Mannington COMMERCIAL

Captivate Wool Rugs

Programme: The International EPD® System
Programme operator: EPD International AB
Licensee: EPD North America (www.epdna.com)
EPD registration number: EPD-IES-0025653:001
Publication Date:01-06-2026
Valid Until: 01-06-2031
www.environdec.com

This EPD was done in accordance with ISO 14025 and ISO 21930.
This EPD does not comply with EN15804+A2.
EPD of multiple products, based on the average results of the product group.
An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com.

NORTH AMERICA EPD
INTERNATIONAL EPD SYSTEM

Mannington COMMERCIAL

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 Number[1]	General Programme Instructions for the International EPD® System. Version 5.0. 2021-03-29
Manufacturer Name and Address	Mannington Commercial 75 Mannington Mills Road Salem, NJ 08079
Declaration Number	EPD-IES-0025653:001
Declared Product and Functional Unit	Mannington Captivate Wool Rugs 1 m^2 of installed flooring and with a building service life of 75 years
Reference PCR and Version Number[2]	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	15 years
Markets of Applicability	North America
Date of Issue	01-06-2026
Period of Validity	01-06-2031
EPD Type	Product Specific
Range of Dataset Variability	N/A
EPD Scope	Cradle to Grave
Year of reported manufacturer primary data	2023
LCA Software and Version Number	LCA FE 10.9.1.17 (formerly GaBi)
LCI Database and Version Number	MLC Database 2025.1 (formerly GaBi Database)
LCIA Methodology and Version Number	TRACI 2.1 CML 2001-Jan 2016 IPCC AR6
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 14025:2006.	☒ EPD Verification through an Individual EPD Verification ☐ EPD Verification through an EPD Process certification ☐ EPD Verification through an Pre-Verified LCA/EPD 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) **☐ Internal ☒ 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:	☐ Yes ☒ No

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

Information about EPD Owner

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 Wool Rugs.

EPD Owner
Mannington
75 Mannington Mills Road
Salem, NJ 08079
Brian.Kuritz@mannington.com

LCA Practitioner
WAP Sustainability Consulting
103 Powell Ct, Suite 200
Brentwood, TN 37027
rose@wapsustainability.com

Mannington COMMERCIAL

Product Information

Product Description

Luxuriously textured rugs bring the natural beauty of wool to your floors. Offered in two running line patterns, Dazzle and Delight, each rug is hand-loomed with 100% wool, creating a sumptuous underfoot feel. Unified colorways flow seamlessly across the collection, making it effortless to design harmonious, elevated interiors that captivate through timeless beauty.

Captivate by Mannington Commercial is a hand-loomed 100% New Zealand wool rug collection, textured and level-striated to bring the organic natural beauty of wool to commercial interiors.

Figure 1: Captivate Product Image

Application

Mannington Captivate Wool Rugs products are intended for use as interior flooring in wellness environments, specialty retail, and multi-family residential complexes.

Properties of Declared Product as Delivered

Captivate Wool Rugs products are typically packaged in hessian, paper, plastic, and silica gel for shipment to the customer.

Table 1: Technical Data

Name	Dazzle	Delight
Yarn Type	Wool	
Primary Backing Type	Cotton	
Secondary Backing Type	Polypropylene	
CRI Rating [2.5 Moderate, 3.0 Heavy, 3.5 Severe]	2.5	2.5
Total Thickness [mm]	10.17	10.68
Product Weight [g/m^2]	3,775	
Surface pile thickness [mm]	6.17	6.68
Surface pile weight [g/m^2]	1,900	1,900

Manufacturing Sites

Mannington Wool Rugs are manufactured in Bhadohi, India.

Mannington COMMERCIAL

Content Declaration

Manufacturing and Packaging

Mannington Captivate Wool Rugs is manufactured in Bhadohi, India. The manufacturing process involves weaving dyed and dried yarn into the rug's design. Subsequently, the fabric structure, pile, and a latex back coating are applied. The carpet is then dried, followed by surface finishing processes such as leveling, carving, or beveling to enhance its appearance. Finally, the rugs undergo a thorough cleaning, are precisely measured, rolled, and packed for warehousing and distribution. The wool rugs are packaged in hessian, paper, plastic, and silica gel for shipment to the 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

Material	Dazzle [kg]	Delight [kg]
Latex	1.25E+00	1.25E+00
Primary backing (cotton)	5.76E-01	5.76E-01
Secondary Backing	4.98E-02	4.98E-02
Wool Yarn	1.90E+00	1.90E+00

Table 3: Product Packaging

Material	Dazzle [kg/m²]	Delight [kg/m²]	Biogenic Material [kg CO_2/m²]
Hession	9.95E-02		1.53E-01
Paper	1.87E-01		2.95E-01
Plastic	1.64E-01		-
Silica gel	2.70E-03		-

Transportation

Raw materials for all flooring products are obtained from Asia and New Zealand. The materials are delivered to the manufacturing facility via ship and truck. Distances were calculated using the supplier location and the location of manufacturing.

