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Dryback Luxury Vinyl Tile - Environmental Product Declaration

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Program Operator	NSF International 789 N. Dixboro, Ann Arbor, MI 48105 www.nsf.org
General Program instructions and Version Number	Part A: Life Cycle Assessment Calculation Rules and Report Requirements, Version 3.2
Manufacturer Name and Address	Parterre Flooring Systems 500 Research Drive Wilmington, MA 01887
Declaration Number	EPD10156
Declared Product and Functional Unit	Dryback Luxury Vinyl Tile 1 m^2 of installed flooring and with a building service life of 75 years
Reference PCR and Version Number	Part A: Life Cycle Assessment Calculation Rules and Report Requirements, Version 3.2 Part B: Flooring EPD Requirements. UL 10010-7, September 28, 2018
Product's intended Application and Use	Commercial Flooring and Wall Applications
Product RSL	30 years
Markets of Applicability	North America
Date of Issue	2/6/2019
Period of Validity	5 years from date of issue
EPD Type	Product Specific
Range of Dataset Variability	N/A
EPD Scope	Cradle to Grave
Year of reported manufacturer primary data	2017
LCA Software and Version Number	GaBi 8.7.0.18
LCI Database and Version Number	GaBi Database Version 8.7, Service Pack 35
LCIA Methodology and Version Number	TRACI 2.1 CML 2001-Jan 2016
The sub-category PCR review was conducted by:	Jack Geibig (Chair) Thomas Gloria, PhD Thaddeus Owen

This declaration was independently verified in accordance with ISO 14025: 2006. The UL Environment "Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report," v3.1 (February 2018), based on CEN Norm EN 15804 (2012) and ISO 21930:2017, serves as the core PCR, with additional considerations from the USGBC/UL Environment Part A Enhancement (2017) ☐ **Internal** ☒ **External**	Jenny Oorbeck joorbeck@nsf.org
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	WAP Sustainability Consulting
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Jack Geibig - EcoForm jgeibig@ecoform.com

Limitations:
Environmental declarations from different programs (ISO 14025) may not be comparable.
Comparison of the environmental performance of Flooring Products using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the building energy use phase as instructed under this PCR.
Full conformance with the PCR for Products allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.

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Product Definition and Information

1. Company Description

Our story begins with a vision for the perfect flooring—one that's strong and durable, yet beautifully designed. The result is a floor covering that reflects the incomparable beauty of nature, while offering durability to stand the test of time. Since 1991, Parterre has offered Luxury Vinyl Tile (LVT), plank and sheet flooring products with unsurpassed quality and performance. Our broad selection of flooring solutions authentically mirrors the look of granite, marble, limestone and wood, as well as metallic surfaces and other unique finishes.

In addition, Parterre LVT is indoor air quality certified, conforming to California Specification 1350, and offers a moisture barrier that prevents microbial growth. Products included in this EPD are also FloorScore® certified and may be eligible for LEED credits.

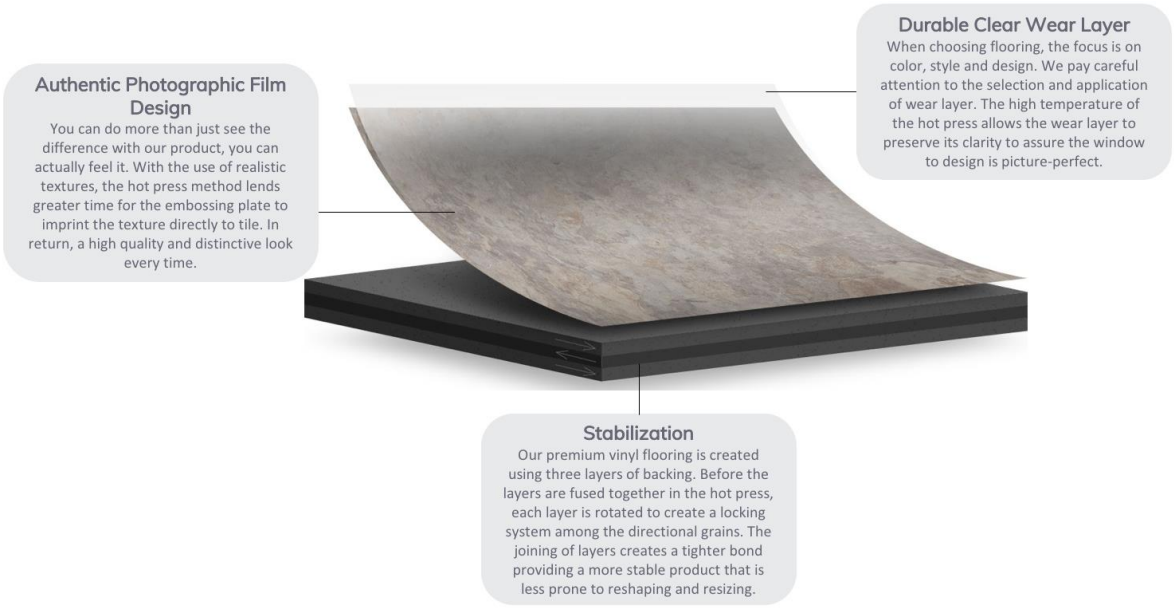

Figure 1: Product Construction

2. Product Description

Vinyl's long lifecycle translates to cost and environmental efficiencies. For example, Parterre LVT is indoor air quality certified, conforming to California Specification 1350, and offers a moisture barrier that prevents microbial growth. A wide selection of Parterre Luxury Vinyl flooring products is FloorScore certified and all products may be eligible for LEED credits in the following categories: LEED EQc4.3 for Low Emitting Materials. Dryback, also referred to as glue down, is the most common and frequently used LVT product in commercial settings. Available in tile, plank and sheets format, dryback requires the use of an adhesive when installing. Various thicknesses of dryback are studied in this EPD which include 2.5mm, 3mm, 4mm and 5mm. An average based on product construction was utilized for the life cycle assessment.

