Environmental Product Declaration

In accordance with ISO 21930:2017, ISO14025:2006 and EN15804:2012+A2:2019/AC:2021 for:

Acczent and Ruby Heterogenous Vinyl flooring from TARKETT

EPD OF MULTIPLE PRODUCTS BASED ON WORST CASE RESULTS.

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-01348
Publication date (issue):	2018-12-06
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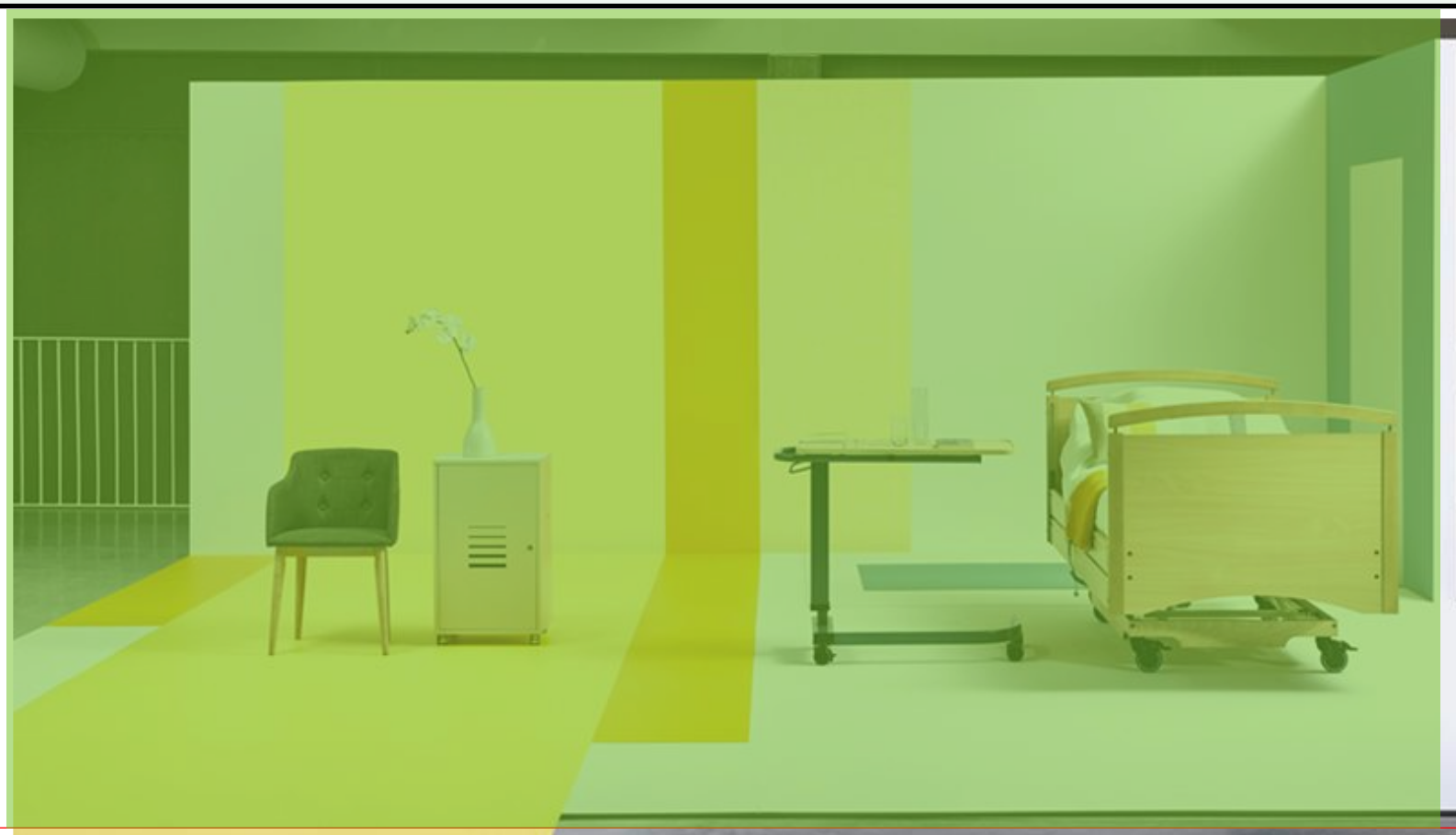
An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



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

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14 version 1.3.3 and c-PCR-004 Resilient textile and laminate floor coverings (EN 16810)
PCR review was conducted by: The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.
Life Cycle Assessment (LCA)
LCA accountability: Juliette Pouansi, Tarkett
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification Third party verifier: Olivia Djiriguian from LCIE Bureau Veritas. Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☒ Yes ☐ 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.