Product Installation

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 (UL Environment, 2022). Installation instructions can be found on Mannington's website.

Use

This stage contains all the energy, water, and materials related to the use of the product, including cleaning, maintenance, and replacements. The maintenance of wool rugs depends on where it is installed in terms of foot traffic and level of use.

Mannington COMMERCIAL

Detailed maintenance instructions for wool rugs are provided on Mannington's website.

Table 4: Maintenance Procedure

Level of Use	Cleaning Process	Cleaning Frequency	Consumption of Energy and Resources
Commercial/ residential/ industrial	Vacuuming	Twice a week	Electricity
	Deep cleaning	Twice a year	Electricity, cleaning solution

Table 5: Cleaning Inputs

Component	Amount	Units
Detergent	0.1	kg/yr/m^2
Electricity	0.445	kWh/yr/m^2
Water	1.9	kg/yr/m^2

Reference Service Life and Estimated Building Service Life

In this study, the reference service life (RSL) of the Wool Rugs is 15 years. Therefore, after initial installation in a building with an estimated service life (ESL) of 75 years there will be 4 replacements needed after the initial installation.

Reuse, Recycling and Energy Recovery

Mannington Wool Rugs is assumed to be manually removed and disposed to a landfill. Mannington Wool Rugs 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.

Mannington COMMERCIAL

Life Cycle Assessment Information

Flow Diagram

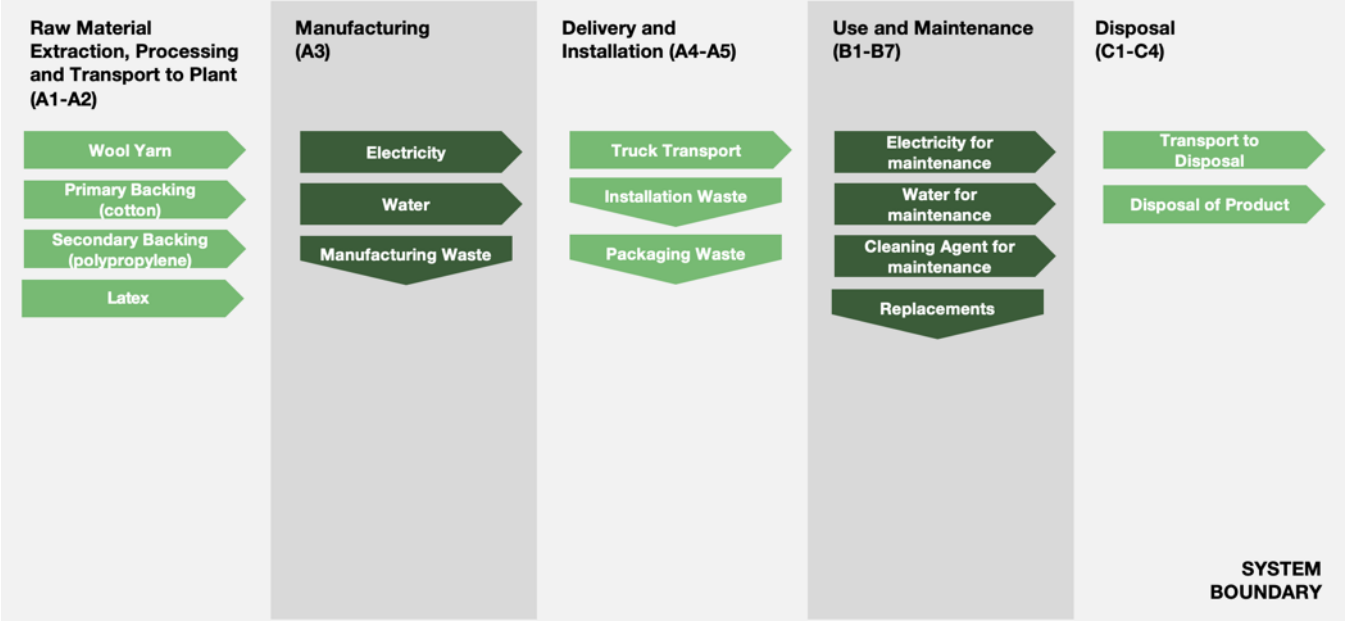

Figure 2: System Boundary

Declaration of Methodological Framework

The LCA follows an attributional approach.

