



Mannington®

COMMERCIAL

Rubber Tile Products

Programme: The International EPD® System

Programme operator: EPD International AB

EPD registration number: S-P- 06900

Publication Date: 07-15-2024

Revision Date: 12-11-2025 (Version 2.0)

Valid Until: 07-15-2029

www.environdec.com

This EPD was done in accordance with ISO 14025 and ISO 21930.
This EPD does not comply with EN15804+A2.



Programme and Programme Operator	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com as provided by EPD North America
General Program instructions and Version Number¹	General Programme Instructions for the International EPD® System. Version 4.0. 2021-03-29
Manufacturer Name and Address	Mannington Commercial 75 Mannington Mills Road Salem, NJ 08079
Declaration Number	S-P- 06900
Declared Product and Functional Unit	Mannington Rubber Tile 1 m ² of installed flooring and with a building service life of 75 years
Reference PCR and Version Number²	UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements, Version 4.0 UL Part B: Flooring EPD Requirements. UL 10010-7, September 28, 2018
Product's intended Application and Use	Commercial Flooring Applications
Product RSL	35 years
Markets of Applicability	North America
Date of Issue	07-15-2024
Period of Validity	07-15-2029
EPD Type	Product Specific
Range of Dataset Variability	N/A
EPD Scope	Cradle to Grave
Year of reported manufacturer primary data	2022
LCA Software and Version Number	MLC Database 2023.1 (formerly GaBi Database)
LCI Database and Version Number	LCA FE 10.9 (formerly GaBi)
LCIA Methodology and Version Number	TRACI 2.1 CML 2001-Jan 2016 IPCC AR5
Part A PCR review was conducted by:	Lindita Bushi, PhD, Chair Hugues Imbeault-Tétreault, Eng., M.A.Sc. Jack Geibig
The sub-category PCR review was conducted by:	Jack Geibig (Chair) Thomas Gloria, PhD Thaddeus Owen
Independent third-party verification of the declaration and data, according to ISO 14025:2008.	<input type="checkbox"/> EPD Process Certification <input checked="" type="checkbox"/> EPD Verification <input type="checkbox"/> Pre-Verified Tool
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," v4.0, 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) <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	James Mellentine, Thrive ESG
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:	James Mellentine, Thrive ESG
The procedure for follow-up of data during EPD validity, as defined by the GPI, involves third party verifier:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

¹Not all requirements in the GPI are fulfilled, particularly the requirement, for construction products, to follow EN 15804 for certain aspects of the LCA method.

²This EPD is based on a PCR that satisfies procurement rules at the federal, state, and municipal levels which call for EPDs based on the UL Part B PCR. The UL Part B PCR was used to meet regulatory (example: Buy Clean California Act, etc.) and market expectations (example: Building Transparency EC3 comparisons, LEED and existing vendor procurement requirements, product scoring programs, etc.). The EPD should not be used outside of this context.

Limitations:
Environmental declarations from different programs (ISO 14025) may not be comparable.
The declared environmental performance in the EPD shall not be compared with EN 15804-compliant EPDs developed under PCR 2019:14 in the International EPD System.
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.
The EPD owner has the sole ownership, liability, and responsibility of the EPD.

Product Definition and Information

Company Description

Founded in 1915, Mannington continues to pursue its commitment to quality, customer satisfaction and the environment through innovative product design and marketing, state-of-the-art processes, and industry-leading programs. It manufactures and supplies a portfolio of flooring products including residential and commercial sheet vinyl, luxury vinyl, laminate, hardwood floors, carpet, and rubber.

Product Description

ColorScape®

ColorScape® tile from the Color Anchor Collection bring imagination and beauty to your floor, with the enhanced safety, cleanability and durability of our high-performance rubber tile. The variety of profiles and colors provide endless visual and textural possibilities, while working beautifully with other Color Anchor flooring types.



Figure 1: ColorScape® Product Image

ColorSpec®

ColorSpec® tile from the Color Anchor Collection bring imagination and beauty to your floor, with the enhanced safety, cleanability and durability of our high-performance rubber tile. The variety of profiles and colors provide endless visual and textural possibilities, while working beautifully with other Color Anchor flooring types.