This EPD is a specific EPD.

Company information

Owner of the EPD: Tarkett

Contact: Myriam Tryjefaczka , myriam.tryjefaczka@tarkett.com Tarkett La Défense, 1 Terrasse Bellini 92400 Paris

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, colors 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 commitment to the environment is also proven by the accession to the Circular Economy 100 program, where Tarkett group, with a network of companies, is working to develop a circular economy model based on the reuse of materials and preservation of natural resources. 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 9001, ISO 14001, ISO 50001, WCM manufacturing site.

Name and location of production site(s): Sedan (France) , Clervaux (Luxembourg)

Product information

Product name: Classic 40, Ruby 70, Topaz 70, Meteor 70, Acczent Excellence 80, Acczent Essential 70, Aqua Multisafe.

Declared Product : Topaz 70 , results based on worst case scenario

Product identification: Heterogeneous poly (vinyl chloride) floor coverings (EN 10582).

Product description: Acczent and Ruby is a heterogeneous compact resilient floor covering developed by Tarkett. The service lifetime recommended by Tarkett is 25 years.

Geography: European technology and process coverage.

UN CPC code: APE/NAF - 2223Z

LCA information

Functional unit / declared unit: 1m^2 of floor covering with a reference service life (RSL) of 1 year for specified characteristics application and use areas according to ISO 10582 and EN ISO 10874.

Reference service life: 1 year.

Time representativeness: 2023.

Database(s) and LCA software used: Ecoinvent3.9, Simapro 9.5

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

Cut-off criteria : The cut-off criteria used for this study follow the guidelines set out in the PCR which conform to the EN 15804-A2, as following:

- All inputs and outputs to a (unit) process are included in the calculation where the data is available.

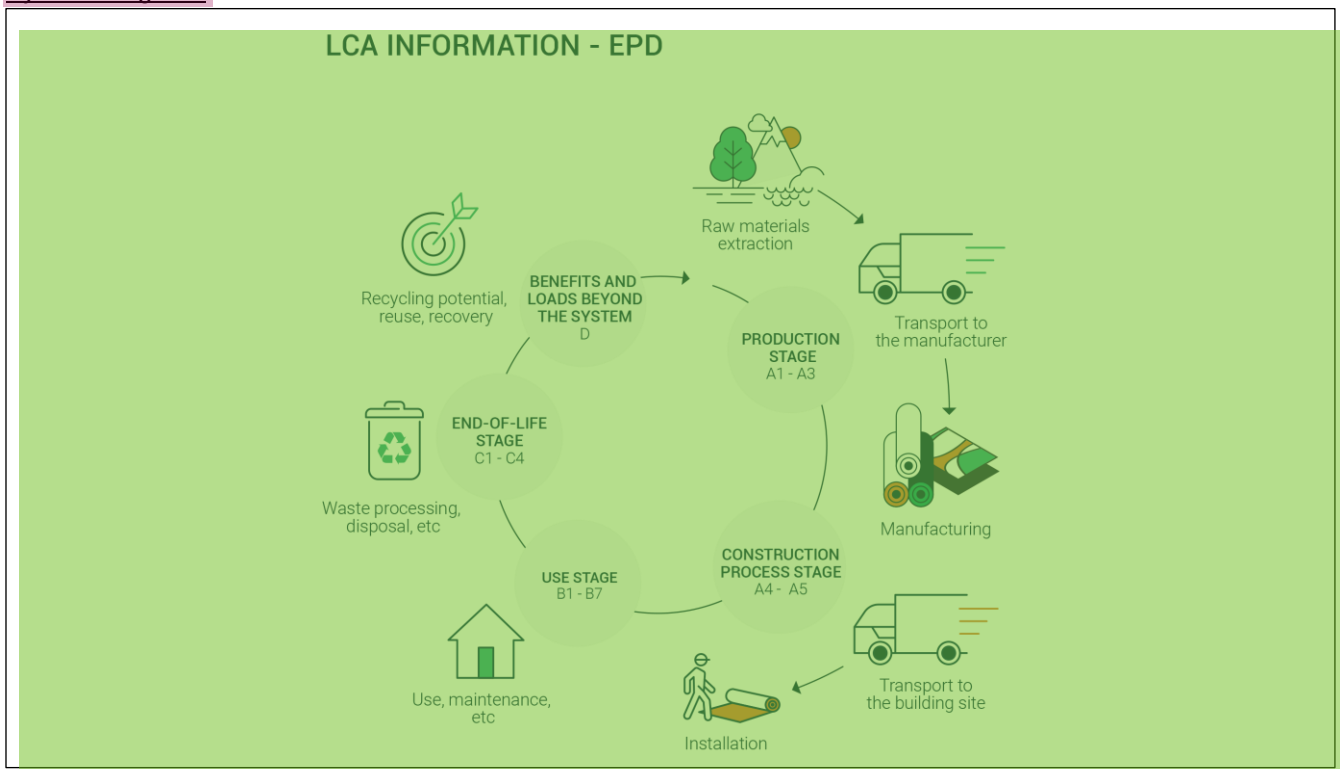
- A maximum of 1% of the total mass per unit process may be omitted.
- A maximum of 1% of the total renewable and non-renewable energy for a unit process may be omitted.
- A maximum of 5% of the total energy usage and mass per module may be omitted.

