

Environmental Product Declaration



In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

DESSO Desert EcoBase

from

TARKETT



2 Programme:

Programme operator:

EPD registration number:

Publication date:

Revision date:

Valid until:

3 The International EPD® System, www.environdec.com

EPD International AB

S-P-09339

2023-05-15

2024-05-23

2028-05-15

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



General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)	
Product category rules (PCR): <i>PCR 2019:14 version 1.3.3 and c-PCR-004 Resilient, textile and laminate floor coverings (EN 16810)</i>	
PCR review was conducted by: <i>The Technical Committee of the International EPD® System lead by Claudia A Peña. A full list of members available on www.environdec.com. The review panel may be contacted via info@environdec.com</i>	
Independent third-party verification of the declaration and data, according to ISO 14025:2006: <input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification	
Third party verifier: Damien Prunel from LCIE Bureau Veritas	
Procedure for follow-up of data during EPD validity involves third party verifier: <input checked="" type="checkbox"/> Yes <input 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: Tarkett

Contact: Sandy Bentmim (sandy.bentmim@tarkett.com)

Description of the organisation:

With an international coverage and a wide range of products, Tarkett has over 130 years of experience in providing integrated solutions for floorings to professionals and end users. Many of the most important architectural firms in the world and building professionals have chosen Tarkett for the value of its products and for its consultation and service abilities. Therefore, Tarkett floorings and sport surfaces are present in several prestigious architectural reference points. Tarkett offers integrated solutions for floorings, able to meet the particular needs of customers. Our wide range of designs, colours and models provides an infinite series of possibilities, contributing to create a positive environment and a better quality of life for people.

Tarkett operates with the utmost respect for the environment towards the realization of eco-friendly products.

Tarkett's commitment to the environment is woven throughout its business. Cradle-to-Cradle principles are, in fact, the basis of the design and production of every solution. Particularly, the lifecycle analysis is used to continuously improve the production process, and so the products until their use stage, disposal and recycling. The development of products that can be reused within internal production cycles, or external ones in case of other individuals, has been an integral part of the business strategy aimed at sustainability for many years. The WCM (World Class Manufacturing) management system has been developed in 2009, and it includes the environmental pillar aimed to the elimination of losses and to the growth of process efficiency.

Product-related or management system-related certifications: ISO 14001, ISO 45001, WCM manufacturing site

Name and location of production site(s): Dendermonde (Belgium) and Waalwijk (Netherlands)

Product information

Product name: DESSO Desert EcoBase

Product identification: Carpet tile with a 100% recyclable DESSO EcoBase^{®1} backing and solution dyed PA6 yarn

Product description: Loose-lay carpet tiles (EN 1307) with DESSO EcoBase[®] backing developed by Tarkett. The service lifetime recommended by Tarkett is 10 years

UN CPC code: 2223Z

¹ Assured by Lloyds Register

LCA information

Functional unit / declared unit: 1m² of floor covering with a reference service life (RSL) of 1 year for specified characteristics application and use areas according to ISO 1307 and EN ISO 10874.

