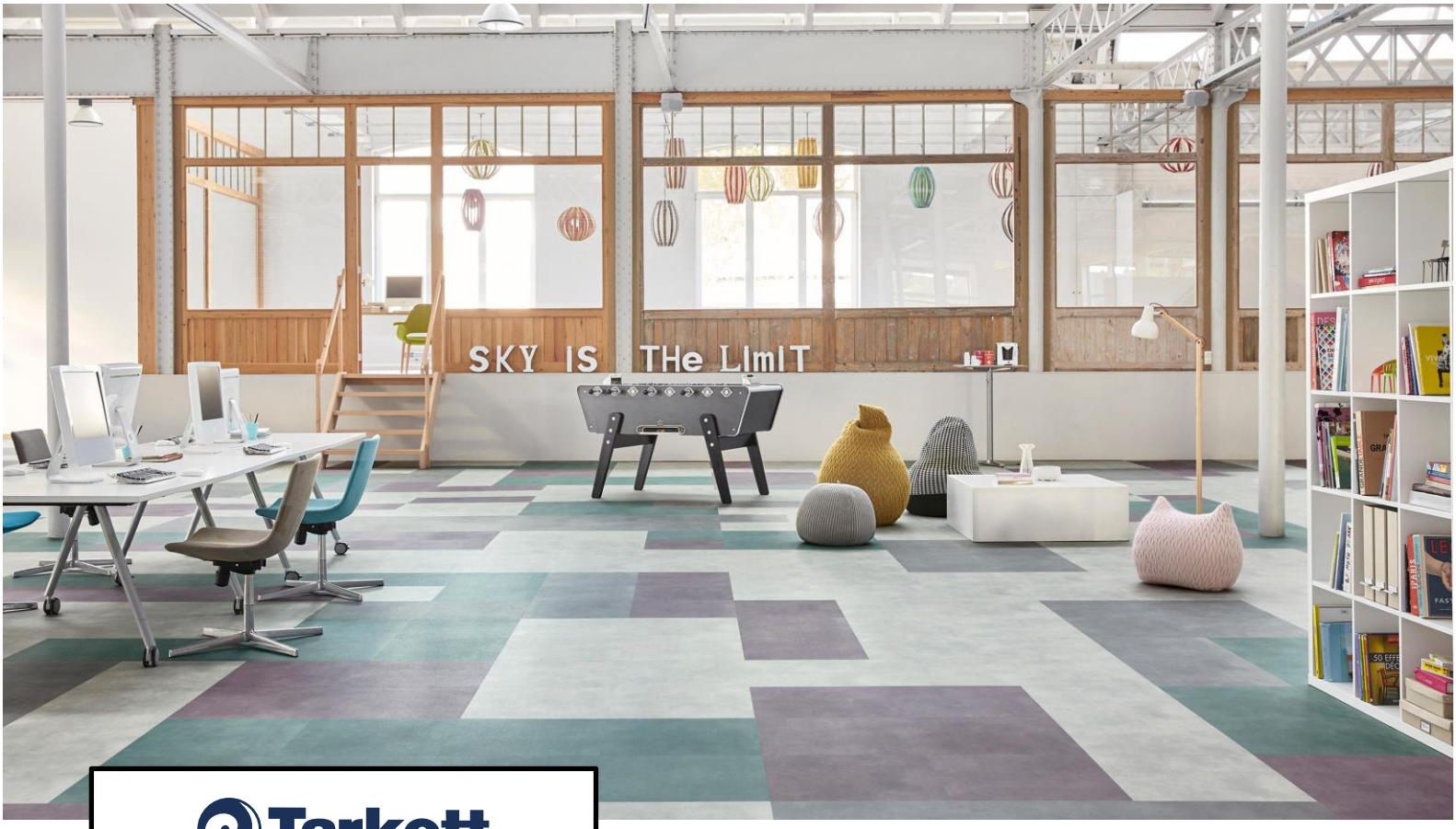
Environmental Product Declaration

In accordance with ISO 14025, EN 15804+A1 and EN 16810 for:

LVT Loose-lay modular flooring - TARKETT

Programme:	The International EPD® System www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-01352
Publication date:	2018-12
Validity date:	2023-12
Geographical scope:	Europe



Tarkett

General information

Information about the organization

Owner of the EPD: Tarkett France. Axel ROY, +33 (0)141 204 074, axel.roy@tarkett.com, Tarkett La Défense, 1 Terrasse Bellini 92400 Paris
Description of the organisation: ISO 9001, ISO 14001, ISO 50001, WCM manufacturing site
Name and location of production site: Sedan, France

About the company

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 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.

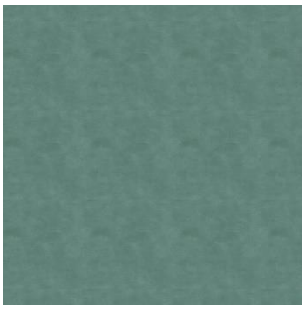
Product information

Product name: iD Square

Product identification: iD Square is a modular heterogeneous floor covering (EN 10582 and EN ISO 10874).

Product description:

iD Square has the largest variety of designs & colours on the market in 3 different formats: 50 x 50 cm in classic and timeless designs, 66 x 66 cm in modern designs and 25 x 100 cm wood planks. The colours and formats can be combined for greater design flexibility to create inspiring transitions that reflect the image and values of your company. With the added benefit of acoustic performance, iD Square also encourages serenity and efficiency at work. Treated with our Top Clean surface protection for easy maintenance and extra resistance to scuffs, scratches and stains.
The following figure shows an example of LVT Loose-lay flooring:



iD Square flooring illustration

UN CPC code: APE/NAF - 2223Z

Geographical scope: Europe

Range of application

The area of use according to the ISO 10874 is very heavy (34) for commercial classification and heavy (23) for domestic classification.

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:

2017

Database(s) and LCA software used:

SimaPro 8.5

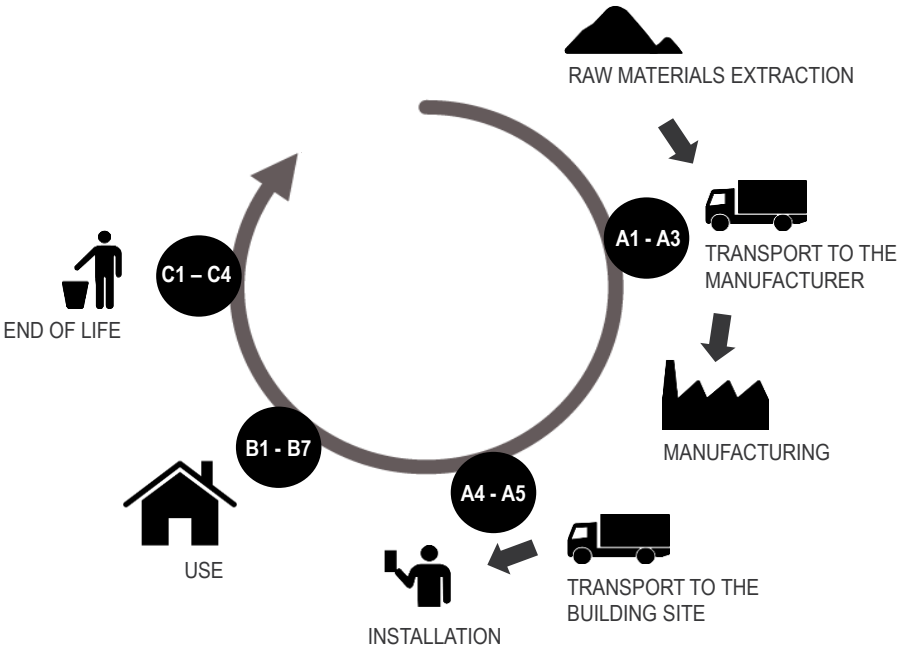
Description of system boundaries:

Cradle to grave

System boundaries

The system boundary is based on the EN 15804 description.
Production stage: A1 – A3: includes the provision of all raw materials, transport to the production site and energy consumption during the manufacturing of the product, packaging of final product, the different air emissions, as well as processing of waste generated by the factory.
Construction stage: A4 – A5: includes the transport from the factory to the final customer, the installation of the product, as well as all consumables and energy required and processing of waste generated during the installation.