Figure 2: ColorSpec® Product Image

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OpenRange

Inspired by the rugged aesthetic of America's Old West, Open Range offers rustic wood visuals in a hard-working rubber plank format. Incredibly realistic detail sets these rubber planks apart from the rest. The product features rich texturing to bring the wood visuals to life with shadows and highlights. The tonal patterns provide high variation from plank to plank for added authenticity. Mannington Commercial is committed to helping its customers reduce the negative impact of their projects by improving our operations and offsetting this collection's embodied carbon by 105% from cradle to gate.



Figure 3: OpenRange Product Image

Teles

Teles rubber tile delivers - on durability, cleanability, indentation resistance, and styling. Our chemists worked to develop a premium formulation for rubber flooring to provide exceptional, long-term appearance retention in the most demanding commercial applications. This proprietary rubber compound creates a smooth rubber tile with more than double the industry standard for indentation resistance.



Figure 4: Teles Product Image

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ColorSpec Stair Tread

Available in square and sculptured profiles. Blend style with performance with our non-directional design stair treads. ColorSpec Stair Tread with our superior rubber formulation, thermoset vulcanized rubber (type ts), offers a slip-resistant surface, while preserving your design from scuffing, gouging, and abrasions. A vinyl alternative product, our rubber's natural luster requires no waxing or stripping and coordinates with our rubber tile.



Figure 5: ColorSpec Stair Tread Product Image

ColorScape Stair Tread

Available in round, square, and sculptured profiles. ColorScape Stair Treads with our superior rubber formulation, thermoset vulcanized rubber (type ts), offers a slip-resistant surface, while preserving design from scuffing, gouging, and abrasions. A vinyl alternative product, our rubber's natural luster requires no waxing or stripping and coordinates with our rubber tile. Available in our 36 Accord Colors which spans the entire premium flooring line of rubber tile, stair treads, wall base, and finishing accessories.

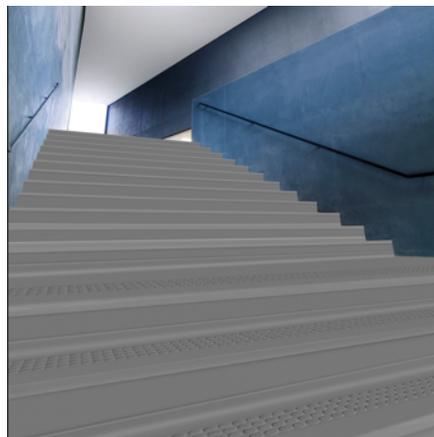


Figure 6: ColorScape Stair Tread Product Image

Application

Mannington Rubber products are intended for use in high traffic commercial interior spaces including but not limited to healthcare, educational, office, assisted living, and retail.

Properties of Declared Product as Delivered

Rubber flooring products are typically packaged in cardboard and plastic wrap and loaded onto a pallet for shipment.

Table 1: Technical Data

Name		ColorScape	ColorSpec	OpenRange	Teles	ColorSpec Stair Tread	ColorScape Stair Tread
Product Thickness [mm]		3.2	3.2	3.2	3.2	3.2	3.2
Wear Layer Thickness (where Applicable)* [mm]		0	0	0	0	0	0
Product Weight [kg/m ²]		4.6	4.6	5.3	4.7	8.6	8.6
Product Form [mm ²]	Square Tiles	460 x 460 920.8 x 920.8	460 x 460 920.8 x 920.8	165.10 x 1066.80	889 x 889 445 x 445	-	-
	Sculptured Tiles	460 x 460 914.4 x 914.4	460 x 460 914.4 x 914.4	-	-	910 x 330 1220 x 330 1520 x 330 1830 x 330	910 x 330 1220 x 330 1520 x 330 1830 x 330
	Round Tiles	460 x 460 917.7 x 917.7	460 x 460 917.7 x 917.7	-	-	-	-
	Planks	-	-	-	445 x 889 148 x 889	-	-