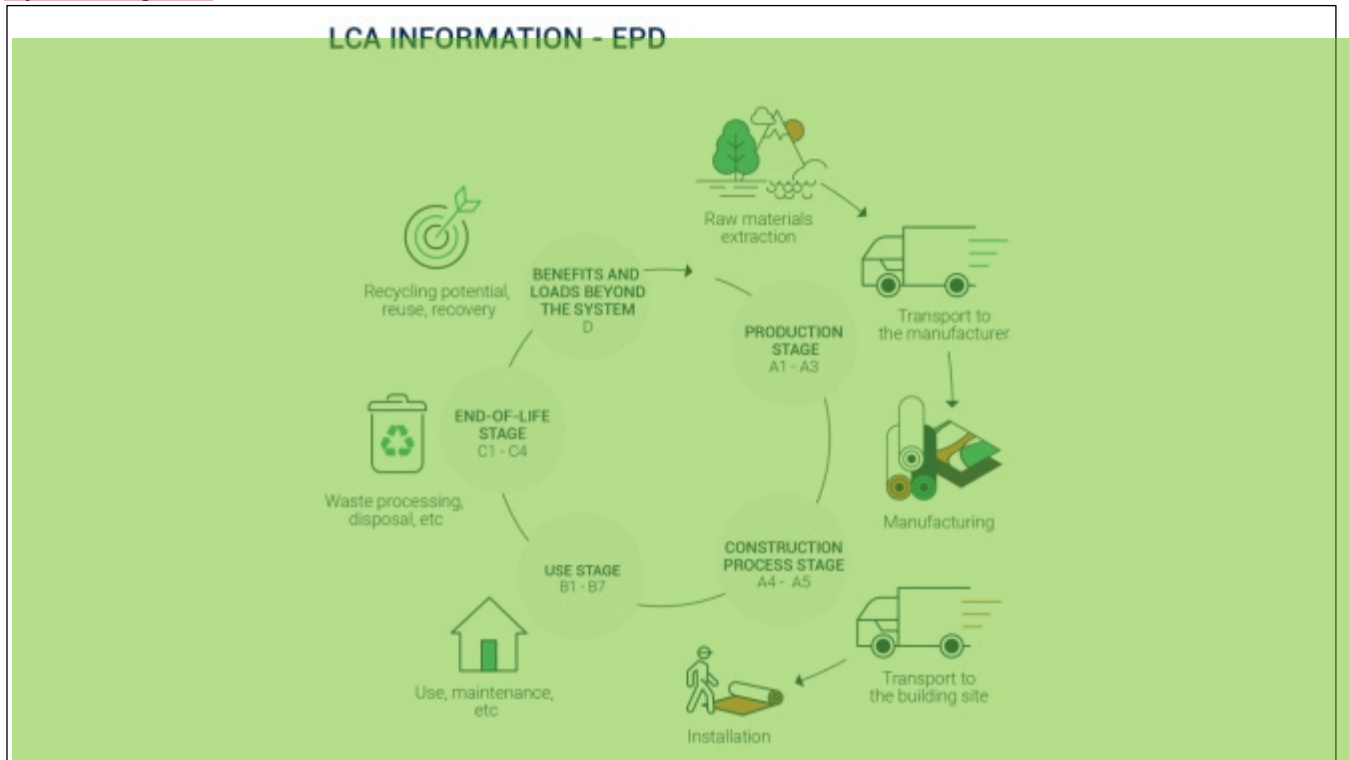
Reference service life: 1 year

Time representativeness: 2022

Database(s) and LCA software used: Ecoinvent 3.9.1, Simapro 9.5.0.2, EN 15804 reference package based on EF 3.1

Description of system boundaries: Cradle to grave and module D (A + B + C + D)

System diagram:



More information: The products are classified in accordance with EN ISO 10874, (previously EN 685) and in reference to the FCSS (Floor Covering Standard Symbols) to be used in all professional areas which require class 33 or less.

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	Reuse-Recovery-Recycling-potential
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	X	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	European technology and process coverage																European
Specific data used	-	100%	100%	100%	100%	-	-	-	-	-	-	-	-	-	100% for recycling process		100% for recycling process
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Content information

Characteristics	Yarn Weight [kg/m ²]	Product Weight [kg/m ²]	Product Thickness [mm]
DESSO Desert EcoBase	6.10E-01	3.90E+00	6.00E+00

Chemical composition for above mentioned products is presented in the following table:

Product components	Weight [%]	Post-consumer material, weight-%	Renewable material, weight-%
Non-woven (PET/PP)	4	0	0
Yarn PA6*	15	0	0
SBR-compound	6	0	0
Aluminium trihydrate	14	0	0
Primary chalk	4	0	0
Glass scrim	1	0	0
EcoBase (w. recycled chalk)**	56	0	9
Packaging materials	Weight, kg	Weight-% (versus the product)	
Cardboard box	1.09E-01	3	
Wooden pallet	1.00E-01	2	
* The yarn is manufactured from 75% pre-consumer materials.			
** EcoBase contains up to 82% pre-consumer recycled chalk			

Material Health

DESSO Desert EcoBase is C2C-Silver certified.

Raw materials are assessed against 'Material Health' criteria as defined by the C2C product certification standard v3.1 and the C2C Material Health Assessment methodology (see www.c2ccertified.org).