All input and output flows have been considered, including raw materials as per the product composition provided by the manufacturer and packaging of raw materials as well as the final product. Energy and water consumptions have also been considered at 100% according to the data provided.

Mass balance approaches (MBAs), to claim, for example, biobased, renewable, and/or recycled product content, are not applied.

EN 15804 reference package" based on EF 3.1 has been used.

System diagram:



More information: The product is classified in accordance with EN ISO 10874, EN 685 and in reference to the FCSS (Floor Covering Standard Symbols) to be installed in various areas of application, such as: healthcare, education, commercial, education. The area of use according to the ISO 10874 is very heavy (34) for commercial classification and heavy (43) for industrial classification

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	X	X	X	X	X	X	X	X	X	X	X	X
Geography	EU	EU	EU	EU	EU	-	EU	-	-	-	-	-	-	EU	EU	EU	EU
Specific data used	20%	50%	100%	100%	100%	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	15% - 23%																-
Variation – sites	22%			European average for Tarkett		-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product	Thickness(mm)	Weight (kg/m²)	Recycled content (%)
Acczent and Ruby	2.00 – 2.50	2.15 – 3.10	25 – 34
Declared Product (Topaz 70)	2.50E+00	2.90E+00	25

According to PCR 2019:14 v1.3.3 , several sets of results, reflecting different products, are not allowed to be declared in the same EPD. However, similar products from a single or several manufacturing sites covered by the same PCR and manufactured by the same company with the same major steps in the core processes may be grouped and thereby included in the same EPD;

The results of a worst case product (Topaz 70) will be declared in this EPD.

The variation in GWP-GHG results for modules A1-C4 between included products and the declared product goes from 15 – 23%.

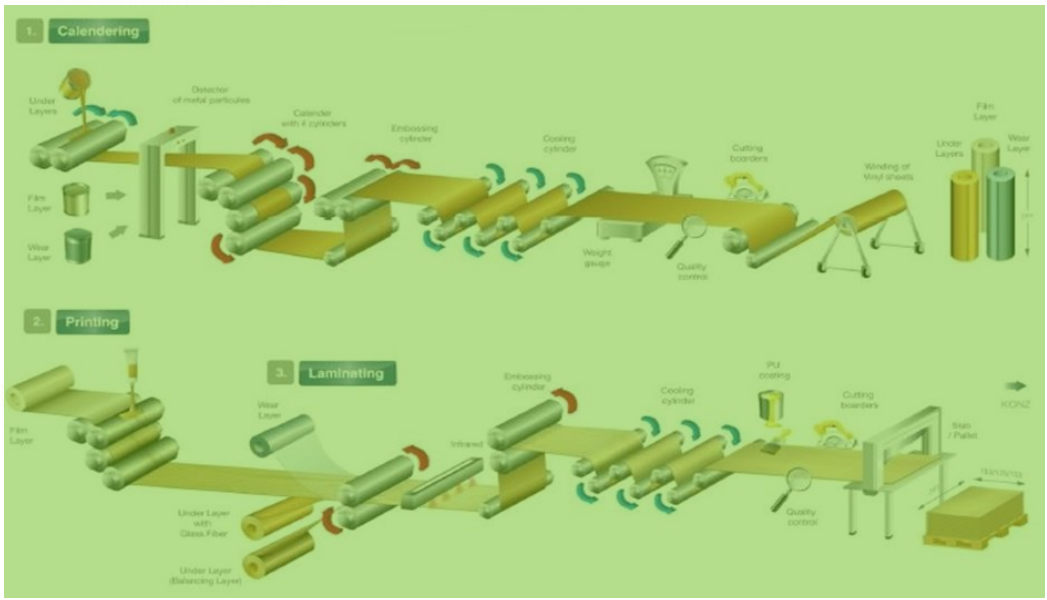
The components for Topaz 70 are detailed here:

Topaz 70				
Product components	**Weight, kg/m²**	**Post-consumer material, weight-%**	**Biogenic material, weight-% and kg C/kg**	
PVC Emulsion	9.57E-01	0%	0%	
Plasticizers	5.39E-01	0%	0%	
Epoxidised soya bean oil	6.80E-03	0%	83%	0.005
Mineral fillers	5.62E-01	0%	0%	
Stabilizer CaZn	1.59E-02	0%	0%	
Pigments	3.85E-02	0%	0%	
Surface Treatment	3.06E-02	0%	0%	
Additives	2.38E-02	0%	0%	
Glass reinforcement	1.18E-02	0%	0%	
Titanium Dioxide	1.36E-02	0%	0%	
Calendered underlay	7.00E-01	0%	0%	
TOTAL	2.90E+00	0%	2%	
Packaging materials	**Weight, kg/m²**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**	
Product Packaging Cardboard	6.65E-02	2.3%	0.0205	
Product Packaging PELD foil	5.76E-03	0.2%	-	
Product Packaging PP (Disc)	4.20E-06	0.0001%	-	
TOTAL	7.22E-02	2.5%	0.0205	

Product manufacturing

Production process

The following figures show the production process of heterogenous flooring :



Production waste

Waste type	Amount	Unit
Hazardous waste to incineration with energy recovery	8.40E-03	kg/m²
Non-hazardous waste to incineration	4.10E-03	kg/m²
Non-Hazardous waste to landfill	4.55E-04	kg/m²
Hazardous waste to recycling	2.40E-03	kg/m²
Non-hazardous waste to external recycling	2.00E-01	kg/m²
Hazardous wastewater to external treatment	8.57E-02	kg/m²

NB: Post manufacturing recycling concerns the recycling of the losses inside the plant production. Therefore, there is no end-of-life impact on losses (except the recycling preparation).

Electricity GWP-GHG

Plant	Ecoinvent Module	KgCO2eq/kWh
Clervaux	Electricity, medium voltage {LU}| market for electricity, medium voltage | Cut-off, U	3.97E-01
Sedan	Electricity, medium voltage {FR}| market for | Cut-off, U	7.93E-02

Health, safety and environmental aspects during production

Topaz 70 production site complies with the ISO 14001 Environmental Management System and the ISO 9001 Quality Management System.

Delivery and installation

Delivery

The average distribution distance between the factory and the installation site is 1007 km. It has been calculated considering the average distance between European countries where Tarkett is selling the Topaz 70 products and the factory plant in Clervaux (luxembourg). The distribution is made by truck.

Installation

The different parts of the flooring are cut to fit the surface to fit the surface to be covered and they are arranged together so that they can fit perfectly between them on the floor .The different parts of the flooring are glued on the subfloor then they are welded together.

Description	Amount	Unit
Electricity consumption	4.00E-02	kWh/m²
Acrylic adhesive	2.50E-01	kg/m²

Waste

During the installation approximately 10% of the flooring is lost as off-cuts. All flooring losses are sent to recycling. Thanks to the ReStart program. Tarkett offers to all of its customer flooring installers a free take-back system for installation off-cuts including equipment, logistics and recycling. This analysis therefore considers a recycling scenario of the offcut.

Packaging

50 % of the packaging materials goes to incineration and 50 % goes to landfill.

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 Heteregenous polyvinylchloride floor covering 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 ISO10874 in accordance with the product's classification. **The service lifetime recommended by Tarkett is 25 years**.