Flow Diagram

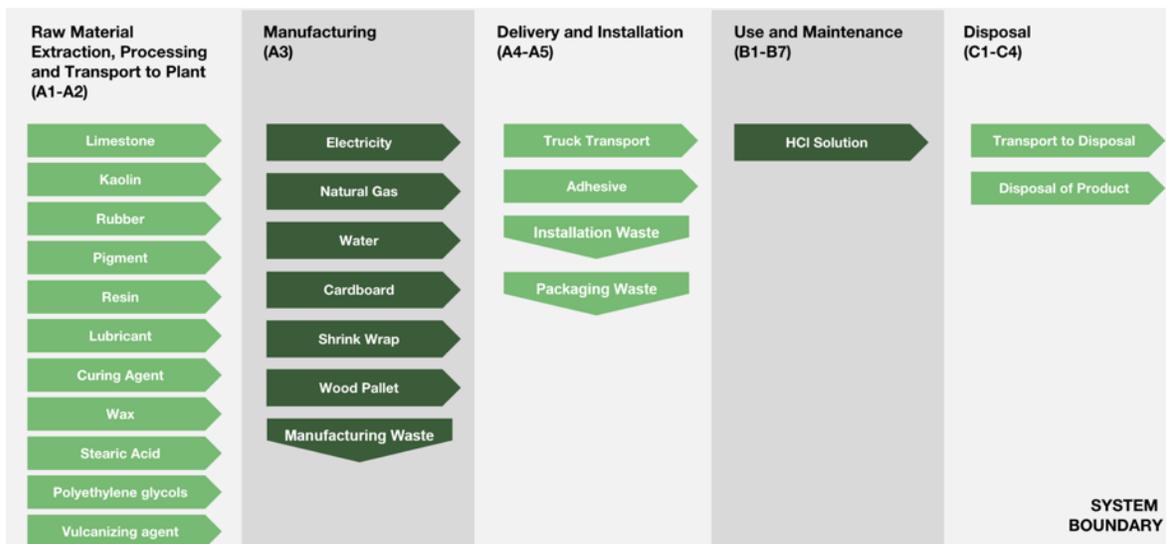


Figure 7: System Boundary

Manufacturing and Packaging

Mannington Rubber Flooring is manufactured in Calhoun, GA. Raw materials arrive at the facility, where they are mixed, vulcanized, and then molded into the desired shape and profile. Each rubber flooring product is then cut to size, packaged in cardboard and plastic wrap, and loaded onto a pallet for transport to customer. 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. No substances required to be reported as hazardous are associated with the production of this product.

Table 2: Product Composition

Raw Material	ColorScape	ColorSpec	OpenRange	Teles	ColorScape Stair Tread	ColorSpec Stair Tread
Additional Pigment	7%	5%	<1%	3%	7%	10%
E-SBR	22%	21%	17%	-	22%	45%
Kaolin	40%	37%	25%	44%	40%	79%
LDPE	<1%	<1%	<1%	<1%	<1%	<1%
Limestone	12%	9%	8%	-	12%	20%
Petroleum Hydrocarbon Resin	2%	-	-	3%	2%	-
Phenol	-	-	-	<1%	-	-
Polyethylene glycols	<1%	<1%	<1%	<1%	<1%	<1%
S-SBR	4%	4%	3%	32%	4%	9%
Silane Coupling Agent	-	-	-	2%	-	-
Silica	6%	4%	4%	9%	6%	9%
Stearic Acid	<1%	<1%	<1%	<1%	<1%	<1%
Titanium Dioxide Pigment	-	-	1%	3%	-	-

Vulcanizing & Curing Agents	2%	2%	1%	3%	2%	4%
Wax	2%	2%	1%	1%	2%	3%
<i>Note: Due to rounding, columns may not exactly add to 100%.</i>						

Table 3: Product Packaging

Material	ColorScape®	ColorSpec®	OpenRange	Teles	ColorSpec Stair Tread	ColorScape Stair Tread
Cardboard [kg per m ²]	9.21E-01	9.25E-01	1.07E+00	9.42E-01	1.72E+00	1.72E+00
Plastic Film [kg per m ²]	5.00E-03	5.00E-03	5.00E-03	5.00E-03	9.00E-03	9.00E-03
Pallet [kg per m ²]	6.51E-01	6.54E-01	7.58E-01	6.65E-01	1.22E+00	1.22E+00

Transportation

Raw materials for all flooring products are obtained from Asia, Europe, and the United States. The materials are delivered to the manufacturing facility via truck. Distances were calculated using the supplier location and the location of manufacturing.

Product Installation

Installation of rubber flooring products involves hand tools for adhesive application. MR911 is the adhesive used in this model because it can be used with all rubber tile and is the only adhesive that should be used with Teles rubber tile. Adhesive is applied to the subfloor. It should never be applied directly to the tile. Emissions from the adhesive during installation were considered for this assessment. However, no emissions were modeled due to the manufacturer-recommended adhesives having low- to no-VOC content. Further installation information can be found at on Mannington's [website](#).

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.