Table 1: Technical Details (metric units)

Parameter	Dryback (2.5mm)	Dryback (3mm)	Dryback (4mm)	Dryback (5mm)	Unit
Construction	Luxury Vinyl Tile				-
Finish	Polyurethane protective coating				-
Thickness	2.5	3	4	5	mm
Mass	5.03	5.72	8.08	10.10	kg
Wear Layer	0.25	0.5	0.5	0.5	mm
Size (Tile)	304.8x304.8, 304.8x609.6	304.8x304.8, 457.2x457.2, 304.8x609.6, 457.2x914.4	304.8x304.8, 457.2x457.2, 304.8x609.6, 457.2x914.4	304.8x304.8, 457.2x457.2, 304.8x609.6, 457.2x914.4	mm
Size (Plank)	101.6x 914.4	101.6x914.4, 152.4x914.4, 184.15x1219.2	184.15x1524	101.6x914.4, 152.4x914.4, 184.15x1219.2	mm

The average was created by utilizing the standard formulation for the product and averaging together all of the various colors and patterns. The pigment associated with the print film that is attributed to various color and pattern options is about 0.2% of the product.

3. Application

Table 2: Technical Details (standard units)

Parameter	Dryback (2.5mm)	Dryback (3mm)	Dryback (4mm)	Dryback (5mm)	Unit
Construction	Luxury Vinyl Tile				-
Finish	Polyurethane protective coating				-
Thickness	0.098	0.118	0.157	0.196	in
Mass	11.08	12.61	17.81	22.26	lb
Wear Layer	10	20	20	20	mil
Size (Tile)	12x12, 12x24	12x12, 18x18, 12x24, 18x36	12x12, 18x18, 12x24, 18x36	12x12, 18x18, 12x24, 18x36	in
Size (Plank)	4x36	4x36, 6x36, 7.25x48	7.25x60	4x36, 6x36, 7.25x48	in

The combination of durability and attractive design makes Parterre's sustainable flooring products an ideal choice for commercial applications, including healthcare, retail, hospitality, educational, governmental, multi-family, fitness, public and professional spaces. Our broad selection of resilient flooring solutions authentically replicates the beauty of granite, marble, quarried limestone and wood, as well as metallic surfaces and other unique finishes.

4. Properties of Declared Product as Delivered

The product is usually delivered packaged in a cardboard box with plastic wrap and plastic bubble wrap to protect the tiles during overseas shipping.

5. Declaration of Methodological Framework

This EPD is a cradle-to-grave study. A summary of the life cycle stages can be found in Section 17.

The reference service life is outlined in Table 7 and is only applicable if all manufacturing guidelines are followed regarding site-selection and installation, found online. The cut-off criteria are described in Section 0 and allocation procedures are described in Section 23. No known flows are deliberately excluded from this EPD. Third party verified ISO 14040/44 secondary LCI data sets contribute more than 67% of total impacts in all impact categories required by the PCR.

Table 3: Performance Testing for Dryback

Performance	Test	Requirements	Result
Thickness	ASTM F 386	Nominal ± 0.0005 in.	Meets
Size	ASTM F 2055	± 0.016 in. per linear foot	Pass
Squareness	ASTM F 2055	0.010 in. max	Pass
Residual Indentation	ASTM F 1914	Average <8%	Pass
Flexibility	ASTM F 137	≤ 1.0 in., no cracks or break	Pass
Dimensional Stability	ASTM F 2199	0.02017 in. max	Exceeds per linear foot
Static Coefficient of Friction	ASTM D 2047	≥ 0.50	Pass
Chemical Resistance	ASTM F 925	No more than slight change in surface dulling, attack or stain	Meets or exceeds
Resistance to Heat	ASTM F 1514	ΔE ≤ 8	Pass
Resistance to Light	ASTM F 1515	ΔE ≤ 8	Pass

6. Flow Diagram

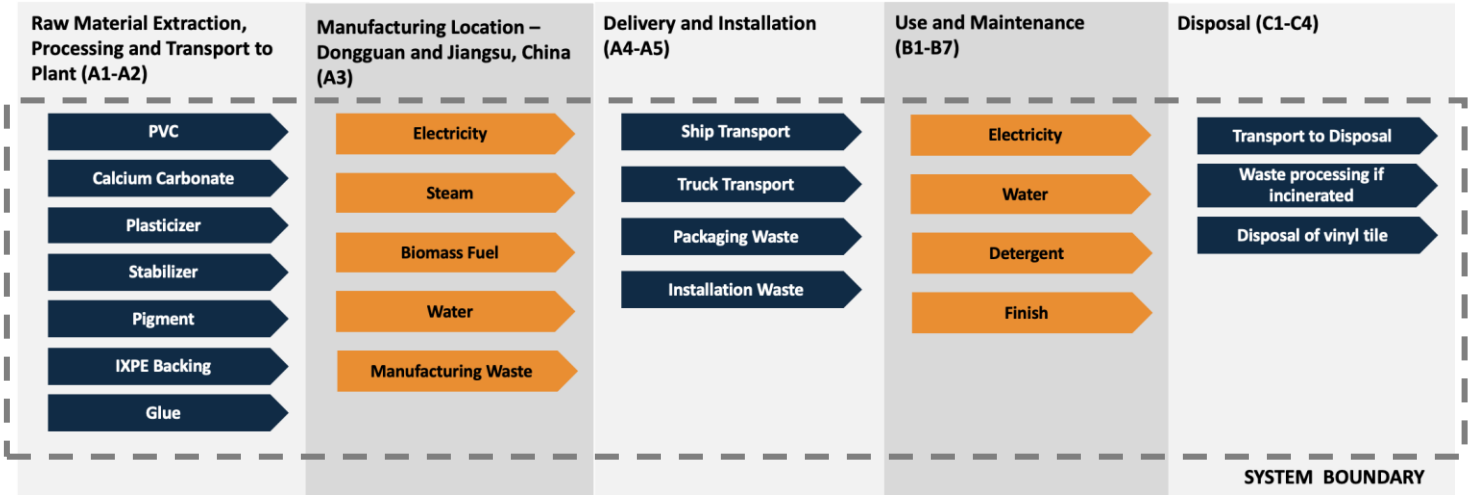

Figure 2: Flow Diagram

7. Manufacturing

Dryback Luxury Vinyl Tile is manufactured in Dongguan and Jiangsu in China. LVT flooring is composed of a highly filled core layer plus decorative film and a wear protection layer. While the core gives strength and dimensional stability, the core layer provides flatness of the floor covering and impact sound insulation. First, raw materials PVC, calcium carbonate and plasticizers go through the calendar line to form LVT slabs. The LVT tile then goes through a hot press that attaches a wear layer and a decoration film to the vinyl tile. The decoration film gives each tile or plank a unique style and design. Next, the tiles are annealed with plastic wrap and paper. After annealing, the tiles are punched and profiled where the excess from this step are recycled and reused in manufacturing new tiles. The products mentioned in this EPD do not contain any TSCA regulated substances.

