ENVIRONMENTAL PRODUCT DECLARATION

ASPECTA®TEN

MULTILAYER MODULAR FLOORING (MMF)

Aspecta® Ten: Collection: Fulton Hyde Color: Burnt Caramel

ASPECTA

In business for over one hundred years, Aspecta is devoted to leading the industry in Luxury Vinyl Tile (LVT) products. With the frequent introduction of new products, manufacturing methods and novel designs, the Aspecta brand of products represents the largest assortment of LVT in the market today.

Aspecta offers healthy, high-performing products based on biophilic designs inspired by nature. The company focuses on lowering the environmental footprint of its raw materials, products and operations. It embraces product transparency and continually strives to improve the material health of its products and contribute positively to indoor air quality. As a longtime leader in sustainability, Aspecta fosters collaborative partnerships to encourage, educate and motivate others to invest in a restorative ecosystem.

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION UL.COM/EPD

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According to ISO 14025 and EN 15804

This declaration is an Environmental Product Declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

PROGRAM OPERATOR	UL Environment
DECLARATION HOLDER	Metroflor
DECLARATION NUMBER	4788116795.103.1
DECLARED PRODUCT	Aspecta Ten Multilayer Modular Flooring
REFERENCE PCR	IBU Part B PCR for Floor Coverings (2016)
DATE OF ISSUE	April 11, 2018
PERIOD OF VALIDITY	5 Years
CONTENTS OF THE DECLARATION	Product definition and information about building physics Information about basic material and the material's origin Description of the product's manufacture Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications

The PCR review was conducted by:	Institut Bauen und Umwelt e.V (IBU)
	PCR Review Panel
	PCR tested and approved by the SVR
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories ☐ INTERNAL ☒ EXTERNAL	Grant R. Martin
	Grant R. Martin, UL Environment
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Thomas P. Gloria
	Thomas P. Gloria, Industrial Ecology Consultants