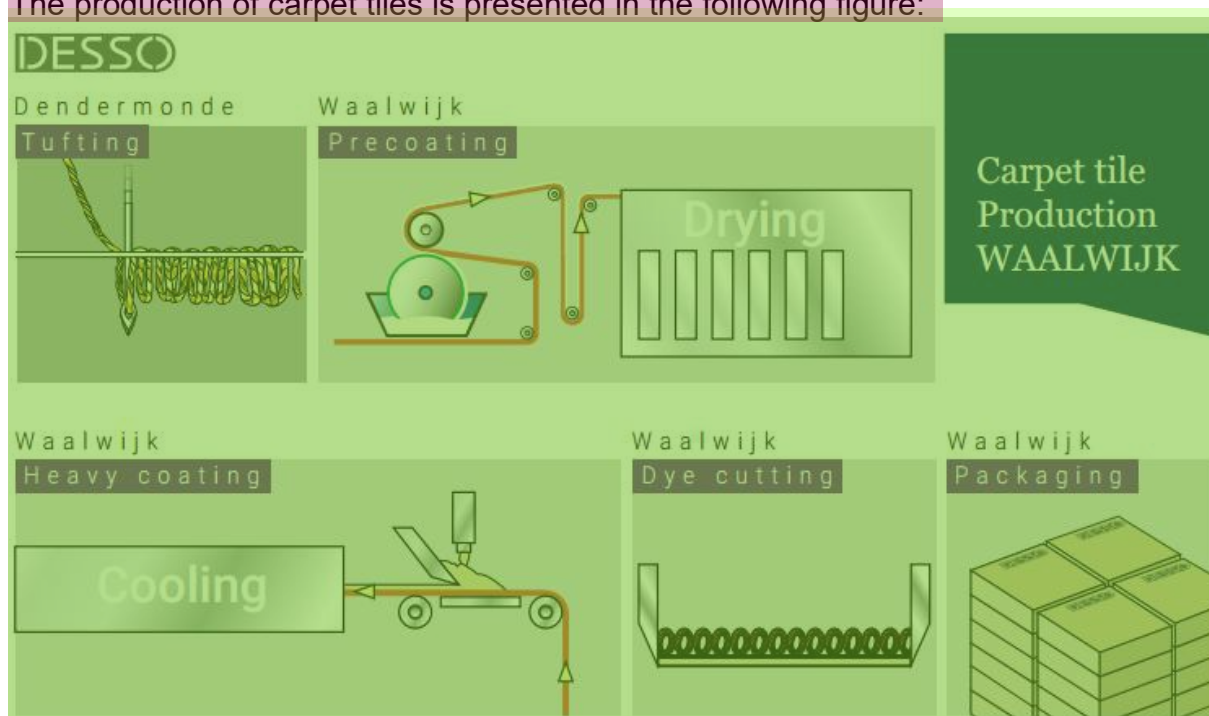
Recycled content (third-party verified)

DESSO Desert EcoBase contains 63.1% recycled and bio-based content². The product is delivered with the Cradle to Cradle® Gold-certified DESSO EcoBase® backing, which is 100% recyclable³ and designed with 100% positively defined⁴ ingredients. This includes chalk upcycled from the Dutch drinking water industry and pine rosin, a by-product of the Scandinavian paper industry.

Product manufacturing

Production process

The production of carpet tiles is presented in the following figure:



Renewable energy

Our carpet tiles are produced with energy from 100% renewable sources. The electricity is coming from renewable sources with Guarantees of Origin⁵.

Production waste

Waste type	DESSO Desert EcoBase
Non-hazardous waste to incineration in the cement industry [kg/m ²]	2.29E-01
Non-hazardous wastewater to external treatment [kg/m ²]	2.63E-02

² This includes 5% bio-based content based on the total product weight. The recycled content is assured by Lloyds

³ Assured by Lloyds Register

⁴ Positively defined means all ingredients have been assessed as either Green (optimal) or Yellow (tolerable) according to the Cradle to Cradle® assessment criteria. As described in Cradle to Cradle® Certified Product Standard Version 3.1

⁵ A mix of mainly wind and a small part of solar and hydro energy reflecting 0.04 kgCO₂eq/kWh

Delivery and installation

Delivery

The average distribution distance between the factories and the installation site is presented in the following table. The distribution is made by truck.

	DESSO Desert EcoBase
Average distance of delivery [km]	7.00E+02

Installation

Carpet flooring do not use any electric tools for their installation. If a cut is necessary, it could be done with a manual tool.

Waste

During the installation approximately 3% of the flooring is lost as off-cuts. All flooring losses are sent to incineration.

Packaging

50% of the packaging materials goes to incineration and 50% goes to landfill except for wooden pallet which are recycled.

Use Stage

Reference Service Life (RSL)

For this product, the stated RSL is 1 year. It should be noted, however, that the service life of a carpet flooring may vary depending on the amount and nature of floor traffic and the type and frequency of maintenance. The manufacturer has provided this service life on the basis of his experience of flooring manufacture and supply. This RSL is applicable as long as the product use complies with that defined by ISO 14041 and ISO 10874 in accordance with the product's classification. The service lifetime recommended by Tarkett is 10 years.