Cleaning and maintenance

Cleaning regime is based on traditional cleaning protocol integrating manual and mechanical operations. Depending on premises considered, these consumptions may vary. The considered regime fits high traffic areas. The maintenance scenario is :

- **Common maintenance : 2 times a week**
- **Periodic maintenance : once every 2 weeks**
- **Exceptionnal maintenance : 2 times a year**

Description	Amount	Unit
Electricity consumption	6.02E-02	kWh/year/m^2
Water consumption	5.05E+00	L/year/m^2
Detergent consumption	6.03E-02	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

Environmental impacts of landfilling are presented in module C. Tarkett also modeled an alternative scenario, incineration. The results can be found on page 17

Landfilling /L

Landfilling waste is still a proheminent waste management scenario. This option is however not recommanded by Tarkett. Environmental impacts of landfilling are presented in module **C/L**.

Incineration with energy recovery /I

Incineration with energy recovery is a rising waste management method in many of the countries in wich Topaz 70 is sold. While Tarkett wishes to recycle 100% of products sold, incineration with energy recovery is an alternative option if recycling is impossible. Environmental impacts of incineration with energy recovery are presented in module **C/I** on page 17

Benefits and loads beyond system boundary

Landfilling /L

Benefits accounted in this scenario exclusively come from installation offcuts recycling and are presented in **D/L**

Incineration with energy recovery /I

Benefits from installation offcuts recycling and incineration energy recovery are calculated in **D/I** on page 17.

Results

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Disclaimer : The results of modules A1-A3 should not be used without considering the results of module C.

Environmental Information

Potential environmental impact

Results per functional or declared unit in case of Landfill – Topaz 70																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1/1**	**C2/1**	**C3/1**	**C4/1**	**D/1**
GWP-total	kg CO_2 eq.	5,95E+00	5,62E-01	1,31E+00	0,00E+00	9,47E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,68E-02	0,00E+00	2,77E-01	-4,33E-01
GWP-fossil	kg CO_2 eq.	5,89E+00	5,62E-01	1,02E+00	0,00E+00	8,89E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,68E-02	0,00E+00	2,73E-01	-4,29E-01
GWP- biogenic	kg CO_2 eq.	4,33E-02	2,30E-04	2,79E-01	0,00E+00	8,10E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,85E-06	0,00E+00	3,83E-03	-3,12E-03
GWP- Luluc	kg CO_2 eq.	1,87E-02	2,69E-04	2,26E-03	0,00E+00	4,92E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,02E-06	0,00E+00	7,22E-06	-9,94E-04
ODP	kg CFC 11 eq.	2,79E-06	1,19E-08	2,86E-07	0,00E+00	2,88E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,56E-10	0,00E+00	9,28E-10	-2,76E-07
AP	mol H^+ eq.	2,97E-02	1,76E-03	4,87E-03	0,00E+00	5,50E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,34E-05	0,00E+00	2,11E-04	-2,61E-03
EP-freshwater	kg P eq	2,41E-03	3,84E-05	3,63E-04	0,00E+00	4,44E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,15E-06	0,00E+00	2,17E-06	-1,41E-04
EP-freshwater	kg PO4 eq	7,40E-03	1,18E-04	1,11E-03	0,00E+00	1,36E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,52E-06	0,00E+00	6,67E-06	-4,34E-04
EP-marine	kg N eq.	8,19E-03	6,02E-04	1,45E-03	0,00E+00	2,56E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,84E-05	0,00E+00	1,67E-03	-7,10E-04
EP-terrestrial	mol N eq.	6,56E-02	6,35E-03	1,06E-02	0,00E+00	1,26E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,94E-04	0,00E+00	9,37E-04	-5,67E-03
POCP	kg NMVOC eq.	2,18E-02	2,64E-03	4,01E-03	0,00E+00	3,34E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,98E-05	0,00E+00	4,08E-04	-1,82E-03
ADP-minerals&metals*	kg Sb eq.	6,88E-05	1,77E-06	1,03E-05	0,00E+00	6,19E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,27E-08	0,00E+00	6,32E-08	-6,56E-06
ADP-fossil*	MJ	1,40E+02	7,77E+00	2,31E+01	0,00E+00	1,81E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,32E-01	0,00E+00	7,33E-01	-1,09E+01
WDP	m^3	6,92E+00	3,11E-02	1,01E+00	0,00E+00	2,12E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,26E-04	0,00E+00	3,20E-03	-6,62E-01
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															