This EPD conforms with EN 15804

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Product Description

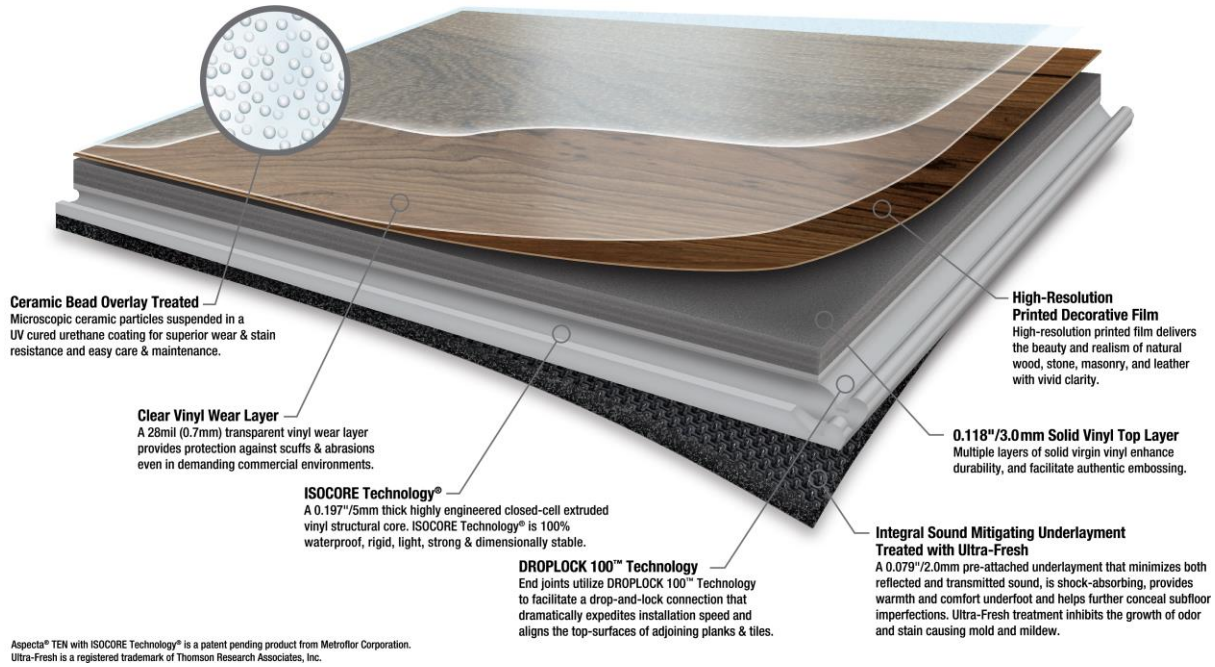
Product

The Aspecta® Ten product line has over 30 trendsetting planks and tiles in styles and colors to suit every design palette. Unique surface embossing patterns create authentic, eye-catching textures that enhance the natural details of the product. Made using the latest state-of-the-art technology, products are durable, long lasting and have a softer, warmer feel than traditional vinyl products. Aspecta® Ten is easy to install and 100% waterproof. It has a 28mil wear layer and a 10mm gauge that includes ISOCORE Technology®, a strong and rigid, closed-cell extruded structural vinyl core. Its top solid vinyl layer has a Ceramic Bead (CB) urethane finish for extra toughness. The pre-attached underlayment and Droplock 100™ technology allow for quick and easy installation. Aspecta® Ten is backed by a 25-year, non-prorated limited commercial warranty and an unparalleled 10-year, prorated labor warranty.

This Environmental Product Declaration (EPD) encompasses all sizes, colors and styles of the Aspecta® Ten product line. The products meet all industry performance standards and are phthalate-free, formaldehyde-free and are made from 100% virgin vinyl. For detailed Aspecta® Ten product information and technical specifications, please visit http://www.aspectaflooring.com.

Aspecta® Ten

Multilayer Modular Flooring



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Range of Applications

Aspecta® Ten products are designed to be used in commercial applications, such as: healthcare, education, hospitality, corporate and retail. It is especially recommended for hotels, schools, offices and renovation projects.

Product Standards and Performance

PHYSICAL PROPERTIES – PLANK AND TILE

Construction	5.0 mm (0.197”) ISOCORE Technology® 3.0mm (0.118”) Luxury Vinyl Tile (LVT) 2.0mm (0.079”) IXPE with Ultra-Fresh®
Finish	Urethane Coating with Ceramic Bead (CB) Particles
Size	8.66" x 59.45" (220mm x 1510mm), 8.62" x 71.61" (219mm x 1819mm) and 17.64" x 35.67" (448mm x 906mm)
Gauge	10.0mm (0.394”)
Wear Layer	28mil (0.7mm)
Installation	Clic Locking Technology facilitates a fast, floating floor installation
Edge	Micro-Bevel Edge
Warranty	Product: 25-year non-prorated limited warranty Labor: 10-year prorated limited warrany

The Aspecta® Ten products considered in this EPD meet or surpass the following Technical Specifications:

- EN 16511 – Loose-laid panels - Semi rigid multilayer modular floor covering (MMF) panels with wear resistant top layer: The products are classified as Commercial - Very Heavy (Class 34).
- EN 14041 – Resilient, textile and laminate floor coverings - Essential Characteristics:
  - CE Certification under EN 14041.
  - B_{fl}-s1 per EN 13501-1 (Fire classification of construction products and building elements, Part 1: Classification using data from reaction to fire tests) when tested in accordance with EN ISO 9239-1 (Reaction to fire tests for floorings, Part 1: Determination of the burning behaviour using a radiant heat source) and EN ISO 11925-2 (Reaction to fire tests — Ignitability of products subjected to direct impingement of flame, Part 2: Single-flame source test).
  - Content of pentachlorophenol (PCP) < 5ppm per EN 14041.
  - Class E1 Formaldehyde Emission when tested in accordance with EN 717-1, Wood-based panels - Determination of formaldehyde release (Part 1: Formaldehyde emission by the chamber method).
  - Class DS Slip Resistance when tested in accordance with EN 13893, Resilient, laminate and textile floor coverings — Measurement of dynamic coefficient of friction on dry floor surfaces.