Use stage B1 – B7: includes provision and transport of all materials, products and services related to the use phase of the product, as well as their related energy and water consumption, and the processing of any resulting waste.
End of life stage C1 – C4: includes provision and transport of all materials, products and services related to the end of life phase of the product, including energy and water consumption, as well as the end of life processing of the product.



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Included/excluded life stages

	Production Stage			Construction Process Stage		Use Stage							End-of-Life Stage			
	Raw material supply (extraction, processing, recycled material)	Transport to manufacturer	Manufacturing	Transport to building site	Installation into building	Use / application	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / demolition	Transport to EoL	Waste processing for reuse, recovery or recycling	Disposal
Modules	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
Accounted for:	X	X	X	X	X	MND	X	MND	MND	MND	MND	MND	X	X	X	X

X Module included in the study
MND : Module not declared

Use stage: Floor coverings do not contribute to modules B1 and B3 to B7 according to the standard EN 16810.

Cut-off criteria

The cut-off criteria shall be 1% of renewable and non-renewable primary energy usage and 1% of the total mass of that unit process. The total neglected input flows per module shall be a maximum of 5% of energy usage and mass.
For this study, all input and output flows have been considered at 100%, including raw materials as per the product composition provided by the manufacturer and packaging of raw materials as well as the final product.

LCA data

As a general rule, specific data derived from specific production processes or average data derived from specific production processes have been used as the first choice as a basis for calculating an EPD.
To model the life cycle of the product in question, the software SimaPro 8.5, developed by PRé, has been used in conjunction with the LCA database ecoinvent v3.4.

Data quality

The objective of this evaluation is to evaluate the environmental impacts generated by the product floor covering LVT Loose-lay throughout its entire life cycle. To this end, ISO 14040, ISO 14044 and EN 15804 have been met regarding the quality of data on different following criteria:

The time factor, the life cycle inventory data used come from:

- Data collected specifically for this study on Tarkett sites. Data sets are based on 1 year averaged data.

- In the absence of collected data, generic data from the ecoinvent V3.4 cut-off by classification database. This is regularly updated and is representative of current processes

Technological Coverage

- Tarkett technologies used for the manufacture methods of the product.
- European technology in the case of use of generic data.

Geographical Coverage

- Data come from production site of Tarkett
- The generic data come from the ecoinvent database, representative of the European processes.

Allocation

The overall values for the factory's material and energy consumptions during a period of one year have been divided by the annual production of each product to supply a value per square meter of flooring produced. All factory data are measured in square meters, and it is assumed that the process consumptions are governed by area of flooring processed rather than mass.

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.

Content declaration

Product

Product	Thickness (mm)	Mass (kg/m²)
iD Square	4.5	5.20

Quantity		iD Square	Unit/FU
A1 - Raw Materials	Polyvinyl chloride	2.16E+00	kg
	DINCH	4.68E-01	kg
	Epoxidised soya bean oil	2.65E-02	kg
	Stabilizers	5.96E-02	kg
	Calcium Carbonate	1.79E+00	kg
	Titanium Dioxide	2.25E-02	kg
	Pigments	2.75E-02	kg
	Glass veil Reinforcement	4.00E-02	kg
	PUR surface treatment	1.00E-01	kg

The recycled content in the products is 3% (post-industrial PVC).

Product manufacturing

Production process

The production of the heterogeneous poly (vinyl chloride) floor covering is divided into the following stages:
- Calendering: Rolls are then calendered to get the desired shape.
- Printing: Rolls are print at the desired characteristics.
- Laminating:Rolls are laminated to reduce the thickness
- Enduction.
- Packaging: The final product is placed into cardboard cases with discs and plastic hangers positioned at the ends. The cardboard cases are then wrapped in plastic film.