8. Material Composition

Component	Dryback (Mass %)
PVC	28.15%
Calcium carbonate	60.49%
Plasticizer	10.01%
Stabilizer	0.29%
Pigment	0.17%
Additives	0.35%

After manufacturing, the product is packaged for shipment to the customer. The product is usually delivered packaged in a cardboard box with plastic wrap and plastic bubble wrap to protect the tiles during overseas shipping. Packaging materials are either recycled, landfilled or incinerated based on waste classification mentioned in Section 2.8.5- and 2.8.6-Part A of the reference PCR.

9. Packaging

Input per sq. m²	Value	Unit
Cardboard	0.43	kg
Protection bubble	0.005	kg
Plastic Tape	0.0019	kg
Wooden pallet	0.077	kg

Additional packaging includes the pallets that the final product is shipped on.

10. Transportation

Input	Type, Energy Carrier	miles	km
Raw material supplier to manufacturing facility	Truck, Diesel	154.21	248.18
Shipping to Customer	Truck, Diesel/ Ship, Heavy fuel oil	4248.40	6837.14
Shipping to End-of-Life	Truck, Diesel	100	161

It is assumed that all raw materials are distributed by truck, based on global region. An average distance using this information was calculated and used in the model. Transport of raw material from supplier to the manufacturing facility was calculated for each raw material but only an average has been listed here due to simplicity. Average distance to installation site was assumed to be 250 miles from the from the port of arrival to customer job site in 2018. The transportation distance for all waste flows is assumed to be 161 km based on best available data.

11. Product Installation

Input per sq. m²	Value	Unit
Adhesive	0.322	kg
Install waste	2	%

Detailed installation instructions can be found on Parterre's installation guidelines. While installation equipment is required to install the flooring product, it is not included in the study as these are multi-use tools and the impacts per declared unit is considered negligible. It is recommended that one uses Parterre Adhesive as recommended by Parterre on their Technical Resources page for Dryback Luxury Vinyl Tile installation. An average of coverage rates of the recommended adhesives is calculated for this study. All waste generated during installation, including packaging waste, is disposed of according to the tables found in Section 2.8.5 of Part A: Life Cycle Assessment Calculation Rules and Report Requirements from UL Environment.

12. Use

The table below shows the parameters for the use phase scenario undergoing study while Table 9 shows the total material and energy inputs required in the study. These inputs were taken from Resilient Floor Coverings Institute's (RFCI) maintenance guidelines indicated in the industry-wide EPD. Resilient tile products are traditionally not repaired or refurbished and are only replaced if the product fails or a new look is desired. Detailed maintenance instructions are provided in General Safety Practices, Key Precautions and Maintenance Procedures.

Level of use	Cleaning process	Cleaning process	Consumption of energy and resources
Commercial/ Light Commercial/ Industrial	Dust mop	Daily	None
	Damp mop/ neutral cleaner	Weekly	Hot water Neutral Detergent
	Spray buff/ finish restorer	Monthly	Floor finish Electricity

13. Reference Service Life and Estimated Building Service Life

The reference service life of Parterre LVT is assumed to be 30 years given that the product is installed as per manufacturer guidelines. The estimated service life of the building is 75 years for which 2.5 m^2 of Parterre LVT is needed.

14. Reuse, Recycling and Energy Recovery

At the end of its useful life, Parterre resilient flooring can be removed and recycled, to be used with other plastics in the manufacture of many types of new vinyl products. If the flooring is not recycled, it can be easily disposed of, without any special handling requirements and without the threat of contamination.

15. Disposal

The product is considered to be 100% landfilled as specified in Sections 2.8.5 and 2.8.6 of Part A: Life Cycle Assessment Calculation Rules and Report Requirements from UL Environment.

Life Cycle Assessment Background Information

16. Functional Unit

The functional unit of the flooring product is one (1) m^2 of floor covering.

	Dryback (2.5mm)	Dryback (3mm)	Dryback (4mm)	Dryback (5mm)
Functional Unit [m²]	1	1	1	1
Average Weight [kg]	5.15	5.84	8.25	10.3

17. System Boundary

This EPD is a cradle-to-grave study.

Table 4: Description of system boundary modules (X = Included in study)

	PRODUCT STAGE			CONSTRUCT-ION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
	Raw material supply	Transport	Manufacturing	Transport from gate to site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Building Operational Energy Use During Product Use	Building Operational Water Use During Product Use	Deconstruction	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling Potential
EPD Type	X			X	X	X	X	X	X	X	X	X	X	X	X	X	MND

Table 5: System Boundary and Modules

Module Name	Description	Analysis Period	Summary of Included Elements
A1	Product Stage: Raw Material Supply	2018	Raw Material sourcing and processing as defined by secondary data.
A2	Product Stage: Transport	2018	Shipping from supplier to manufacturing site. Fuel use requirements estimated based on product weights and estimated distance.
A3	Product Stage: Manufacturing	2017	Energy, water and material inputs required for manufacturing products from raw materials. Packaging materials and manufacturing waste are included as well.
A4	Construction Process Stage: Transport	2018	Shipping from manufacturing site to project site. Fuel use requirements estimated based on product weights and mapped distance.
A5	Construction Process Stage: Installation	2018	Installation materials, installation waste and packaging material waste.
B1	Use Stage: Use	2018	Use of the product.
B2	Use Stage: Maintenance	2018	Cleaning energy, water, and materials, including refinishing the product.
B3	Use Stage: Repair	2018	Product typically not repaired during use.
B4	Use Stage: Replacement	2018	Total materials and energy required to manufacture a replacement.
B5	Use Stage: Refurbishment	2018	Product typically not refurbished during use.
B6	Operational Energy Use	2018	Operational Energy Use of Building Integrated System During Product Use

Module Name	Description	Analysis Period	Summary of Included Elements
B7	Operational Water Use	2018	Operational Water Use of Building Integrated System During Product Use
C1	EOL: Deconstruction	2018	No inputs required for deconstruction.
C2	EOL: Transport	2018	Shipping from project site to waste disposal.
C3	EOL: Waste Processing	2018	Waste processing if incineration as chosen disposal pathway per Part A of the PCR.
C4	EOL: Disposal	2018	Disposal modeled by region as per Part A of the PCR.
D	Benefits beyond system	MND	Credits from energy or material capture.

18. Estimates and Assumptions

All estimates and assumptions are within the requirements of ISO 14040/44. The majority of the estimations are within the primary data. The primary data was collected as annual totals including all utility usage and production information. For the LCA, the usage information was divided by the production to create an energy and water use per square meter. As there are different products produced at this facility, it is assumed all products are using the same amount of energy. Another assumption is that the installation tools are used enough times that the per square meter impacts are negligible.