- US Fire & Smoke Testing
  - Class I per the 2018 International Building Code and NFPA 101 Life Safety Code when tested in accordance with ASTM E648/NFPA 253, Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
  - ≤450 when tested in accordance with ASTM E662/NFPA 258, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.

Please refer to the Aspecta® website (www.aspectaflooring.com) for additional Technical Data about these products.

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Accreditations

FloorScore® Indoor Air Quality Certification

Gold Level Certification NSF/ANSI 332 Sustainability Assessment for Resilient Floor Coverings

Declare℠ Product Label

Health Product Declaration 2.1

Eurofins Indoor Air Comfort - Gold Certification

Delivery Status

Aspecta® Ten products should be acclimated and stored between 50°-100°F (10°-38°C) and 35%-85% RH for a minimum of 48 hours prior to installation. Products should be installed on a clean, dry, properly prepared floor by a qualified installer. Detailed installation instructions are available at http://www.aspectaflooring.com.

Base Materials/ Ancillary Materials

There are no chemicals present in the product that are listed in the Candidate List of Substances of Very High Concern for Authorization (SVHC).

Material Content

The base materials for Aspecta® Ten products are shown below.

MATERIAL CONTENT ASPECTA® TEN

Component	Material	Amount	Availability			Origin of raw material
			Renewable	Non-Renewable	Recycled	
Resin	Polyvinyl Chloride (100% virgin)	29%		Fossil limited		Global
Filler	Calcium Carbonate	44%		Mineral abundant		Global
Plasticizer	DOTP	7%		Fossil limited		China
Additives	Various	21%		Fossil limited		Global

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Production of Main Materials

Polyvinyl Chloride (PVC) – (CAS# 9002-86-2) Ethylene derived from petroleum or natural gas is combined with chlorine from salt to produce Ethylene Dichloride (EDC). The EDC is further processed into a gas called Vinyl Chloride Monomer (VCM). During polymerization, the VCM molecules form chains and are converted into a fine white powder, PVC resin.

Calcium Carbonate – (CAS# 471-34-1) calcium carbonate or limestone is mined from the earth and used as an inert filler.

Dioctyl terephthalate (DOTP) – (CAS# 6422-86-2) is prepared by the reaction of dimethyl terephthalate and 2-ethylhexanol.

Manufacture

The manufacturing stage includes raw material extraction, supplier processing, delivery, flooring manufacturing and product packaging. The mixing of materials, laminating of layers, and packaging of the final product are performed at a facility in China.

Energy resources used in the manufacturing process include electricity, natural gas, and steam. The following are included in the manufacturing stage:

- Extraction and processing of raw materials.
- Processing of recycled raw material from previous product system.
- Generation of energy and water inputs
- Waste creation and processing, including packaging waste.
- Processing of secondary materials
- Energy Recovery (not applicable)
- Transportation up to factory gate.
- Manufacturing of products and co-products
- Manufacturing and use of packaging
- Production of ancillary materials (not applicable)

Environment and Health During Manufacturing

Aspecta complies with all required environmental, health and safety regulations. Progress is measured and documented in the company's continual improvement program focused on safety, the environment and quality. The manufacturing facility is a "zero waste" facility. Plant waste is ground, processed and used as fuel to produce steam. No process water is used and cooling water is continually recycled. Product trim waste is recycled back into the product. The manufacturing facility carries the following ISO certifications:

- ISO 9001 Quality Management
- ISO 14001 Environmental Management

Delivery

The shipping and transport of products to the jobsite was modeled based on the company's actual production and global customer base.

Installation

Aspecta® Ten is installed as a floating floor. No adhesive is required. It is assumed that 4.5% of the installation waste is disposed of in the installation phase.

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Packaging

The multilayer modular flooring tiles are packaged using cardboard, paper and polyethylene film and then transported to the installation site.