Use

Maintenance inputs were estimated based on the [RFCi industry wide EPD](#). Rubber tile products are traditionally not repaired or refurbished and are only replaced if the product fails or a new look is desired.

Table 4: Maintenance Procedure

Level of Use	Cleaning Process	Cleaning Frequency	Consumption of Energy and Resources
Commercial/ residential/ industrial	Dust mop	Daily	None
	Damp mop/ Neutral cleaner	Weekly (3,900 cycles/ESL)	Hot water, neutral detergent

Table 5: Cleaning Inputs

Component	Amount	Units
Detergent	119	mL/m ² /yr
Water	5.8	L/m ² /yr

Reference Service Life and Estimated Building Service Life

In this study, the reference service life (RSL) of the Rubber Tile products is assumed to be 35 years given that the product is installed as per manufacturer guidelines. Preliminary testing data on the product shows the RSL to not be significantly different from a typical rubber floor. Because of this, the RSL was chosen to match the value selected for the RFCI industry wide rubber floor EPD. (RFCI, 2019). Therefore, after initial installation in a building with an estimated service life (ESL) of 75 years there will be 1.1 replacements needed after the initial installation.

Reuse, Recycling and Energy Recovery

Mannington rubber flooring is assumed to be manually scraped off the floor and disposed to a landfill. Mannington rubber flooring is typically not reused or recycled following removal. Thus, reuse, recycling, and energy recovery are not applicable for this product.

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

Declaration of Methodological Framework

The LCA follows an attributional approach.

Functional Unit

The functional unit of the flooring product is one (1) m² of floor covering. The mass per functional unit is Table 6.

Table 6: System Boundary and Modules

Product Name	Mass Per Functional Unit [kg/m ²]
ColorScape	4.58
ColorSpec	4.60
Open Range	5.33
Teles	4.69
ColorSpec Stair Tread	8.57
ColorScape Stair Tread	8.57

System Boundary

This EPD is a Cradle-to-Grave study.

Table 7: System Boundary and Modules

Module Name	Description	Analysis Period	Summary of Included Elements
A1	Product Stage: Raw Material Supply	2025	Raw Material sourcing and processing as defined by secondary data.
A2	Product Stage: Transport	2025	Shipping from supplier to manufacturing site. Fuel use requirements estimated based on product weights and estimated distance.
A3	Product Stage: Manufacturing	2022	Energy and water inputs required for manufacturing products from raw materials. Packaging materials and manufacturing waste are included as well.
A4	Construction Process Stage: Transport	2022	Shipping from manufacturing site to project site. Fuel use requirements estimated based on product weights and mapped distance.
A5	Construction Process Stage: Installation	2022	Installation materials, installation waste and packaging material waste.
B1	Use Stage: Use	2022	Use of the product.
B2	Use Stage: Maintenance	2022	Cleaning energy, water, and materials, including refinishing the product.
B3	Use Stage: Repair	2022	Product typically not repaired during use.
B4	Use Stage: Replacement	2022	Total materials and energy required to manufacture a replacement.
B5	Use Stage: Refurbishment	2022	Product typically not refurbished during use.

Module Name	Description	Analysis Period	Summary of Included Elements
B6	Operational Energy Use	2022	Operational Energy Use of Building Integrated System During Product Use
B7	Operational Water Use	2022	Operational Water Use of Building Integrated System During Product Use
C1	EOL: Deconstruction	2022	No inputs required for deconstruction.
C2	EOL: Transport	2022	Shipping from project site to waste disposal.
C3	EOL: Waste Processing	2022	Waste processing if incineration as chosen disposal pathway per Part A of the PCR.
C4	EOL: Disposal	2022	Disposal modeled by region as per Part A of the PCR.
D	Benefits beyond system	MND	Credits from energy or material capture.

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 were collected as annual totals for manufacturing utilities and production volume. For the LCA, the manufacturing utilities were divided by the production to find an energy use per square meter. Another assumption is that the installation tools are used enough times that the per-square meter impacts are negligible.

Cut-Off Criteria

A cut-off rule of 1% has been applied to this assessment, meaning the included inventory data must account for greater than 99% of the total material and energy inputs into the system. Furthermore, greater than 99% of the environmental impacts from the product system must be accounted for in the assessment. During the data collection year, one category of non-hazardous waste was reported, however, due to low total weight relative to the functional unit, this waste was excluded. Additionally, for suppliers outside of North America, transportation from the supplier's manufacturing location to port was excluded via cut-off as impacts are assumed to be negligible. Cumulative excluded inputs within the life cycle account for less than 1% of the total mass inputs, energy inputs, and environmental impacts.