Production waste

Waste type	Amount	Unit
Hazardous waste to external recycling	4.86E-02	kg/m^2
Hazardous waste-water to external treatment	2.88E-01	kg/m^2
Non-hazardous waste to external landfill	2.48E-02	kg/m^2
Non-hazardous waste to external recycling	8.63E-01	kg/m^2

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

Health, safety and environmental aspects during production

LVT Loose-lay production site complies with the ISO 14001 Environmental Management System and the ISO 9001 Quality Management System.

Packaging

Type	Unit	Quantity
Product Packaging Cardboard	kg/m^2 of product	4.55E+02
Product Packaging PEHD	kg/m^2 of product	1.90E+02
Product Packaging PP	kg/m^2 of product	8.50E+01

Delivery and installation

Delivery

The average distribution distance between the factory and the installation site is 800 km. It has been calculated considering the average distance between European countries where Tarkett is selling the LVT Loose-lay products and the factory plant in Sedan (France). The distribution is made by truck.

Installation

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

Description	Amount	Unit
Electricity consumption	2.46E-02	kWh/m²

Waste

During the installation approximately 10% of the flooring is lost as off-cuts. All flooring losses are sent to recycling.

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 heterogeneous poly (vinyl chloride) floor coverings 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 20 years for domestic use and 10 years for commercial and industrial use.

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.

The maintenance program is modeled for 1 year of cleaning. Regional data have been used (water and electricity from Europe) and are assumed to be representative of the installation sites on the product market. The detergent is assumed to be composed of soap. The manufacturer's maintenance scenario is as following:

- Common maintenance : 2 cleaning / week
- Periodic maintenance : 2 scrubbing / year

Description	Amount	Unit
Electricity consumption	2.40E-01	kWh/year/m^2
Water consumption	7.00E+00	L/year/m^2
Detergent consumption	9.20E-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

For the purpose of this LCA, it has been assumed that 100% of the product is sent to landfill at the end of its useful life. The transport between construction site and landfill facility is by truck, with an estimated distance of 30 km (according to the FDP01-015).

Environmental performance

Potential environmental impact

PARAMETER	UNIT	Product stage	Construction stage		Use stage							End of life stage			
		Total Production	Transport	installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
Global Warming	kg CO2 eq	1,22E+01	3,02E-01	1,31E+00	MND	3,55E-01	MND	MND	MND	MND	MND	0,00E+00	2,54E-02	0,00E+00	3,22E-01
Ozone Depletion	kg CFC-11 eq	6,77E-07	5,61E-08	7,68E-08	MND	2,65E-08	MND	MND	MND	MND	MND	0,00E+00	4,71E-09	0,00E+00	1,35E-08
Acidification of soil and water	kg SO2 eq.	4,32E-02	9,58E-04	4,54E-03	MND	1,47E-03	MND	MND	MND	MND	MND	0,00E+00	8,09E-05	0,00E+00	2,99E-04
Eutrophication	kg PO4--- eq	9,36E-03	1,58E-04	9,94E-04	MND	8,54E-04	MND	MND	MND	MND	MND	0,00E+00	1,34E-05	0,00E+00	1,11E-04
Photochemical ozone creation	kg ethylene	1,01E-02	1,56E-04	1,05E-03	MND	2,01E-04	MND	MND	MND	MND	MND	0,00E+00	1,32E-05	0,00E+00	1,00E-04
Depletion of abiotic resources - elements	kg antimony	6,54E-05	9,40E-07	6,68E-06	MND	8,80E-07	MND	MND	MND	MND	MND	0,00E+00	7,89E-08	0,00E+00	6,63E-08
Depletion of abiotic resources - fossil	MJ. net CV	1,99E+02	4,55E+00	2,07E+01	MND	2,35E+00	MND	MND	MND	MND	MND	0,00E+00	3,82E-01	0,00E+00	1,16E+00