Conditions of use

The table below references general maintenance practices used for resilient flooring including the amount and frequency of water and chemicals used for the purposes of this LCA study. Recommended maintenance includes daily vacuuming or dust mopping and weekly damp mopping with a pH neutral cleaner. Aspecta® Ten has a “no wax” finish, therefore, no floor finish or floor wax is required. Aspecta® Ten’s recommended maintenance instructions can be found at http://www.aspectaflooring.com.

Product Maintenance

Name	ASPECTA® TEN	Unit
Dust mop frequency	daily	-
Damp mop / neutral cleaner	weekly	-
Spray buff / finish restorer	monthly	-
Detergent use	0.124	$L/m^2/yr$
Electricity use	0.025	$kWh/m^2/yr$
Finish use	0.22	$L/m^2/yr$
Finish Remover use	0.041	$L/m^2/yr$
Water use	6.2	$L/m^2/yr$

Environment and Health During Use

Aspecta® Ten flooring products are certified in the FloorScore® program for indoor air quality and comply with the VOC emission requirements outlined in the California Department of Public Health (CDPH) Standard Method v1.2-2017 (California Section 01350), effective April 1, 2017. The product’s measured concentration of Total Volatile Organic Compounds (TVOCs) is ≤ 0.5 mg/m^3 and is in compliance with CDPH Standard Method v1.2-2017.

Reference Service Life

A Referenced Service Life (RSL) of 30 years was utilized.

Extraordinary Effects

There are no extraordinary effects pertaining to fire, water or mechanical. Performance and fire information is in the Product Standards and Performance section above.

Re-Use Phase

If damaged, any plank or tile can be replaced. No impacts were calculated because replacement is performed infrequently on an "as needed" basis. There is no re-use scenario for paper and cardboard used for packaging. However, they can be recycled.

Disposal

Although the product and packaging can be recycled, for the purposes of this study and to remain consertative, one hundred percent of the product and packaging was modeled as being disposed of in a landfill.

Life Cycle Assessment: Calculation Rules

Declared Unit

The functional unit according to the PCR is 1 m^2 of finished flooring for the reference service life of 30 years.

Name	ASPECTA® TEN	Unit
Declared Unit	1	m^2
Conversion factor to 1 kg	0.0926	-

System Boundary

This particular LCA is a Cradle-to-Grave study.

A summary of the life cycle stages included in this LCA is presented in the following table.

Module Name	Description	Analysis Period	Summary of Included Elements
A1	Product Stage: Raw Material Supply	2015	Raw Material sourcing and processing as defined by secondary data.
A2	Product Stage: Transport	2015	Shipping from supplier to manufacturing site. Fuel use requirements estimated based on product weights and estimated distance.
A3	Product Stage: Manufacturing	2015	Energy, water and material inputs required for manufacturing products from raw materials. Packaging Materials included as well.
A4	Construction Process Stage: Transport	2015	Shipping from manufacturing site to project site. Fuel use requirements estimated based on product weights and mapped distance.
A5	Construction Process Stage: Installation	2015	Installation and packaging material waste.
B1	Use Stage: Use	N/A	Use of the product.
B2	Use Stage: Maintenance	N/A	Cleaning energy, water, and materials, including refinishing the product.
B3	Use Stage: Repair	N/A	Materials and energy required to repair the product.

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Module Name	Description	Analysis Period	Summary of Included Elements
B4	Use Stage: Replacement	N/A	Total materials and energy required to manufacture a replacement.
B5	Use Stage: Refurbishment	N/A	Materials and energy required to refurbish the product.
B6	Operational Energy Use	N/A	Energy not required for use.
B7	Operational Water Use	N/A	Water not required for use.
C1	EOL: Deconstruction	2015	No inputs required for deconstruction.
C2	EOL: Transport	2015	Shipping from project site to landfill. Fuel use requirements estimated based on product weight and mapped distance.
C3	EOL: Waste Processing	2015	Waste processing not required. All waste can be processed as is.
C4	EOL: Disposal	2015	Assumes all products are sent to landfill. Landfill impacts modeled based on secondary data.
D	Benefits beyond system	N/A	Module Not Declared

Estimates and Assumptions

Landfilling at End of Life – All products were considered to be landfilled at end of life.