Environmental Information

Potential environmental impact

Results per functional or declared unit in case of Landfill – Topaz 70																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1/1**	**C2/1**	**C3/1**	**C4/1**	**D/1**
PERE	MJ	1,77E+01	1,21E-01	2,23E+00	0,00E+00	4,91E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,60E-03	0,00E+00	3,17E-02	-1,41E+00
PERM	MJ	6,96E-01	0,00E+00	6,96E-02	0,00E+00	9,05E-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	-4,90E-03
PERT	MJ	1,84E+01	1,21E-01	2,30E+00	0,00E+00	5,81E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,60E-03	0,00E+00	3,17E-02	-1,41E+00
PENRE	MJ	1,40E+02	7,77E+00	2,31E+01	0,00E+00	1,81E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,32E-01	0,00E+00	7,33E-01	-1,10E+01
PENRM	MJ.	5,04E+00	0,00E+00	5,04E-01	0,00E+00	5,08E-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	-1,16E-03
PENRT	MJ	1,45E+02	7,77E+00	2,36E+01	0,00E+00	2,31E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,32E-01	0,00E+00	7,33E-01	-1,10E+01
SM	kg	4,19E-01	0,00E+00	4,19E-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	-3,32E-01
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	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	-5,24E-01	-3,70E-03	-7,58E-02	0,00E+00	-8,15E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,10E-04	0,00E+00	6,32E-04	2,66E-02
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															

Waste production and output flows

Waste production

Results per functional or declared unit in case of Landfill – Topaz 70																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1/1**	**C2/1**	**C3/1**	**C4/1**	**D/1**
Hazardous waste disposed	kg	2,22E-01	7,42E-03	3,49E-02	0,00E+00	3,69E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,21E-04	0,00E+00	8,44E-04	-1,84E-02
Non-hazardous waste disposed	kg	2,49E+00	4,43E-01	6,24E-01	0,00E+00	4,13E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,32E-02	0,00E+00	3,16E+00	-2,13E-01
Radioactive waste disposed	kg	2,57E-04	2,53E-06	3,74E-05	0,00E+00	5,02E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,55E-08	0,00E+00	4,16E-07	-1,51E-05

Output flows

Results per functional or declared unit in case of Landfill – Topaz 70																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1/1**	**C2/1**	**C3/1**	**C4/1**	**D/1**
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	9,48E-01	0,00E+00	3,85E-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	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	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	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
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	0,00E+00

Additional indicator

Results per functional or declared unit in case of Landfill – Topaz 70																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1/1**	**C2/1**	**C3/1**	**C4/1**	**D/1**
GWP-fossil	kg CO_2 eq.	5,91E+00	5,62E-01	1,03E+00	0,00E+00	9,39E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,68E-02	0,00E+00	2,73E-01	-4,30E-01

[1] GWP-GHG is the sum of GWP-Fossil and GWP-LULUC indicators

Variability of LCA results

The declared environmental impacts are the impacts of the worst case product. The data was collected for the two sites of production. The variability of the results was calculated by doing a sensitivity analysis as recommended by the EN15804+A2/CN.

Variation of environmental impacts for all indicators greater than 10% for A1-C modules

Impact category	min	max
Climate change - total	15%	23%
Climate change - fossil	15%	23%
Climate change - biogenic	0%	20%
Climate change - land use and change	-46%	15%
Ozone depletion	31%	45%
Acidification	15%	31%
Eutrophication, freshwater	16%	53%
Eutrophication, marine	-16%	24%
Eutrophication, terrestrial	-43%	19%
Photochemical ozone formation	-18%	25%
Resource use, minerals and metals	26%	38%
Resource use, fossils	13%	29%
Water use	24%	41%
Particulate matter	25%	60%
Ionising radiation	-61%	21%
Ecotoxicity, freshwater	17%	31%
Human toxicity, cancer	-8%	33%
Human toxicity, non-cancer	12%	27%
Land use	2%	20%
Renewable primary energy excl. RM	3%	31%
Renewable primary energy used as RM	2%	32%
Total renewable primary energy	4%	30%
Non renewable primary energy excl. RM	13%	29%
Non renewable primary energy used as RM	0%	89%
Total non renewable primary energy	15%	28%
Use of secondary material	-154%	0%
Net use of fresh water	26%	38%
Hazardous waste disposed	2%	30%
Non hazardous waste disposed	6%	21%
Radioactive waste disposed	-47%	25%
Materials for recycling	-6%	6%

References

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

Additional information – Potential impacts and flows in case of incineration.