19. Cut-Off Rules

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. No known flows are deliberately excluded from this EPD. Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit.

20. Data Sources

Primary data were collected by facility personnel and from utility bills and was used for all manufacturing processes. Whenever available, supplier data was used for raw materials used in the production process. When primary data did not exist, secondary data for raw material production was utilized from GaBi Database Version 8.7, Service Pack 35.

21. Data Quality

The geographical scope of the manufacturing portion of the life cycle is China. All primary data were collected from the manufacturer. The geographic coverage of primary data is considered excellent. The primary data provided by the manufacturer represent all information for calendar year 2017. Time coverage of this data is considered very good. Primary data provided by the manufacturer is specific to the technology that Parterre 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 would improve the technological coverage of data quality. Data necessary to model cradle-to-gate unit processes was sourced from GaBi LCI datasets. Improved life cycle data from suppliers would improve technological coverage.

22. Period under Review

The period under review is calendar year 2017.

23. Allocation

General principles of allocation were based on ISO 14040/44. There are no products other than Luxury Vinyl Tiles that are produced in the two facilities that manufacture for Parterre Flooring. Since there are no co-products, no allocation based on co-products is required.

To derive a per unit value for manufacturing inputs such as electricity, natural gas and water, allocation based on total production in square meters was adopted. Discussions with Parterre staff divulged this was a more representative way than via mass to allocate the manufacturing inputs based on the manufacturing processes used and the types of products created. As a default, secondary GaBi datasets use a physical mass basis for allocation. Throughout the study recycled materials were accounted for via the cut-off method. Under this method, impacts and benefits associated with the previous life of a raw material from recycled stock are excluded from the system boundary. Additionally, impacts and benefits associated with secondary functions of materials at end of life are also excluded (i.e. production into a third life or energy generation from the incineration plant). The study does include the impacts associated with reprocessing and preparation of recycled materials that are part of the bill of materials of the products under study.

24. Comparability and Benchmarking

The user of the EPD should take care when comparing EPDs from different companies. Assumptions, data sources, and assessment tools may all impact the uncertainty of the final results and make comparisons misleading. Without understanding the specific variability, the user is therefore, not encouraged to compare EPDs. Even for similar products, differences in use and end-of-life stage assumptions, and data quality may produce incomparable results. Comparison of the environmental performance of Flooring Products using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the building energy use phase as instructed under this PCR. Full conformance with the PCR for Products allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.

Life Cycle Assessment Scenarios

Table 6: Transport to building site (A4)

Name	Truck	Ship	Unit
Fuel type	Diesel	Heavy fuel oil	-
Liters of fuel	39.0625	18,278.49	l/100km
Vehicle type	Heavy Duty Truck	Bulk commodity carrier	-
Transport distance	585	26,763.252	km
Capacity utilization	0.67	0.48	%
Weight of products transported	13,445.72	145,149,558	kg
Capacity utilization volume factor	1	1	-

Table 8: Installation into the building (A5)

Name	Dryback (2.5mm)	Dryback (3mm)	Dryback (4mm)	Dryback (5mm)	Unit
Adhesive	0.322	0.322	0.322	0.322	kg
Product loss per functional unit	0.103	0.117	0.165	0.206	kg
Waste materials at the construction site before waste processing, generated by product installation	0.627	0.641	0.689	0.730	kg
Output materials resulting from on-site waste processing	0	0	0	0	kg
Biogenic carbon contained in packaging	1.56	1.56	1.56	1.56	kg CO_2

Table 7: Reference Service Life

Name	Value	Unit
RSL	30	years
Declared product properties (at the gate) and finishes, etc.	See Table 1	-
Design application	Installation per recommendation by manufacturer	-
An assumed quality of work, when installed in accordance with the manufacturer's instructions	Accepted industry standard	-
Indoor environment (if relevant for indoor applications)	Normal building operating conditions	-
Use conditions, e.g. frequency of use, mechanical exposure	Normal building operating conditions	-

Table 9: Maintenance (B2)

Name	Value	Unit
Maintenance process information	Industry accepted	
Dust mop (Daily)	10,920	Number/ RSL
Dust mop (Daily)	27,300	Number/ ESL
Damp mop (Weekly)	1,560	Number/ RSL
Damp mop (Weekly)	3,900	Number/ ESL
Spray buff (Monthly)	360	Number/ RSL
Spray buff (Monthly)	900	Number/ ESL
Net freshwater consumption specified by water source and fate	0.0058, evaporated	m^3/m^2 floor/yr
Neutral detergent	0.107	kg/m^2 floor/yr
Finish	0.016	kg/m^2 floor/yr
Energy input, specified by activity, type and amount	0.022	kWh/m^2 floor/yr
Further assumptions for scenario development (e.g. frequency and time period of use, number of occupants);	Dust mop daily, damp mop weekly, spray buff monthly	

Table 10: Replacement (B4)

Name	Value	Unit
Replacement cycle	0	Number/ RSL
Replacement cycle	2.5	Number/ ESL
Energy input, specified by activity, type and amount	0	kWh
Net freshwater consumption specified by water source and fate	0	m^3
Adhesive	0.322	kg/ replacement

Table 11: End of life (C1-C4)

Name		Dryback (2.5mm)	Dryback (3mm)	Dryback (4mm)	Dryback (5mm)	Unit
Assumptions for scenario development		Product is either disposed of with the underlying floor or manually removed via scraping				
Collection process	**Collected separately**	0	0	0	0	kg
	Collected with mixed construction waste	5.37	6.05	8.4	10.4	kg
Recovery	**Reuse**	0	0	0	0	kg
	Recycling	0	0	0	0	kg
	Landfill	5.37	6.05	8.4	10.4	kg
	Incineration	0	0	0	0	kg
	Incineration with energy recovery	0	0	0	0	kg
	Energy conversion efficiency rate	84-94	84-94	84-94	84-94	%
Disposal	**Product or material for final deposition**	5.37	6.05	8.4	10.4	kg
Removals of biogenic carbon (excluding packaging)		0.076	0.086	0.121	0.151	kg

Life Cycle Assessment Results

All results are given per functional unit, which is 1 m^2 of installed flooring over an estimated building life of 75 years. Environmental Impacts were calculated using the GaBi software platform. Impact results have been calculated using both TRACI 2.1 and CML 2001-Jan 2016 characterization factors. LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. These six impact categories are globally deemed mature enough to be included in Type III environmental declarations. Other categories are being developed and defined and LCA should continue making advances in their development, however the EPD users shall not use additional measures for comparative purposes.