Installation Tools – Accessory materials, such as trowels, are required, though not included in the study as these are multi-use tools and the impacts per declared unit is considered negligible.

Cut-off Criteria

All inputs in which data was available were included. Material inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact. Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit. Some material and energy inputs may have been excluded within the GaBi datasets used for this project. All GaBi datasets have been critically reviewed and conform to the exclusion requirement of the PCR. No hazardous and toxic releases are released from the facility.

Background Data

All background data was sourced from GaBi databases. GaBi version 7.3.3.153 was used to complete the assessment.

Data Quality

Geographical Coverage

The geographical scope of the manufacturing portion of the life cycle is two facilities within China. All primary data were collected from these locations. The geographic coverage of primary data is considered excellent. The geographical scope of the raw material acquisition is global, primarily China, while the scope of customer distribution, site installation and use portions of the life cycle is global. Locations and shipping distance values were determined through the analysis of purchasing and sales data using GIS mapping software. This data is considered very good.

Disposal and end-of-life geographic coverage (i.e. site of disposal location) was assumed based on research relating to the average distance someone lives from a landfill. This data is considered good.

Time Coverage

Primary data were provided by Aspecta associates and represent all information from Aspecta's facilities for calendar year 2016. Using 2016 data meets the PCR requirements. Time coverage of this data is considered very good.

Data necessary to model cradle-to-gate unit processes was sourced from thinkstep LCI datasets. Time coverage of the GaBi datasets varies from approximately 2010 to present. All datasets rely on at least one 1-year average data. Overall time coverage of the datasets is considered good and meets the requirement of the PCR that all data be updated within a 10-year period. The specific time coverage of secondary datasets can be referenced in the section titled "Generic Data."

Technological Coverage

Primary data provided by Aspecta is specific to the technology that the company uses in manufacturing their product. It is site specific and considered of good quality. It is worth noting that the energy and water used in manufacturing the product includes overhead energy such as lighting, heating and sanitary use of water. Sub-metering was not available to extract process only energy and water use from the total energy use. Sub-metering would improve the technological coverage of data quality. Data necessary to model cradle-to-gate unit processes was sourced from GaBi LCI datasets. Technological coverage of the datasets is considered good relative to the company's actual supply chain. While improved life cycle data from suppliers would improve technological coverage, the use of lower quality generic datasets does meet the goal of this LCA.

Allocation

General principles of allocation were based on ISO 14044. Where possible, allocation was avoided. When allocation was necessary it was done on a physical mass basis.

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LCA: Scenarios and Additional Technical Information

The following technical information is a basis for the declared modules and can be used for developing specific scenarios in the context of a building assessment. All indicated values refer to the declared functional unit.

Mode	Aspecta® Ten	Unit
A4: Transport to the construction site		
Truck - Fuel Utilization	42	L/100km
Truck - Distance	441	km
Truck - Capacity Utilization	76	%
Ship - Fuel Utilization	16,437	L/100km
Ship - Distance	18,729	km
Ship - Capacity Utilization	48	%
Train - Fuel Utilization	823	L/100km
Train - Distance	149	km
Train - Capacity Utilization	67	%
A5: Installation in the building		
Material Loss	0.221	kg

LCA Results

All results are given per square meter of finished flooring, as per the declared unit.