Cleaning and maintenance

The maintenance step concerns the cleaning of the floor. Tarkett has provided the recommended maintenance routine for the product throughout the reference life. Water, detergent and electricity consumption of the cleaning machine are considered in the LCA study:

- Common maintenance: 2 times / week
- Periodical maintenance: 2 times / year

Description	Amount	Unit
Electricity consumption	4.42E-01	kWh/year/m ²
Water consumption	5.70E-02	L/year/m ²
Detergent consumption	3.00E-03	L/year/m ²

Prevention of structural damage

To avoid excessive wear, usage should be restricted to the stated areas of application as outlined by the norm ISO 10874.

End of Life

Our circular approach to carpet tiles enables us to reduce the emission of greenhouse gases like carbon dioxide, a major contributor to global warming. Tarkett has implemented a take-back and recycling program called ReStart⁶. Via Tarkett's Sales Network and with the help of logistic partners, post-use carpet tiles are collected and returned to Tarkett's carpet recycling centre in Waalwijk, the Netherlands⁷. DESSO's EcoBase products have been designed with disassembly and recycling in mind, which allows for recovery of yarn and backing materials in a closed-cycle and without loss of quality. The recycling process⁸ is developed by Tarkett and unique in the market.

The only carpet tile manufacturer with a closed-loop recycling system, we limit the use of virgin raw materials for new products, and avoid common, carbon-emitting options such as incineration and the landfill at product end-of-life.

Transport

Carpets are recycled in the same factory where they are produced. So, the distance of transport between installation sites and recycling site is the same as for the module A4 (average delivery distance to customer).

	DESSO Desert EcoBase
Transport distance to Tarkett's carpet recycling centre [km]	7.00E+02

Waste processing

Basically, the process separates yarn and EcoBase[®] backing and makes these main material streams available for the next carpet cycle, without loss of value and/or material properties (closed-loop recycling).

A small rest stream (mainly tuft cloth and SBR-compound) cannot be reused yet at the desired quality level. At this moment in time those streams will be considered as fuels and raw material (chalk and ATH) for the cement industry, until other outlets will be found.

Resource recovery

⁶ https://professionals.tarkett.com/en_EU/node/restart-recycling-take-back-programme-9721

⁷ https://professionals.tarkett.com/en_EU/node/recycling-carpet-tile-materials-closing-loop-10207

⁸ Recyclability has been verified by Lloyds Register.

Module D has been considered for this study in order to evaluate the possible environmental benefits obtainable through the re-use of secondary materials in other production cycles. Particularly, the module clearly describes the benefits and the environmental charges deriving from reusable products exiting from the system, such as secondary materials or secondary fuels.

Three outlets have been considered:

- Yarn
- DESSO EcoBase[®] backing
- Others compounds

PA6 yarn will be sent back to Tarkett's yarn supplier Aquafil for depolymerization and reuse in new carpet yarns. This post-use material stream can be used for 100% and without quality loss for the production of new carpet yarns.

DESSO EcoBase[®] backing is 100% recyclable in Tarkett's own production process. Post-use material can be directly recovered in Tarkett's production for the same purpose and avoids the production and use of primary material.

A small rest fraction is recycled in the cement industry. The chalk and ATH content substitutes primary chalk, which is a raw material for the production of cement. Organic residues substitute primary fuel for processing.

Interpretation of results

The environmental impact of DESSO EcoBase products should be considered over the whole life cycle and beyond, including all module A-D. DESSO EcoBase consists of a novel recipe, specially designed to enable post-consumer recycling on a high level, which means, for the same purpose and without quality loss.

The original EcoBase backing was introduced in 2010. Because of the relatively long service life-time (10 years), the majority of current products are still in their first cycle, meaning that recycled content is still very minimal and not included in the calculations.

