Ionizing radiation, human health; ETP-fw = Eco-toxicity - freshwater; HTP-c = Human toxicity, cancer effect; HTP-nc = Human toxicity, non-cancer effects; SQP = Land use related impacts/Soil quality								

## Use of resources

Results per functional or declared unit									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2.11E+00	4.53E-02	2.99E+00	0.00E+00	1.97E-03	2.64E-02	0.00E+00	-1.74E+00
PERM	MJ	2.98E+00	0.00E+00	-2.98E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	5.08E+00	4.53E-02	1.15E-02	0.00E+00	1.97E-03	2.64E-02	0.00E+00	-1.74E+00
PENRE	MJ	8.77E+00	6.25E-01	1.67E-01	0.00E+00	2.72E-02	8.58E+00	0.00E+00	-5.86E+00
PENRM	MJ	8.59E+00	0.00E+00	-1.10E-01	0.00E+00	0.00E+00	-8.48E+00	0.00E+00	0.00E+00
PENRT	MJ	1.74E+01	6.25E-01	5.70E-02	0.00E+00	2.72E-02	1.04E-01	0.00E+00	-5.86E+00
SM	kg	7.59E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.24E-03
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m <sup>3</sup>	3.72E-03	4.96E-05	4.07E-04	0.00E+00	2.16E-06	1.50E-03	0.00E+00	-1.35E-03
Acronyms	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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water								

The indicator value for PENRM in C3 is negative, as the non-renewable primary energy resources used as raw materials leave the product system.

## Waste production and output flows

### Waste production

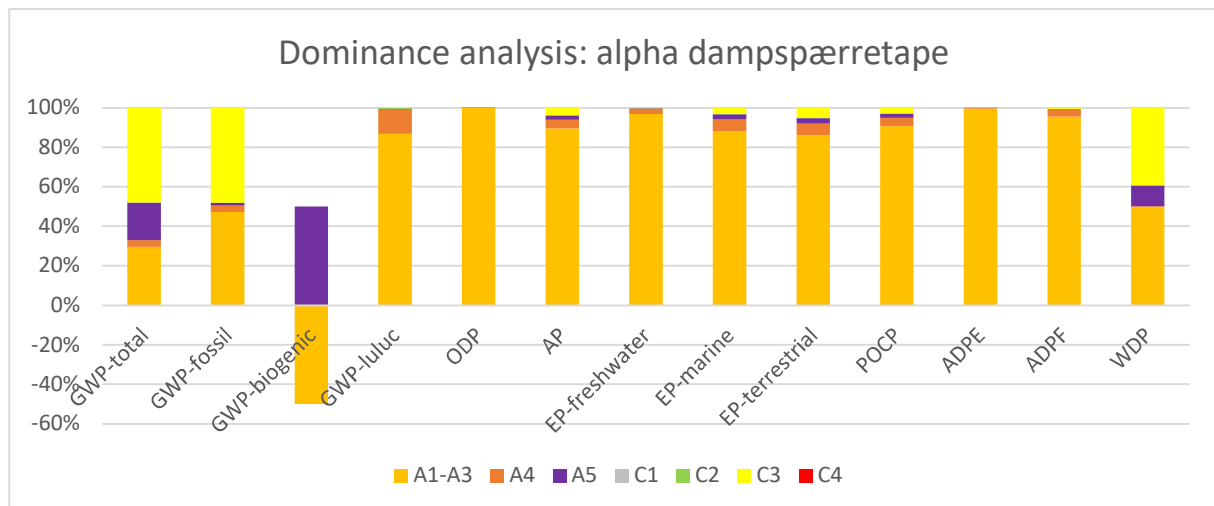
Results per functional or declared unit									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.14E-05	1.93E-12	1.37E-12	0.00E+00	8.43E-14	2.38E-12	0.00E+00	-3.13E-10
Non-hazardous waste disposed	kg	1.41E-02	9.52E-05	4.19E-03	0.00E+00	4.15E-06	3.40E-03	0.00E+00	-2.91E-03
Radioactive waste disposed	kg	4.22E-04	1.17E-06	2.27E-06	0.00E+00	5.09E-08	6.25E-06	0.00E+00	-4.41E-04

### Output flows

Results per functional or declared unit									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	4.41E-04	0.00E+00	4.72E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	7.93E-02	0.00E+00	2.22E-01	0.00E+00	0.00E+00	1.20E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	1.84E-01	0.00E+00	4.07E-01	0.00E+00	0.00E+00	2.15E+00	0.00E+00	0.00E+00

## Interpretation

The following dominance analysis show the individual impact categories and explore them in depth.



The environmental impacts were analysed using the example of global warming potential (GWP total) to identify the responsible sources along the life cycle. Module C3 (47.9%) has dominant influence followed by modules A1-A3 (32.9%) and module A5 (19.0%) on GWP total. In module C3, the incineration of the adhesive and the nonwoven, in modules A1-A3 the extraction of the adhesive and the nonwoven and in module A5 the incineration of the paper packaging is the main responsibility.

Transportation of raw materials to and between the manufacturing sites (A2) and disposal transportation of the product in EoL (C2) are not very relevant in terms of GWP. The negative contribution to biogenic GWP in A1-A3 and the positive contribution in A5 can be explained by the use of wooden, paper and cardboard packaging, in which biogenic carbon is bound.

The extraction of the adhesive has the largest contribution to the impacts of the indicators AP, ADPE and ADPF, the incineration of the adhesive for WDP, the dye for GWP luluc and ODP and the cardboard for EP and POCP.

The data quality of the relevant generic datasets used is classified as very good, good or satisfactory. Relevant data sets are defined as data sets that together account for at least 80% of the absolute impact of each core indicator included in the EPD across the declared modules with the exception of Module D.

## References

EN 15804:2012+A2:2019, Sustainability of construction works – Environmental product declarations – Core rules for product category of construction products, 2019.

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