Description of the System Boundary (X=included in LCA; MND=module not declared)

Product Stage			Construction Process Stage		Use Stage							End of Life Stage				Benefits and Loads Beyond the System Boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational Water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling- potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X			X	X	X	X	X	X	X	X	X	X	X	X	X	MND

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Results of the LCA – Environmental Impact: 1 m^2 of installed finished flooring

Results of the LCA - Environmental Impact, TRACI 2.1 (One Year)												
Parameter	Unit	A1-A3	A4	A5	B1	B2	B3-B7	C1	C2	C3	C4	D
Global Warming Air, incl. biogenic carbon	[kg CO2-Equiv.]	2.10E+01	2.03E+00	1.75E+00	0.00E+00	8.71E+00	0.00E+00	0.00E+00	1.37E-01	0.00E+00	1.74E-01	N/A
Ozone Depletion Air	[kg CFC 11-Equiv.]	1.29E-08	1.03E-11	1.51E-10	0.00E+00	1.07E-09	0.00E+00	0.00E+00	9.45E-13	0.00E+00	1.72E-13	N/A
Acidification	[kg SO2-Equiv.]	6.37E-02	3.08E-02	3.19E-03	0.00E+00	2.18E-02	0.00E+00	0.00E+00	5.92E-04	0.00E+00	1.13E-03	N/A
Eutrophication	[kg N-Equiv.]	3.62E-03	1.31E-03	2.87E-04	0.00E+00	8.33E-03	0.00E+00	0.00E+00	4.96E-05	0.00E+00	9.36E-05	N/A
Smog Air	[kg O3-Equiv.]	1.13E+00	6.50E-01	5.52E-02	0.00E+00	3.20E-01	0.00E+00	0.00E+00	1.96E-02	0.00E+00	2.19E-02	N/A
Abiotic Depletion for fossil resources	[MJ surplus energy]	5.62E+01	3.74E+00	4.37E+00	0.00E+00	2.47E+01	0.00E+00	0.00E+00	2.60E-01	0.00E+00	2.81E-01	N/A

Results of the LCA - Environmental Impact, CML2001 - Jan. 2016 (One Year)												
Parameter	Unit	A1-A3	A4	A5	B1	B2	B3-B7	C1	C2	C3	C4	D
Global Warming Potential	[kg CO2-Equiv.]	2.12E+01	2.03E+00	1.75E+00	0.00E+00	8.82E+00	0.00E+00	0.00E+00	1.37E-01	0.00E+00	1.75E-01	N/A
Ozone Layer Depletion Potential	[kg R11-Equiv.]	1.03E-08	9.65E-12	1.42E-10	0.00E+00	1.00E-09	0.00E+00	0.00E+00	8.88E-13	0.00E+00	1.64E-13	N/A
Acidification Potential	[kg SO2-Equiv.]	5.98E-02	2.79E-02	2.89E-03	0.00E+00	1.84E-02	0.00E+00	0.00E+00	4.41E-04	0.00E+00	1.03E-03	N/A
Eutrophication Potential	[kg Phosphate-Equiv.]	7.24E-03	3.61E-03	5.60E-04	0.00E+00	7.61E-03	0.00E+00	0.00E+00	1.19E-04	0.00E+00	1.40E-04	N/A
Photochem. Ozone Creation Potential	[kg Ethene-Equiv.]	6.54E-03	1.28E-03	3.71E-04	0.00E+00	2.10E-03	0.00E+00	0.00E+00	4.70E-05	0.00E+00	8.11E-05	N/A
Abiotic Depletion	[kg Sb-Equiv.]	5.99E-05	2.19E-07	5.20E-06	0.00E+00	2.20E-05	0.00E+00	0.00E+00	2.34E-08	0.00E+00	6.13E-08	N/A
Abiotic Depleletion for fossil resources	[MJ surplus energy]	4.40E+02	2.70E+01	3.33E+01	0.00E+00	1.96E+02	0.00E+00	0.00E+00	1.93E+00	0.00E+00	2.25E+00	N/A

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Results of the LCA – Resource Use: 1 m^2 of installed finished flooring