Functional Unit

The functional unit is one (1) m^2 of floor covering. The mass per functional unit is in Table 6.

Table 6: System Boundary and Modules

Product Name	Mass Per Functional Unit [kg/m^2]
Dazzle	3.775
Delight	3.775

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	2023	Raw Material sourcing and processing as defined by secondary data.
A2	Product Stage: Transport	2023	Shipping from supplier to manufacturing site. Fuel use requirements estimated based on product weights and estimated distance.
A3	Product Stage: Manufacturing	2023	Energy and water inputs required for manufacturing products from raw

Module Name	Description	Analysis Period	Summary of Included Elements
			materials. Packaging materials and manufacturing waste are included as well.
A4	Construction Process Stage: Transport	2023	Shipping from manufacturing site to project site. Fuel use requirements estimated based on product weights and mapped distance.
A5	Construction Process Stage: Installation	2023	Installation materials, installation waste and packaging material waste.
B1	Use Stage: Use	2023	Use of the product.
B2	Use Stage: Maintenance	2023	Cleaning energy, water, and materials, including refinishing the product.
B3	Use Stage: Repair	2023	Product typically not repaired during use.
B4	Use Stage: Replacement	2023	Total materials and energy required to manufacture a replacement.
B5	Use Stage: Refurbishment	2023	Product typically not refurbished during use.
B6	Operational Energy Use	2023	Operational Energy Use of Building Integrated System During Product Use
B7	Operational Water Use	2023	Operational Water Use of Building Integrated System During Product Use
C1	EOL: Deconstruction	2023	No inputs required for deconstruction.
C2	EOL: Transport	2023	Shipping from project site to waste disposal.
C3	EOL: Waste Processing	2023	Waste processing if incineration as chosen disposal pathway per Part A of the PCR.
C4	EOL: Disposal	2023	Disposal modeled by region as per Part A of the PCR.
D	Benefits beyond system	MND	Credits from energy or material capture.

Infrastructure and capital goods have been excluded from this assessment. By default, Sphera MLC datasets exclude infrastructure and capital goods.

Software

Sphera LCA for Experts 2025.1.

Period Under Review

The period under review is calendar year 2023.

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.

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. Cumulative excluded inputs within the life cycle account for less than 1% of the total mass inputs, energy inputs, and environmental impacts.

Mannington COMMERCIAL

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 India. 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 2023. 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.

Table 8: Declaration of data sources and share of primary data

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP GHG results for A1-A3[1]
Production of Wool Yarn	Database	Sphera LCA for experts 2025.1	2023	Secondary Data	-
Maintenance	Database	Sphera LCA for experts 2025.1	2023	Secondary Data	-
Generation of electricity used in manufacturing product	Database	Sphera LCA for experts 2025.1	2023	Primary Data	1%
Transportation	Database	Sphera LCA for experts 2025.1	2023	Primary Data	3%
Total share of primary data, of GWP-GHG results for A1-A3					**4%**

[1]The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that do not capture all relevant aspects of data quality. The indicator is not comparable across product categories. Values are the same for all products under this EPD.

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 area 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 Dazzle and Delight do not contain any recycled materials.

Mannington COMMERCIAL

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, co mparability is permissible provided the information given for such comparison is transparent and the limitations of comparability explained.