Data Sources

Primary data were used for all manufacturing processes. When primary data did not exist, secondary data for raw material production were obtained from the Sphera Managed LCA Content database.

Data Quality

The geographical scope of the manufacturing portion of the life cycle is United States. 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 2022. Time coverage of this data is considered excellent. Primary data provided by the manufacturer are specific to the technology used in manufacturing their product. They are site-specific and considered of good quality. Data necessary to model cradle-to-gate unit processes were sourced from Sphera Managed LCA Content LCI datasets. Improved life cycle data from suppliers would improve technological coverage.

Allocation

General principles of allocation were based on ISO 14040/44.

To derive a per-unit value for manufacturing utilities, allocation based on total production by mass was adopted. As a default, secondary Sphera Managed LCA Content datasets use a physical basis for allocation.

Of relevance to the defined system boundary is the method in which recycled materials were handled. 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, though ColorScape, ColorSpec, ColorRange, Teles, ColorSpec Stair Tread, and ColorScape Stair Tread do not contain any recycled materials.

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.

Comparison of the environmental performance of construction works and construction products using EPD information shall be based on the product's use and impacts at the construction works level. In general, EPDs may not be used for comparability purposes when not considered in a construction works context. Given this PCR ensures products meet the same functional requirements, comparability is permissible provided the information given for such comparison is transparent and the limitations of comparability explained.

Table 8: Life Cycle Stages Included in the Study

Production			Construction		Use							End of Life				Benefits & Loads Beyond 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 to Site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction	Transport	Waste Processing	Disposal	Reuse, Recovery, Recycling Potential
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	MND

X = Module Included in LCA Report, MND = Module not Declared

Life Cycle Assessment Scenarios

Table 9: Transportation to Building Site (A4)

	ColorScape	ColorSpec	OpenRange	Teles	ColorSpec Stair Tread	ColorScape Stair Tread
Vehicle Type	Truck - Heavy Heavy-duty Diesel Truck / 53,333 lb payload - 8b					
Fuel Efficiency [L/100km]	42					
Fuel Type	Diesel					
Distance [km]	800					
Capacity Utilization [%]	68%					
Capacity Utilization Volume Factor	1					
Weight of Products Transported [kg]	6.16	6.18	7.16	6.30	11.52	11.52

Table 10: Reference Service Life

Name	Valuecar
RSL [years]	35
Declared product properties (at the gate) and finishes, etc.	See Table 1 for technical details
An assumed quality of work, when installed in accordance with the manufacturer's instructions	Per industry standards
Maintenance	See Use section above for maintenance instructions

Table 11: Installation at building site (A5)

	ColorScape	ColorSpec	OpenRange	Teles	ColorSpec Stair Tread	ColorScape Stair Tread
Adhesive [kg]	1.19E-01					
Wood Packaging Waste to Landfill [kg]	1.76E-01	1.77E-01	2.05E-01	1.80E-01	3.29E-01	3.29E-01
Wood Packaging Waste to Incineration [kg]	3.25E-02	3.27E-02	3.79E-02	3.33E-02	6.08E-02	6.08E-02
Wood Packaging Waste to Recycling [kg]	4.43E-01	4.45E-01	5.15E-01	4.52E-01	8.27E-01	8.27E-01
Paper Packaging Waste to Landfill [kg]	2.49E-01	2.50E-01	2.90E-01	2.54E-01	4.65E-01	4.65E-01
Paper Packaging Waste to Incineration [kg]	4.61E-02	4.63E-02	5.36E-02	4.71E-02	8.61E-02	8.61E-02
Paper Packaging Waste to Recycling [kg]	6.27E-01	6.29E-01	7.29E-01	6.40E-01	1.17E+00	1.17E+00
Plastic Packaging Waste to Landfill [kg]	3.39E-03	3.41E-03	3.95E-03	3.47E-03	6.34E-03	6.34E-03
Plastic Packaging Waste to Incineration [kg]	7.79E-04	7.83E-04	9.07E-04	7.96E-04	1.46E-03	1.46E-03
Plastic Packaging Waste to Recycling [kg]	4.13E-04	4.14E-04	4.80E-04	4.22E-04	7.71E-04	7.71E-04
Biogenic Carbon Content of Packaging						
Cardboard [kg CO ₂]	1.50E+00	1.51E+00	1.75E+00	1.53E+00	2.81E+00	2.81E+00
Wood [kg CO ₂]	1.06E+00	1.07E+00	1.23E+00	1.08E+00	1.98E+00	1.98E+00
VOCs						
VOC Emissions [mg/m ³]	0.5-5					
No freshwater, electricity, or fuels are used in installation. Emissions from the adhesive during installation were considered for this assessment. However, no emissions were modeled due to the manufacturer-recommended adhesives having low- to no-VOC content. Cardboard and paper packaging is combined.						