Results per functional or declared unit in case of incineration – Topaz 70						
Indicator	**Unit**	**C1/2**	**C2/2**	**C3/2**	**C4/2**	**D/2**
GWP-total	kg CO_2 eq.	0,00E+00	5,80E-03	5,67E+00	2,46E-03	-1,84E+00
GWP-fossil	kg CO_2 eq.	0,00E+00	5,80E-03	5,62E+00	2,46E-03	-1,83E+00
GWP- biogenic	kg CO_2 eq.	0,00E+00	2,36E-06	4,82E-02	2,08E-06	-6,07E-03
GWP- Luluc	kg CO_2 eq.	0,00E+00	2,76E-06	2,52E-03	4,59E-07	-1,99E-03
ODP	kg CFC 11 eq.	0,00E+00	1,23E-10	8,01E-07	8,03E-11	-3,32E-07
AP	mol H^+ eq.	0,00E+00	1,84E-05	9,59E-03	1,50E-05	-7,34E-03
EP-freshwater	kg P eq	0,00E+00	3,95E-07	6,86E-04	1,08E-07	-5,94E-04
EP-freshwater	kg PO_4^{3-} eq	0,00E+00	1,21E-06	2,11E-03	3,32E-07	-1,82E-03
EP-marine	kg N eq.	0,00E+00	6,33E-06	2,32E-03	6,52E-06	-1,51E-03
EP-terrestrial	mol N eq.	0,00E+00	6,69E-05	2,34E-02	6,99E-05	-1,36E-02
POCP	kg NMVOC eq.	0,00E+00	2,75E-05	6,89E-03	2,77E-05	-5,02E-03
ADP-minerals&metals*	kg Sb eq.	0,00E+00	1,82E-08	2,03E-05	2,45E-09	-7,88E-06
ADP-fossil*	MJ	0,00E+00	8,01E-02	2,02E+01	5,88E-02	-3,24E+01
WDP	m^3	0,00E+00	3,19E-04	3,47E+00	2,09E-04	-7,69E-01
Results per functional or declared unit in case of incineration – Topaz 70						
Indicator	**Unit**	**C1/2**	**C2/2**	**C3/2**	**C4/2**	**D/2**
PERE	MJ	0,00E+00	1,24E-03	2,39E+00	1,17E-03	-3,09E+00
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,90E-03
PERT	MJ	0,00E+00	1,24E-03	2,39E+00	1,17E-03	-3,10E+00
PENRE	MJ	0,00E+00	8,01E-02	2,02E+01	5,88E-02	-3,23E+01
PENRM	MJ.	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,16E-03
PENRT	MJ	0,00E+00	8,01E-02	2,02E+01	5,88E-02	-3,23E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,48E-01
RSF	MJ	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
FW	m^3	0,00E+00	-3,81E-05	2,85E-02	5,42E-05	2,90E-01
Results per functional or declared unit in case of incineration – Topaz 70						
Indicator	**Unit**	**C1/2**	**C2/2**	**C3/2**	**C4/2**	**D/2**
Hazardous waste disposed	kg	0,00E+00	7,62E-05	6,95E-01	3,08E-05	-3,34E-02
Non-hazardous waste disposed	kg	0,00E+00	4,55E-03	1,28E+00	4,09E-01	-4,13E-01
Radioactive waste disposed	kg	0,00E+00	2,60E-08	5,73E-05	1,27E-08	-7,49E-05
Results per functional or declared unit in case of incineration – Topaz 70						
Indicator	**Unit**	**C1/2**	**C2/2**	**C3/2**	**C4/2**	**D/2**
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	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	4,76E-01	0,00E+00	0,00E+00
Exported energy. electricity	MJ	0,00E+00	0,00E+00	3,58E+00	0,00E+00	0,00E+00
Exported energy. thermal	MJ	0,00E+00	0,00E+00	1,05E+01	0,00E+00	0,00E+00

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