Results of the LCA - Resource Use												
Parameter	Unit	A1-A3	A4	A5	B1	B2	B3-B7	C1	C2	C3	C4	D
PERE	MJ, net calorific value	1.61E+01	4.34E-01	9.42E-01	0.00E+00	9.54E+00	0.00E+00	0.00E+00	4.71E-02	0.00E+00	2.73E-01	N/A
PERM	MJ, net calorific value	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	N/A
PERT	MJ, net calorific value	1.61E+01	4.34E-01	9.42E-01	0.00E+00	9.54E+00	0.00E+00	0.00E+00	4.71E-02	0.00E+00	2.73E-01	N/A
PENRE	MJ, net calorific value	4.59E+02	2.71E+01	3.47E+01	0.00E+00	2.07E+02	0.00E+00	0.00E+00	1.94E+00	0.00E+00	2.33E+00	N/A
PENRM	MJ, net calorific value	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	N/A
PENRT	MJ, net calorific value	4.59E+02	2.71E+01	3.47E+01	0.00E+00	2.07E+02	0.00E+00	0.00E+00	1.94E+00	0.00E+00	2.33E+00	N/A
SM	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	N/A
RSF	MJ, net calorific value	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	N/A
NRSF	MJ, net calorific value	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	N/A
FW	M3	6.52E+00	7.77E-02	4.12E-01	0.00E+00	4.53E+00	0.00E+00	0.00E+00	5.29E-03	0.00E+00	1.30E-01	N/A

PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials	PENRT	Total use of non renewable primary energy resources (primary energy and primary energy resources used as raw materials)
PERM	Use of renewable primary energy resources used as raw materials	SM	Use of secondary materials
PERT	Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	RSF	Use of renewable secondary fuels
PENRE	Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials	NRSF	Use of non renewable secondary fuels
PENRM	Use of non renewable primary energy resources used as raw materials	FW	Net use of fresh water

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Results of the LCA – Output Flows and Waste Categories: 1 m^2 of installed finished flooring

Results of the LCA - Waste and Output Flows												
Parameter	Unit	A1-A3	A4	A5	B1	B2	B3-B7	C1	C2	C3	C4	D
HWD	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	N/A
NHWD	Kg	1.72E+01	1.89E-01	1.38E+00	0.00E+00	1.22E+01	0.00E+00	0.00E+00	1.86E-02	0.00E+00	1.12E+01	N/A
RWD	Kg	7.34E-03	4.74E-05	5.54E-04	0.00E+00	4.51E-03	0.00E+00	0.00E+00	3.38E-06	0.00E+00	3.15E-05	N/A
CRU	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	N/A
MFR	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	N/A
MET	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	N/A
EEE	MJ, net calorific value	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	N/A
EET	MJ, net calorific value	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	N/A
HWD	Disposed-of-hazardous WASTE						MFR	Materials for recycling				
NHWD	Disposed-of non-hazardous WASTE						MET	Materials for energy recovery				
RWD	Disposed-of Radioactive WASTE						EEE	Exported electrical energy				
CRU	Components for reuse						EET	Exported thermal energy				

LCA: Interpretation

A Dominance Analysis evaluates each life cycle stage and compares the impacts from that stage to the sum of the impacts calculated for all declared modules. A Dominance Analysis was completed for the results. The dominance analysis shows the vast majority of the impacts are split between the aggregated A1-A3 product stage and the B2 maintenance phase. The A1-A3 modules include raw material sourcing, transportation and manufacturing. The B2 phase includes maintenance of the product over time. Within the product stage (A1-A3), the largest contributors to the impacts are the polyvinyl chloride and non-phthalate plasticizer. Conversely, while the filler makes up a significant portion of the mass of the flooring, its impact is very low relative to the impact of the other materials present.

It is important to note that data quality may have an impact on the results of an LCA. Overall data quality is considered good. Improvements can be made through the modification of datasets to incorporate more regional specificity, both in terms of energy and technology. However, the data was considered appropriate in relation to the goal, scope and budget of the project.

Comparability

EPDs are not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. The comparison of EPD data may only be possible if all the data sets to be compared were created according to EN 15804 and the building context, respectively and the product-specific characteristics of performance are taken into account. The background database utilized must be reported. Eco-toxicity and human health assessments are excluded from this EPD. The currently available models used to calculate eco-toxicity and human health assessment impact categories have a large amount of uncertainty and variation in their results. For this reason, it is currently not prudent to include such information.

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