See Impact Category Key section at the end of results section for definition of acronyms.

Table 12: Impact Category Key

Acronym	Text	Acronym	Text
ADP-elements	Abiotic depletion potential for non-fossil resources	**GWP**	Global warming potential
ADP-fossil	Abiotic depletion potential for fossil resources	**OPD**	Depletion of stratospheric ozone layer
AP	Acidification potential of soil and water	**POCP**	Photochemical ozone creation potential
EP	Eutrophication potential	**Resources**	Depletion of non-renewable fossil fuels
LCI Indicators			
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
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

Table 13: Carbon Emissions and Removals

Parameter	Parameter	Dryback (2.5mm)	Dryback (3mm)	Dryback (4mm)	Dryback (5mm)	Unit
BCRP	**Biogenic Carbon Removal from Product**	0.076	0.086	0.121	0.151	kg CO_2
BCEP	**Biogenic Carbon Emission from Product**	0.0858	0.097	0.137	0.171	kg CO_2
BCRK	**Biogenic Carbon Removal from Packaging**	1.7	1.7	1.7	1.7	kg CO_2
BCEK	**Biogenic Carbon Emission from Packaging**	0.672	0.672	0.672	0.672	kg CO_2

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1. Dryback – 2.5 mm

1.1 CML Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-elements [kg Sb eq]	1.42E-05	9.08E-08	2.13E-07	0.00E+00	1.28E-04	0.00E+00	2.19E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-08	0.00E+00	1.02E-07	MND
ADP-fossil fuel [MJ]	1.43E+02	3.36E+01	1.47E+01	0.00E+00	7.85E+02	0.00E+00	2.92E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.13E-01	0.00E+00	3.69E+00	MND
AP [kg SO2 eq]	1.79E-02	6.74E-02	2.75E-03	0.00E+00	9.75E-02	0.00E+00	1.34E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.23E-04	0.00E+00	1.01E-03	MND
EP [kg Phosphate eq]	2.59E-03	7.11E-03	3.61E-04	0.00E+00	1.11E-02	0.00E+00	1.53E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.99E-05	0.00E+00	1.30E-04	MND
GWP [kg CO2 eq]	6.18E+00	2.63E+00	8.01E-01	0.00E+00	4.75E+01	0.00E+00	1.48E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.48E-02	0.00E+00	2.38E-01	MND
ODP [kg CFC 11 eq]	2.10E-10	1.48E-14	2.21E-13	0.00E+00	2.88E-11	0.00E+00	3.15E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-15	0.00E+00	4.35E-14	MND
POCP [kg Ethene eq]	2.21E-03	3.54E-03	2.50E-04	0.00E+00	9.28E-03	0.00E+00	9.13E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.24E-05	0.00E+00	8.48E-05	MND

1.2 TRACI Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
AP [kg SO2 eq]	1.90E-02	7.15E-02	3.54E-03	0.00E+00	1.01E-01	0.00E+00	1.43E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E-04	0.00E+00	1.09E-03	MND
EP [kg N eq]	1.71E-03	2.46E-03	2.72E-04	0.00E+00	9.18E-03	0.00E+00	6.75E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.44E-05	0.00E+00	5.54E-05	MND
GWP [kg CO2 eq]	6.11E+00	2.63E+00	7.84E-01	0.00E+00	4.70E+01	0.00E+00	1.46E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.47E-02	0.00E+00	2.36E-01	MND
ODP [kg CFC 11 eq]	2.10E-10	1.48E-14	2.21E-13	0.00E+00	2.88E-11	0.00E+00	3.15E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-15	0.00E+00	4.35E-14	MND
Resources [MJ]	1.78E+01	4.78E+00	1.97E+00	0.00E+00	9.33E+01	0.00E+00	3.75E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-01	0.00E+00	4.74E-01	MND
POCP [kg O3 eq]	3.11E-01	1.34E+00	2.00E-02	0.00E+00	1.47E+00	0.00E+00	2.54E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.90E-03	0.00E+00	2.17E-02	MND

PARTERRE
FLOORING SYSTEMS

1.3 Resource Use Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
RPR_E [MJ]	1.94E+01	1.99E-01	8.90E-01	0.00E+00	4.50E+01	0.00E+00	3.11E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.27E-02	0.00E+00	2.67E-01	MND
RPR_M [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	MND
RPR_T [MJ]	1.94E+01	1.99E-01	8.90E-01	0.00E+00	4.50E+01	0.00E+00	3.11E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.27E-02	0.00E+00	2.67E-01	MND
$NRPR_E$ [MJ]	1.47E+02	3.36E+01	1.52E+01	0.00E+00	8.55E+02	0.00E+00	2.99E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.18E-01	0.00E+00	3.79E+00	MND
$NRPR_M$ [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	MND
$NRPR_T$ [MJ]	1.47E+02	3.36E+01	1.52E+01	0.00E+00	8.55E+02	0.00E+00	2.99E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.18E-01	0.00E+00	3.79E+00	MND
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
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	MND
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	MND
RE [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	MND
FW [m^3]	5.93E-02	7.76E-04	2.79E-03	0.00E+00	2.60E+00	0.00E+00	9.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E-04	0.00E+00	4.58E-04	MND

1.4 Output Flows and Waste Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD [kg]	1.30E-06	3.95E-08	8.14E-09	0.00E+00	4.15E-07	0.00E+00	2.04E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.14E-09	0.00E+00	1.30E-08	MND
NHWD [kg]	1.48E-01	4.63E-04	2.32E-01	0.00E+00	1.38E+00	0.00E+00	8.66E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.45E-05	0.00E+00	5.39E+00	MND
HLRW [kg]	2.20E-06	1.55E-08	2.50E-07	0.00E+00	3.23E-05	0.00E+00	3.77E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.43E-09	0.00E+00	4.91E-08	MND
ILLRW [kg]	1.83E-03	1.27E-05	1.87E-04	0.00E+00	2.65E-02	0.00E+00	3.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.02E-06	0.00E+00	3.88E-05	MND
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
R [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	MND
MER [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	MND
EE [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	MND