Environmental Information

Potential environmental impact

Results per functional or declared unit - End of Life -> Recycling																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	4.40E+00	1.35E-01	4.02E-01	0.00E+00	1.64E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-01	7.09E-01	7.55E-01	-4.89E+00
GWP-fossil	kg CO2 eq	4.90E+00	1.35E-01	3.03E-01	0.00E+00	1.62E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-01	1.26E-01	7.55E-01	-4.91E+00
GWP-biogenic	kg CO2 eq	-5.11E-01	5.50E-05	9.88E-02	0.00E+00	1.14E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.51E-05	5.83E-01	6.22E-05	1.82E-02
GWP-Luluc	kg CO2 eq	4.61E-03	6.45E-05	1.47E-04	0.00E+00	6.33E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.45E-05	1.51E-04	5.75E-06	-3.93E-03
AP	kg CFC11 eq	1.49E-06	2.86E-09	4.50E-08	0.00E+00	2.93E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.87E-09	3.39E-09	7.76E-10	-2.44E-08
ODP	mol H+ eq	2.14E-02	4.23E-04	7.30E-04	0.00E+00	8.06E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.30E-04	9.65E-04	1.72E-04	-1.08E-02
EP-freshwater	kg P eq	1.18E-03	9.22E-06	3.75E-05	0.00E+00	1.44E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.22E-06	6.65E-05	2.25E-06	-4.89E-04
EP-terrestrial	kg N eq	4.15E-03	1.44E-04	2.58E-04	0.00E+00	1.48E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48E-04	1.58E-04	9.81E-05	-1.24E-03
POCP	kg NMVOC eq	4.33E-02	1.52E-03	1.63E-03	0.00E+00	1.28E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-03	1.66E-03	8.37E-04	-1.72E-02
ADP-minerals&metals*	kg Sb eq	1.50E-02	6.32E-04	5.86E-04	0.00E+00	4.10E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.42E-04	5.46E-04	2.10E-04	-8.14E-03
ADP-fossil*	MJ	2.79E-05	4.24E-07	8.81E-07	0.00E+00	3.35E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.24E-07	6.51E-06	3.63E-08	-9.51E-06
WDP	m3 depriv.	8.69E+01	1.86E+00	2.81E+00	0.00E+00	3.71E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.87E+00	1.18E+00	1.39E-01	-1.11E+02
Acronyms		2.05E+00	7.44E-03	6.96E-02	0.00E+00	3.99E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.45E-03	3.52E-02	3.41E-02	4.77E+00

* 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.

Use of resources

Results per functional or declared unit - End of Life -> Recycling																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ, net CV	1.92E+01	2.90E-02	2.16E+00	0.00E+00	6.87E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.90E-02	1.81E+01	5.70E-03	1.54E+01
PERM	MJ, net CV	4.46E+00	0.00E+00	-1.45E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, net CV	2.37E+01	2.90E-02	7.18E-01	0.00E+00	6.87E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.90E-02	1.81E+01	5.70E-03	1.54E+01
PENRE	MJ, net CV	6.32E+01	1.86E+00	2.10E+00	0.00E+00	3.64E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.87E+00	1.18E+00	1.39E-01	-9.34E+01
PENRM	MJ, net CV	2.53E+01	0.00E+00	7.59E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E+01
PENRT	MJ, net CV	0.00E+00	7.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.98E+01
SM	kg	2.44E+00	0.00E+00	7.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.80E+00
RSF	MJ, net CV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.17E-25
NRSF	MJ, net CV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.64E-24
FW	m3	-1.69E-01	-8.88E-04	-5.27E-03	0.00E+00	-2.24E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.89E-04	-1.83E-03	-9.38E-05	1.77E-01
Acronyms		PERE = Use of renewable primary energy excluding non-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														

Waste production and output flows

Results per functional or declared unit - End of Life -> Recycling																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	5.45E-01	1.78E-03	2.03E-02	0.00E+00	3.20E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-03	2.02E-02	1.80E-02	-3.68E-01
Non-hazardous waste disposed	kg	1.36E+00	1.06E-01	1.81E-01	0.00E+00	4.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-01	3.19E-01	6.95E-03	-4.17E-01
Radioactive waste disposed	kg	1.15E-04	6.06E-07	3.61E-06	0.00E+00	2.59E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.07E-07	1.17E-06	7.06E-08	-6.33E-04
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	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	2.07E-01	0.00E+00	1.06E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.88E+00	6.93E-01	2.12E-01
Materials for energy recovery	kg	8.37E-02	0.00E+00	1.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.17E-01	0.00E+00
Exported energy, electricity	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.37E+00
Exported energy, thermal	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.23E-01

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	Unit	QUANTITY
Biogenic carbon content in product	kg C	1.45E-01
Biogenic carbon content in packaging	kg C	1.09E-03

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂.

Additional mandatory and voluntary impact category indicators

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG	kg CO ₂ eq	4.91E+00	1.35E-01	3.03E-01	0.00E+00	1.63E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-01	1.28E-01	7.55E-01	-4.91E+00

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 CO₂ is set to zero.

Differences compared to previous EPD

Data from an improved EcoBase backing have been integrated in the calculations. This improvement means the replacement of a fossil-based ingredient for a bio-based ingredient. Also, production data from a more recent year (2022) has been integrated in the calculations.

References

General Programme Instructions of the International EPD® System. Version 4.0.
PCR 2019:14. Version 1.3.3 c-PCR-004 Resilient, textile and laminate floor coverings (EN 16810).