Table 12: Maintenance (B2)

Details	Value	Unit
Maintenance process information	Industry wide EPD by RFCI	-
Maintenance cycle	1,820 (weekly)	Cycles/ RSL
Maintenance cycle	3,900 (weekly)	Cycles/ ESL
Net freshwater consumption	0.435	m ³ /ESL
Detergent	8.9	kg/ESL

Table 13: End-of-Life Scenario Details (C1-C4)

	Value
Collected as mixed construction waste [kg/m ²]	4.58-8.57
Waste to Landfill [kg/m ²]	4.58-8.57
Distance to Landfill [km]	161

Life Cycle Assessment Results

All results are given per functional unit, which is 1 m² of installed flooring over an estimated building life of 75 years. Environmental impacts were calculated using the Sphera LCA for Experts software platform. Impact results have been calculated using IPCC AR5, 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. The Impact Category Key table gives definitions of relevant acronyms.

The LCIA impact categories referenced below 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.

Table 14: Impact Category Key – LCIA Indicators

Abbreviation	Parameter	Unit
IPCC AR5		
GWPe	Global warming potential (100 years, excludes biogenic CO ₂)	kg CO ₂ eq
GWPi	Global warming potential (100 years, includes biogenic CO ₂)	kg CO ₂ eq
CML 2001-Jan 2016		
GWPe	Global warming potential (100 years, excludes biogenic CO ₂)	kg CO ₂ eq
GWPi	Global warming potential (100 years, includes biogenic CO ₂)	kg CO ₂ eq
ODP	Depletion of stratospheric ozone layer	kg CFC 11 eq
AP	Acidification potential of soil and water	kg SO ₂ eq
EP	Eutrophication potential	kg Phosphate eq
POCP	Photochemical ozone creation potential	kg Ethene eq
ADPE	Abiotic depletion potential for non-fossil resources	kg Sb eq
ADPF	Abiotic depletion potential for fossil resources	MJ, net calorific value
TRACI 2.1		
AP	Acidification potential of soil and water	kg SO ₂ eq
EP	Eutrophication potential	kg N eq
GWPe	Global warming potential (100 years, excludes biogenic CO ₂)	kg CO ₂ eq
GWPi	Global warming potential (100 years, includes biogenic CO ₂)	kg CO ₂ eq
ODP	Depletion of stratospheric ozone layer	kg CFC 11 eq
Resources	Depletion of non-renewable fossil fuels	MJ, surplus energy
SFP	Smog formation potential	kg O ₃ eq

Table 15 :Impact Category Key - Biogenic Carbon Indicators

Abbreviation	Parameter	Unit
BCRP	Biogenic Carbon Removal from Product	[kg CO ₂]
BCEP	Biogenic Carbon Emission from Product	[kg CO ₂]
BCRK	Biogenic Carbon Removal from Packaging	[kg CO ₂]
BCEK	Biogenic Carbon Emission from Packaging	[kg CO ₂]

Abbreviation	Parameter	Unit
BCEW	Biogenic Carbon Emission from Combustion of Waste from Renewable Sources Used in Production Processes	[kg CO ₂]
CCE	Calcination Carbon Emissions	[kg CO ₂]
CCR	Carbonation Carbon Removals	[kg CO ₂]
CWNR	Carbon Emissions from Combustion of Waste from Non- Renewable Sources used in Production Processes	[kg CO ₂]