Table 9: Life Cycle Stages Included in the Study

	Production			Construction		Use							End of Life				Benefits & Loads Beyond System Boundary
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Module Description	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
Modules Declared	GLO		IN	GLO	US												MND

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

Table 10: Transportation to Building Site (A4)

	Shipping Leg 1	Shipping Leg 2	Shipping Leg 3
Vehicle Type	Truck-trailer, Diesel, Euro I, 34 - 40t gross weight	Bulk commodity carrier, 1.000 to 250.000 dwt payload capacity, deep sea	Truck – Heavy Heavy-duty Diesel Truck / 53,333 lb payload – 8b
Fuel Efficiency [L/100km]	42	5,470	42
Fuel Type	Diesel	Heavy fuel oil	Diesel
Distance [km]	1,500	16,000	1,350

	Shipping Leg 1	Shipping Leg 2	Shipping Leg 3
Capacity Utilization [%]	61%	53%	68%
Capacity Utilization Volume Factor	1	1	1
Weight of Products Transported [kg]	4.2279		

Table 11: Reference Service Life

Name	Value
RSL [years]	15
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
Indoor environment	Can be installed in any typical indoor environment, assuming manufacturer's installation instructions and recommendations are followed
Maintenance	See Use section above for maintenance instructions

Table 12: Installation at building site (A5)

	Dazzle Delight
Hemp Packaging Waste to Landfill [kg]	7.89E-02
Hemp Packaging Waste to Incineration [kg]	2.06E-02
Hemp Packaging Waste to Recycling [kg]	0.00E+00
Paper Packaging Waste to Landfill [kg][2]	5.05E-02
Paper Packaging Waste to Incineration [kg][2]	9.36E-03
Paper Packaging Waste to Recycling [kg][2]	1.27E-01
Plastic Packaging Waste to Landfill [kg]	1.23E-01
Plastic Packaging Waste to Incineration [kg]	2.83E-02
Plastic Packaging Waste to Recycling [kg]	1.50E-02
Biogenic Carbon Content of Packaging	
Cardboard [kg CO_2/kg]	1.58
Hemp [kg CO_2/kg]	1.50
No freshwater, electricity, or fuels are used in installation. These products are GREENGUARD certified and assumed to have negligible VOCs during installation.	

Table 13: Maintenance (B2)

Cleaning Process	Details	Value	Unit
Vacuuming	Maintenance cycle	7800	Cycles/ESL
	Maintenance cycle	1560	Cycles/RSL
	Electricity	0.95	kWh/m2/yr
Deep Cleaning	Maintenance cycle	30	Cycles/RSL

Cleaning Process	Details	Value	Unit
	Maintenance cycle	150	Cycles/ESL
	Electricity	0.05	kWh/m2/yr
	Net freshwater consumption	1.9	kg/m2/yr
	Detergent	0.1	kg /m2/yr

Table 14: End-of-Life Scenario Details (C1-C4)

	Value
Collected as mixed construction waste [kg/m^2]	3.775
Waste to Landfill [kg/m^2]	3.775
Distance to Landfill [km]	161

Mannington COMMERCIAL

Life Cycle Assessment Interpretation

For both Captivate products, B4 (replacements) drive impacts across all TRACI 2.1 impact categories due to the 15-year service life of the product. The 15-year product service life means that 4 replacements of the wool rugs 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. Following B4, A1-A3 (Raw materials and manufacturing) drive life cycle impacts for all except GWP and Fossil Fuel Resources, where B2 maintenance drives impact.