Use of resources

PARAMETER	UNIT	Product stage	Construction stage		Use stage							End of life stage			
		Total Production	Transport	Installation	Use	Maintenance	Repair	Replacement	refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal
		A1-A3	A4	A5	B1	B2.	B3	B4	B5	B6	B7	C1	C2.	C3	C4
Renewable primary energy excl. RM	MJ. net CV	2,09E+01	6,78E-02	2,14E+00	MND	8,01E-01	MND	MND	MND	MND	MND	0,00E+00	5,69E-03	0,00E+00	3,68E-02
Renewable primary energy used as RM	MJ. net CV	1,79E+00	0,00E+00	1,79E-01	MND	1,41E+00	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total renewable primary energy	MJ. net CV	2,27E+01	6,78E-02	2,32E+00	MND	2,21E+00	MND	MND	MND	MND	MND	0,00E+00	5,69E-03	0,00E+00	3,68E-02
Non renewable primary energy excl. RM	MJ. net CV	1,97E+02	4,66E+00	2,07E+01	MND	3,67E+00	MND	MND	MND	MND	MND	0,00E+00	3,91E-01	0,00E+00	1,24E+00
Non renewable primary energy used as RM	MJ. net CV	5,99E+01	0,00E+00	5,99E+00	MND	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total non renewable primary energy	MJ. net CV	2,57E+02	4,66E+00	2,66E+01	MND	3,67E+00	MND	MND	MND	MND	MND	0,00E+00	3,91E-01	0,00E+00	1,24E+00
Use of secondary material	kg	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels	MJ. net CV	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of non renewable secondary fuels	MJ. net CV	2,09E+01	6,78E-02	2,14E+00	MND	8,01E-01	MND	MND	MND	MND	MND	0,00E+00	5,69E-03	0,00E+00	3,68E-02
Net use of fresh water	m3	1,79E+00	0,00E+00	1,79E-01	MND	1,41E+00	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Waste production and output flows

PARAMETER	UNIT	Product stage	Construction stage		Use stage							End of life stage			
		Total Production	Transport	Installation	Use	Maintenance	Repair	Replacement	refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
Hazardous waste disposed	kg	2,75E-01	2,75E-03	2,95E-02	MND	1,78E-02	MND	MND	MND	MND	MND	0,00E+00	2,31E-04	0,00E+00	1,07E-03
Non hazardous waste disposed	kg	2,33E+00	2,43E-01	3,13E-01	MND	9,75E-02	MND	MND	MND	MND	MND	0,00E+00	2,04E-02	0,00E+00	5,21E+00
Radioactive waste disposed	kg	5,51E-04	3,20E-05	6,15E-05	MND	1,93E-05	MND	MND	MND	MND	MND	0,00E+00	2,69E-06	0,00E+00	8,20E-06
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	9,11E-01	0,00E+00	6,11E-01	MND	0,00E+00	MND	MND	MND	MND	MND	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	MND	0,00E+00	MND	MND	MND	MND	MND	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	MND	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy (steam)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00

MND: Module not declared

Programme-related information and verification

The EPD owner has the sole ownership, liability and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and EN 16810.

Programme:	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com
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Product Category Rules:	PCR 2012:01 version 2.2 and Sub-PCR-F Resilient. textile and laminate floor coverings (EN 16810)
Product group classification:	UN CPC APE/NAF - 2223Z
Reference year for data:	2017
Geographical scope:	Europe

CEN standard EN 15804 and EN 16810 serve as the Core Product Category Rules (PCR)
Product category rules (PCR): EN 15804 and EN 16810
Independent third-party verification of the declaration and data. according to ISO 14025:2006: ☐ EPD process certification ■ EPD verification
Third party verifier: Damien PRUNEL. BUREAU VERITAS LCIE
Procedure for follow-up of data during EPD validity involves third party verifier: ☒ Yes ☐ No

References

General Programme Instructions of the International EPD® System. Version 3.0.

PCR 2012:01 version 2.2 and Sub-PCR-F Resilient textile and laminate floor coverings (EN 16810).

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