PARTERRE
FLOORING SYSTEMS

2. Dryback – 3 mm

2.1 CML Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-elements [kg Sb eq]	1.59E-05	1.02E-07	2.13E-07	0.00E+00	1.44E-04	0.00E+00	2.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E-08	0.00E+00	1.15E-07	MND
ADP-fossil fuel [MJ]	1.58E+02	3.77E+01	1.47E+01	0.00E+00	8.85E+02	0.00E+00	3.22E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.03E+00	0.00E+00	4.15E+00	MND
AP [kg SO2 eq]	1.91E-02	7.55E-02	2.75E-03	0.00E+00	1.10E-01	0.00E+00	1.48E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.51E-04	0.00E+00	1.13E-03	MND
EP [kg Phosphate eq]	2.77E-03	7.97E-03	3.61E-04	0.00E+00	1.25E-02	0.00E+00	1.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.74E-05	0.00E+00	1.47E-04	MND
GWP [kg CO2 eq]	6.82E+00	2.95E+00	8.02E-01	0.00E+00	5.35E+01	0.00E+00	1.63E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.30E-02	0.00E+00	2.67E-01	MND
ODP [kg CFC 11 eq]	2.38E-10	1.66E-14	2.21E-13	0.00E+00	3.23E-11	0.00E+00	3.57E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E-15	0.00E+00	4.89E-14	MND
POCP [kg Ethene eq]	2.40E-03	3.97E-03	2.50E-04	0.00E+00	1.05E-02	0.00E+00	1.01E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.52E-05	0.00E+00	9.55E-05	MND

2.2 TRACI Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
AP [kg SO2 eq]	2.02E-02	8.02E-02	3.54E-03	0.00E+00	1.14E-01	0.00E+00	1.58E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.38E-04	0.00E+00	1.23E-03	MND
EP [kg N eq]	1.79E-03	2.75E-03	2.72E-04	0.00E+00	1.03E-02	0.00E+00	7.31E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.75E-05	0.00E+00	6.23E-05	MND
GWP [kg CO2 eq]	6.74E+00	2.95E+00	7.85E-01	0.00E+00	5.30E+01	0.00E+00	1.61E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.29E-02	0.00E+00	2.66E-01	MND
ODP [kg CFC 11 eq]	2.38E-10	1.66E-14	2.21E-13	0.00E+00	3.23E-11	0.00E+00	3.57E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E-15	0.00E+00	4.89E-14	MND
Resources [MJ]	1.99E+01	5.35E+00	1.97E+00	0.00E+00	1.05E+02	0.00E+00	4.16E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.38E-01	0.00E+00	5.33E-01	MND
POCP [kg O3 eq]	3.35E-01	1.51E+00	2.01E-02	0.00E+00	1.65E+00	0.00E+00	2.83E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-02	0.00E+00	2.44E-02	MND

PARTERRE
FLOORING SYSTEMS

2.3 Resource Use Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
RPR_E [MJ]	1.97E+01	2.23E-01	8.90E-01	0.00E+00	5.08E+01	0.00E+00	3.17E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.56E-02	0.00E+00	3.01E-01	MND
RPR_M [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	MND
RPR_T [MJ]	1.97E+01	2.23E-01	8.90E-01	0.00E+00	5.08E+01	0.00E+00	3.17E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.56E-02	0.00E+00	3.01E-01	MND
$NRPR_E$ [MJ]	1.63E+02	3.77E+01	1.52E+01	0.00E+00	9.60E+02	0.00E+00	3.30E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.03E+00	0.00E+00	4.26E+00	MND
$NRPR_M$ [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	MND
$NRPR_T$ [MJ]	1.63E+02	3.77E+01	1.52E+01	0.00E+00	9.60E+02	0.00E+00	3.30E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.03E+00	0.00E+00	4.26E+00	MND
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
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	MND
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	MND
RE [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	MND
FW [m^3]	6.22E-02	8.71E-04	2.79E-03	0.00E+00	2.93E+00	0.00E+00	9.96E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-04	0.00E+00	5.16E-04	MND

2.4 Output Flows and Waste Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD [kg]	1.47E-06	4.43E-08	8.19E-09	0.00E+00	4.68E-07	0.00E+00	2.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.04E-09	0.00E+00	1.47E-08	MND
NHWD [kg]	1.54E-01	5.19E-04	2.46E-01	0.00E+00	1.55E+00	0.00E+00	9.69E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.88E-05	0.00E+00	6.06E+00	MND
HLRW [kg]	2.44E-06	1.74E-08	2.50E-07	0.00E+00	3.63E-05	0.00E+00	4.14E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.74E-09	0.00E+00	5.52E-08	MND
ILLRW [kg]	2.03E-03	1.42E-05	1.87E-04	0.00E+00	3.00E-02	0.00E+00	3.41E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.27E-06	0.00E+00	4.37E-05	MND
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
R [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	MND
MER [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	MND
EE [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	MND

PARTERRE
FLOORING SYSTEMS

3. Dryback – 4 mm

3.1 CML Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-elements [kg Sb eq]	2.21E-05	1.40E-07	2.14E-07	0.00E+00	2.00E-04	0.00E+00	3.39E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.85E-08	0.00E+00	1.60E-07	MND
ADP-fossil fuel [MJ]	2.11E+02	5.19E+01	1.48E+01	0.00E+00	1.23E+03	0.00E+00	4.25E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E+00	0.00E+00	5.77E+00	MND
AP [kg SO2 eq]	2.32E-02	1.04E-01	2.77E-03	0.00E+00	1.53E-01	0.00E+00	1.97E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.49E-04	0.00E+00	1.58E-03	MND
EP [kg Phosphate eq]	3.36E-03	1.10E-02	3.63E-04	0.00E+00	1.74E-02	0.00E+00	2.24E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.37E-05	0.00E+00	2.04E-04	MND
GWP [kg CO2 eq]	9.07E+00	4.07E+00	8.05E-01	0.00E+00	7.43E+01	0.00E+00	2.15E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-01	0.00E+00	3.72E-01	MND
ODP [kg CFC 11 eq]	3.35E-10	2.29E-14	2.21E-13	0.00E+00	4.48E-11	0.00E+00	5.03E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-15	0.00E+00	6.80E-14	MND
POCP [kg Ethene eq]	3.06E-03	5.46E-03	2.51E-04	0.00E+00	1.45E-02	0.00E+00	1.34E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.51E-05	0.00E+00	1.33E-04	MND