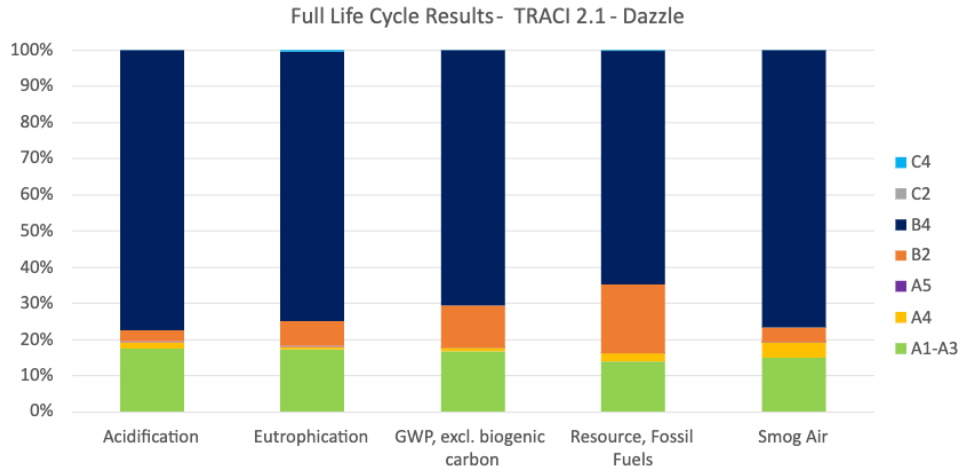

Figure 3: TRACI 2.1 Impacts for Dazzle

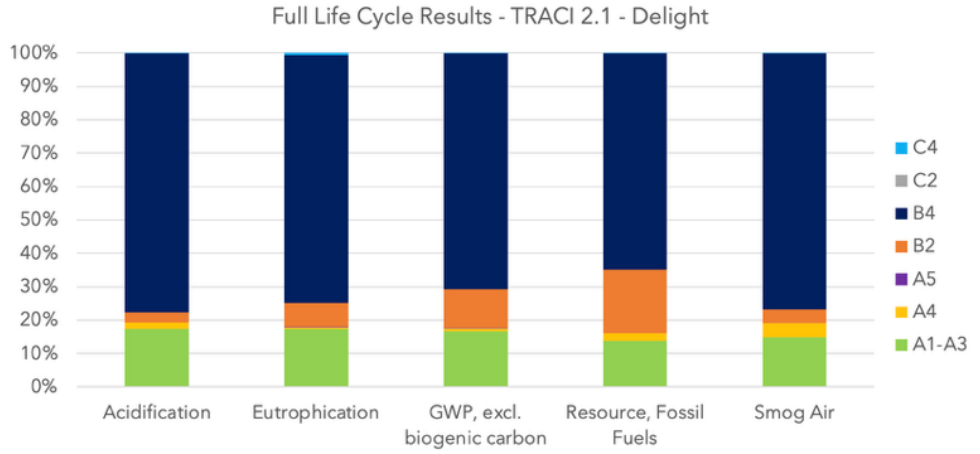

Figure 4: TRACI 2.1 Impacts for Delight

Mannington COMMERCIAL

Environmental Performance

All results are given per functional unit, which is 1 m^2 of installed flooring over an estimated building life of 75 years. The results of the end-of-life stage (module C) should be considered when using the results of the production stage. Environmental impacts were calculated using the Sphera LCA for Experts software platform. Impact results have been calculated using IPCC AR6, 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.

Mannington®
COMMERCIAL

Mannington Dazzle Results

Table 15: LCIA results for Dazzle, per one square meter of installed flooring.

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
IPCC AR6															
GWPe [kg CO_2 eq]	2.58E+01	1.39E+00	1.70E-01	0.00E+00	1.76E+01	0.00E+00	1.10E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.09E-04	0.00E+00	8.36E-02	MND
GWPi [kg CO_2 eq]	2.06E+01	1.41E+00	2.40E-01	0.00E+00	1.76E+01	0.00E+00	8.93E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.10E-04	0.00E+00	8.34E-02	MND
CML LCIA Impacts (Europe, Rest of World)															
GWPe [kg CO_2 eq]	2.52E+01	1.38E+00	1.65E-01	0.00E+00	1.75E+01	0.00E+00	1.07E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-04	0.00E+00	8.30E-02	MND
GWPi [kg CO_2 eq]	2.00E+01	1.40E+00	2.35E-01	0.00E+00	1.75E+01	0.00E+00	8.69E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.09E-04	0.00E+00	8.27E-02	MND
ODP [kg CFC 11 eq]	1.25E-10	2.23E-13	2.62E-14	0.00E+00	1.43E-10	0.00E+00	5.02E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.76E-17	0.00E+00	2.54E-13	MND
AP [kg SO_2 eq]	1.08E-01	1.03E-02	2.67E-04	0.00E+00	2.03E-02	0.00E+00	4.76E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.53E-07	0.00E+00	4.03E-04	MND
EP [kg Phosphate eq]	2.48E-02	2.31E-03	2.42E-04	0.00E+00	4.36E-03	0.00E+00	1.13E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-07	0.00E+00	8.47E-04	MND
POCP [kg Ethene eq]	3.37E-03	-1.99E-03	5.51E-05	0.00E+00	2.30E-03	0.00E+00	5.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.23E-07	0.00E+00	3.17E-05	MND
ADPE [kg Sb eq]	9.84E-06	1.26E-07	4.37E-09	0.00E+00	3.56E-06	0.00E+00	4.00E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.33E-11	0.00E+00	3.08E-08	MND
ADPF [MJ]	1.99E+02	1.80E+01	2.08E-01	0.00E+00	2.23E+02	0.00E+00	8.75E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.95E-03	0.00E+00	1.22E+00	MND
TRACI LCIA Impacts (North America)															
AP [kg SO_2 eq]	1.21E-01	1.35E-02	5.89E-04	0.00E+00	2.11E-02	0.00E+00	5.43E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.79E-07	0.00E+00	4.28E-04	MND
EP [kg N eq]	2.13E-02	8.20E-04	1.67E-04	0.00E+00	8.69E-03	0.00E+00	9.17E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.51E-08	0.00E+00	6.70E-04	MND
GWPe [kg CO_2 eq]	2.46E+01	1.37E+00	1.57E-01	0.00E+00	1.73E+01	0.00E+00	1.05E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.05E-04	0.00E+00	8.20E-02	MND
GWPi [kg CO_2 eq]	1.93E+01	1.39E+00	2.27E-01	0.00E+00	1.73E+01	0.00E+00	8.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-04	0.00E+00	8.18E-02	MND
ODP [kg CFC 11 eq]	2.50E-12	5.57E-14	1.63E-15	0.00E+00	2.55E-12	0.00E+00	1.03E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-17	0.00E+00	1.77E-14	MND
Resources [MJ]	1.54E+01	2.58E+00	2.73E-02	0.00E+00	2.14E+01	0.00E+00	7.28E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.66E-04	0.00E+00	1.62E-01	MND
SFP [kg O_3 eq]	1.20E+00	3.51E-01	2.86E-03	0.00E+00	3.27E-01	0.00E+00	6.25E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E-05	0.00E+00	7.64E-03	MND
Carbon Emissions and Uptake															
BCRP [kg CO_2]	4.65E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.86E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
BCEP [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.86E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.65E+00	MND
BCRK [kg CO_2]	4.49E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
BCEK [kg CO_2]	0.00E+00	0.00E+00	4.49E-01	0.00E+00	0.00E+00	0.00E+00	1.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
BCEW [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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
CCE [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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
CCR [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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
CWNR [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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