Table 16: Impact Category Key – Resource Use, Waste, and Output Flow Indicators

Abbreviation	Parameter	Unit
Resource Use Parameters		
RPRE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ, net calorific value (LHV)
RPRM	Use of renewable primary energy resources used as raw materials	MJ, net calorific value
RPRT	Total use of renewable primary energy resources	MJ, net calorific value
NRPRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ, net calorific value
NRPRM	Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value
NRPRT	Total use of non-renewable primary energy resources	MJ, net calorific value
SM	Use of secondary materials	kg
RSF	Use of renewable secondary fuels	MJ, net calorific value
NRSF	Use of non-renewable secondary fuels	MJ, net calorific value
RE	Recovered energy	MJ, net calorific value
FW	Net use of fresh water	m ³
Waste Parameters and Output Flows		
HWD	Disposed-of-hazardous waste	kg
NHWD	Disposed-of non-hazardous waste	kg
HLRW	High-level radioactive waste, conditioned, to final repository	kg
ILLRW	Intermediate- and low-level radioactive waste, conditioned, to final repository	kg
CRU	Components for reuse	kg
MR	Materials for recycling	kg
MER	Materials for energy recovery	kg
EEE	Exported electrical energy	MJ
EET	Exported thermal energy	MJ

Life Cycle Assessment Interpretation

Within the rubber product lifecycle, replacements (B4) drive TRACI 2.1 impacts. We see replacement emerge as a dominant life cycle stage due to the 35-year service life of the product. The 35-year product service life means that at least one full replacement of the rubber product will occur over the estimated 75-year service life of a building. Each replacement includes A1-A5 and C1-C4 lifecycle stages, explaining its outsized impact.



Figure 8: TRACI 2.1 Summary

Additional Environmental Information

Environmental and Health During Manufacturing

Mannington's Rubber Tile products are produced in a facility that is ISO 14001 certified.

Environment and Health During Installation

The product should be installed according to the manufacturer's instructions on Mannington's [website](#).

This is a non-hazardous product. According to the product's PDS, due to solid, inert properties, scrap pieces from installation may simply be swept up and disposed of as solid, non-hazardous waste per local, state, and federal regulations.

Extraordinary Effects

Fire

Mannington Rubber received ≤ 450 on the ASTM E662 - NBS Smoke Test.

Water

Should the product become flooded, the floor covering should be removed, and the subfloor should be evaluated and repaired as needed. There are no environmental impacts associated with the product being flooded.

Mechanical Destruction

According to the product's PDS, this building product is relatively non-toxic, presenting no known hazard to people, except under thermal decomposition conditions which may yield hazardous by-products.

Environmental Activities and Certifications

Mannington Rubber is certified CRI Green Label Plus and NSF/ANSI 140 Gold. Additionally, Mannington Rubber has a published [Declare Label \(ColorScape, ColorSpec, and OpenRange\)](#), [Declare Label \(ColorSpec Stair Treads and Risers\)](#), [HPD \(ColorScape, ColorSpec, OpenRange, Teles\)](#), [HPD \(Premium TS Molded Wall Base\)](#), and [HPD \(TS Stair Treads and Risers\)](#).

Additional information about the products can be found on Mannington's [Technical Resources](#) page.

Differences Versus Previous Versions

07-15-2024 Version 1

12-11-2025 Version 2

Technology change: Product composition was updated for all products. All related tables and results were updated. GWP including biogenic carbon and Carbon Emissions and Uptake indicators, were added.

References

- CML - Department of Industrial Ecology. (2016, September 05). *CML-IA Characterisation Factors*. Retrieved from <https://www.universiteitleiden.nl/en/research/research-output/science/cml-ia-characterisation-factors>
- (n.d.). *General Programme Instructions of the International EPD System. Version 4.0*.
- IPCC. (2013). *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.
- ISO. (2006). *ISO 14025: Environmental labels and declarations - Type III environmental declarations - Principles and procedures*. Geneva: International Organization for Standardization.
- ISO. (2006). *ISO 14040/Amd 1:2020: Environmental management - Life cycle assessment - Principles and framework*. Geneva: International Organization for Standardization.
- ISO. (2006). *ISO 14044/Amd 1:2017/Amd 2:2020: Environmental Management - Life cycle assessment - Requirements and Guidelines*. Geneva: International Organization for Standardization.
- ISO. (2017). *ISO 21930: Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services*. Geneva: International Organization for Standardization.
- UL Environment. (2018). *Part B: Flooring EPD Requirements*.
- UL Environment. (2022). *Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010, V4.0*.
- US EPA. (2012). *TRACI: The Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts. Version 2.1 - User Guide*. Retrieved from <https://nepis.epa.gov/Adobe/PDF/P100HN53.pdf>
- Life Cycle Assessment for Flooring, Mannington Commercial, WAP Sustainability Consulting, November, 2025

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