3.2 TRACI Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
AP [kg SO2 eq]	2.47E-02	1.10E-01	3.56E-03	0.00E+00	1.58E-01	0.00E+00	2.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.69E-04	0.00E+00	1.71E-03	MND
EP [kg N eq]	2.09E-03	3.79E-03	2.73E-04	0.00E+00	1.44E-02	0.00E+00	9.36E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.82E-05	0.00E+00	8.66E-05	MND
GWP [kg CO2 eq]	8.97E+00	4.07E+00	7.87E-01	0.00E+00	7.35E+01	0.00E+00	2.13E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-01	0.00E+00	3.69E-01	MND
ODP [kg CFC 11 eq]	3.35E-10	2.29E-14	2.21E-13	0.00E+00	4.48E-11	0.00E+00	5.03E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-15	0.00E+00	6.80E-14	MND
Resources [MJ]	2.70E+01	7.38E+00	1.98E+00	0.00E+00	1.46E+02	0.00E+00	5.57E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.91E-01	0.00E+00	7.41E-01	MND
POCP [kg O3 eq]	4.20E-01	2.08E+00	2.04E-02	0.00E+00	2.30E+00	0.00E+00	3.83E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-02	0.00E+00	3.39E-02	MND

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3.3 Resource Use Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
RPR_E [MJ]	2.08E+01	3.07E-01	8.93E-01	0.00E+00	7.05E+01	0.00E+00	3.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.55E-02	0.00E+00	4.18E-01	MND
RPR_M [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	MND
RPR_T [MJ]	2.08E+01	3.07E-01	8.93E-01	0.00E+00	7.05E+01	0.00E+00	3.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.55E-02	0.00E+00	4.18E-01	MND
$NRPR_E$ [MJ]	2.17E+02	5.19E+01	1.52E+01	0.00E+00	1.34E+03	0.00E+00	4.35E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E+00	0.00E+00	5.92E+00	MND
$NRPR_M$ [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	MND
$NRPR_T$ [MJ]	2.17E+02	5.19E+01	1.52E+01	0.00E+00	1.34E+03	0.00E+00	4.35E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E+00	0.00E+00	5.92E+00	MND
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
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	MND
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	MND
RE [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	MND
FW [m^3]	7.22E-02	1.20E-03	2.79E-03	0.00E+00	4.08E+00	0.00E+00	1.15E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.73E-04	0.00E+00	7.17E-04	MND

3.4 Output Flows and Waste Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD [kg]	2.06E-06	6.11E-08	8.37E-09	0.00E+00	6.50E-07	0.00E+00	3.22E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-08	0.00E+00	2.04E-08	MND
NHWD [kg]	1.72E-01	7.15E-04	2.94E-01	0.00E+00	2.15E+00	0.00E+00	1.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.40E-05	0.00E+00	8.43E+00	MND
HLRW [kg]	3.26E-06	2.39E-08	2.51E-07	0.00E+00	5.03E-05	0.00E+00	5.42E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.81E-09	0.00E+00	7.68E-08	MND
ILLRW [kg]	2.71E-03	1.96E-05	1.88E-04	0.00E+00	4.15E-02	0.00E+00	4.47E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.15E-06	0.00E+00	6.07E-05	MND
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
R [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	MND
MER [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	MND
EE [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	MND

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4. Dryback – 5 mm

4.1 CML Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-elements [kg Sb eq]	2.73E-05	1.73E-07	2.15E-07	0.00E+00	2.48E-04	0.00E+00	4.18E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.29E-08	0.00E+00	1.99E-07	MND
ADP-fossil fuel [MJ]	2.56E+02	6.41E+01	1.48E+01	0.00E+00	1.53E+03	0.00E+00	5.13E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E+00	0.00E+00	7.15E+00	MND
AP [kg SO2 eq]	2.68E-02	1.29E-01	2.77E-03	0.00E+00	1.89E-01	0.00E+00	2.41E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.33E-04	0.00E+00	1.95E-03	MND
EP [kg Phosphate eq]	3.88E-03	1.36E-02	3.64E-04	0.00E+00	2.16E-02	0.00E+00	2.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-04	0.00E+00	2.53E-04	MND
GWP [kg CO2 eq]	1.10E+01	5.03E+00	8.07E-01	0.00E+00	9.20E+01	0.00E+00	2.59E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-01	0.00E+00	4.61E-01	MND
ODP [kg CFC 11 eq]	4.19E-10	2.83E-14	2.22E-13	0.00E+00	5.55E-11	0.00E+00	6.29E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.31E-15	0.00E+00	8.44E-14	MND
POCP [kg Ethene eq]	3.62E-03	6.75E-03	2.52E-04	0.00E+00	1.80E-02	0.00E+00	1.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.35E-05	0.00E+00	1.65E-04	MND

4.2 TRACI Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
AP [kg SO2 eq]	2.86E-02	1.36E-01	3.57E-03	0.00E+00	1.96E-01	0.00E+00	2.55E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.82E-04	0.00E+00	2.12E-03	MND
EP [kg N eq]	2.35E-03	4.68E-03	2.74E-04	0.00E+00	1.78E-02	0.00E+00	1.11E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.73E-05	0.00E+00	1.07E-04	MND
GWP [kg CO2 eq]	1.09E+01	5.02E+00	7.90E-01	0.00E+00	9.13E+01	0.00E+00	2.58E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-01	0.00E+00	4.58E-01	MND
ODP [kg CFC 11 eq]	4.19E-10	2.83E-14	2.22E-13	0.00E+00	5.55E-11	0.00E+00	6.29E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.31E-15	0.00E+00	8.44E-14	MND
Resources [MJ]	3.31E+01	9.11E+00	1.98E+00	0.00E+00	1.81E+02	0.00E+00	6.77E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.38E-01	0.00E+00	9.19E-01	MND
POCP [kg O3 eq]	4.92E-01	2.56E+00	2.06E-02	0.00E+00	2.85E+00	0.00E+00	4.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-02	0.00E+00	4.21E-02	MND

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4.3 Resource Use Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
RPR_E [MJ]	2.17E+01	3.79E-01	8.95E-01	0.00E+00	8.73E+01	0.00E+00	3.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.41E-02	0.00E+00	5.18E-01	MND
RPR_M [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	MND
RPR_T [MJ]	2.17E+01	3.79E-01	8.95E-01	0.00E+00	8.73E+01	0.00E+00	3.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.41E-02	0.00E+00	5.18E-01	MND
$NRPR_E$ [MJ]	2.64E+02	6.42E+01	1.53E+01	0.00E+00	1.66E+03	0.00E+00	5.26E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E+00	0.00E+00	7.34E+00	MND
$NRPR_M$ [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	MND
$NRPR_T$ [MJ]	2.64E+02	6.42E+01	1.53E+01	0.00E+00	1.66E+03	0.00E+00	5.26E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E+00	0.00E+00	7.34E+00	MND
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
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	MND
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	MND
RE [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	MND
FW [m^3]	8.08E-02	1.48E-03	2.80E-03	0.00E+00	5.05E+00	0.00E+00	1.29E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.14E-04	0.00E+00	8.89E-04	MND

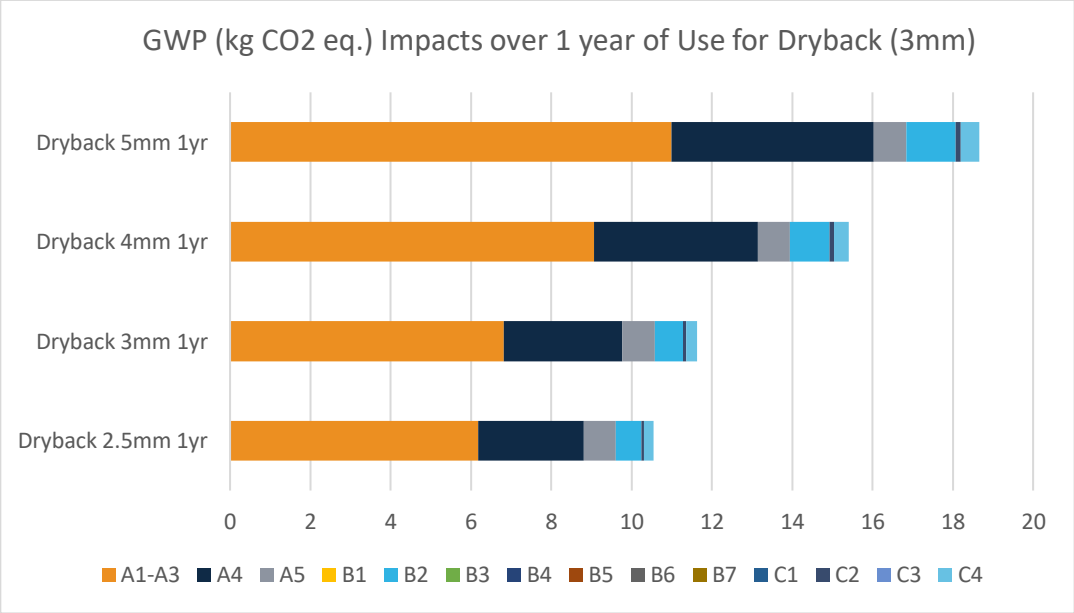
4.4 Output Flows and Waste Results

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD [kg]	2.57E-06	7.54E-08	8.53E-09	0.00E+00	8.05E-07	0.00E+00	4.02E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-08	0.00E+00	2.53E-08	MND
NHWD [kg]	1.88E-01	8.83E-04	3.35E-01	0.00E+00	2.68E+00	0.00E+00	1.65E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.69E-05	0.00E+00	1.05E+01	MND
HLRW [kg]	3.96E-06	2.95E-08	2.51E-07	0.00E+00	6.25E-05	0.00E+00	6.50E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.72E-09	0.00E+00	9.52E-08	MND
ILLRW [kg]	3.30E-03	2.42E-05	1.88E-04	0.00E+00	5.15E-02	0.00E+00	5.38E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.91E-06	0.00E+00	7.53E-05	MND
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
R [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	MND
MER [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	MND
EE [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	MND

Life Cycle Assessment Interpretation

The chart below shows the dominance analysis where vast majority of the impacts for all four products are in the aggregated A1-A3 phase. A1-A3 includes raw material sourcing, transportation and manufacturing. Overall, for Parterre's Luxury Vinyl Tile products, in the sourcing and extraction stage, the largest contributors to the impacts in terms of raw materials are PVC (30.25-33.57%) and DOTP (9.91-15.74%). Within manufacturing, electricity contributes to 6.89-10.10% of overall GWP impacts while thermal energy contributes to 3.87-5.67%. Between dryback products of varying thickness, impacts increase as the thickness of the product increases. This is due to the fact that thicker (eg. 5 mm) products have a higher mass and thus more raw materials than typically used in thinner (eg. 2.5 mm) products.

Following the A1-A3 phase, is A4 phase includes transportation of the product from the manufacturing facility to the customer. Global warming impacts from the transportation phase are due to the use of heavy fuel oil and diesel for shipping the product to the customer. Shipping to customer contributes around 24.13—28.9% of total GWP impacts, while, adhesive used during installation of dryback products contributes around 5.13% of GWP impacts. Detergent used to clean floor surface contributes to around 3.5% of total GWP impacts. Finally, disposal of the product contributes 2.9-3.3% to total GWP impacts.



Additional Environmental Information

25. Environment and Health During Manufacturing

Renewable resources and common materials are the basic ingredients used to create our flooring, all of our Luxury Vinyl flooring and surface products are mindful of the environment.

26. Environment and Health During Installation

All recommended personal protective equipment (PPE) should be utilized during installation, as indicated on the SDS and installation guidelines, found online. Parterre flooring and its adhesives emit minimal levels of volatile organic compounds (VOCs), which are dissipated quickly through normal ventilation. Products included in this EPD are FloorScore® certified for indoor air quality. Parterre flooring's moisture barrier ensures that spills do not penetrate the surface and cause microbial growth.

27. Extraordinary Effects

Fire

All products in the study meet ASTM E 648 for Flame Spread and ASTM E 662 for Smoke Evolution testing methods.

Water

Should the product become flooded, the water should be removed through means of extraction and drying, and the product should behave as originally intended. There are no environmental impacts associated with the product being flooded.

Mechanical Destruction

If the product is mechanically destroyed, it should be disposed of using standard procedures and replaced in a timely manner.

28. Environmental Activities and Certifications

Parterre's sustainable flooring and its adhesives emit minimal levels of volatile organic compounds (VOCs), which are dissipated quickly through normal ventilation. Parterre flooring's moisture barrier ensures that spills do not penetrate the surface and cause microbial growth. In addition, Parterre LVT is indoor air quality certified and conforms to California Specification 1350. Products included in this EPD are also FloorScore® certified and may be eligible for LEED credits. Additional information about the products can be found their Technical Resources (www.parterreflooring.com) page.

At Parterre, we're committed to more than just a beautiful floor; we also understand the importance of preserving the beauty around us. From production and installation to daily use and disposal, our products are mindful of the environment. Parterre has taken its cues from nature not only in the design of its products, but also in its corporate philosophy. At Parterre, we're interested in more than just a beautiful floor covering.

PARTERRE

FLOORING SYSTEMS