Mannington COMMERCIAL

Table 16: Resource use, waste, and output flow results for Dazzle, per one square meter of installed flooring.

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Resource Use Indicators															
RPRE [MJ]	2.55E+02	2.84E-01	1.93E-02	0.00E+00	7.79E+01	0.00E+00	1.02E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.66E-04	0.00E+00	1.79E-01	MND
RPRM [MJ]	1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.50E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
RPRT [MJ]	2.69E+02	2.84E-01	1.93E-02	0.00E+00	7.79E+01	0.00E+00	1.08E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.66E-04	0.00E+00	1.79E-01	MND
NRPRE [MJ]	2.08E+02	1.81E+01	2.15E-01	0.00E+00	2.98E+02	0.00E+00	9.12E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.99E-03	0.00E+00	1.26E+00	MND
NRPRM [MJ]	2.62E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
NRPRT [MJ]	2.11E+02	1.81E+01	2.15E-01	0.00E+00	2.98E+02	0.00E+00	9.23E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.99E-03	0.00E+00	1.26E+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 [m3]	5.98E-01	3.23E-04	2.52E-04	0.00E+00	1.15E-01	0.00E+00	2.39E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.79E-07	0.00E+00	1.38E-04	MND
Output Flows and Waste Categories															
HWD [kg]	3.35E-05	1.29E-09	4.39E-11	0.00E+00	1.63E-07	0.00E+00	1.34E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.61E-13	0.00E+00	3.02E-10	MND
NHWD [kg]	5.53E-01	8.29E-04	2.29E-01	0.00E+00	1.56E-01	0.00E+00	1.82E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.08E-07	0.00E+00	3.76E+00	MND
HLRW [kg]	5.59E-06	2.84E-08	2.70E-09	0.00E+00	3.15E-05	0.00E+00	2.25E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.63E-11	0.00E+00	1.58E-08	MND
ILLRW [kg]	5.13E-03	2.39E-05	2.32E-06	0.00E+00	2.63E-02	0.00E+00	2.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-08	0.00E+00	1.39E-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
MR [kg]	5.08E-01	0.00E+00	1.42E-01	0.00E+00	0.00E+00	0.00E+00	2.60E+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	5.82E-02	0.00E+00	0.00E+00	0.00E+00	2.33E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
EEE [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
EET [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

Mannington®
COMMERCIAL

Mannington Delight Results

Table 17: LCIA results for Delight, per one square meter of installed flooring.

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
IPCC AR6															
GWPe [kg CO_2 eq]	2.58E+01	1.39E+00	1.70E-01	0.00E+00	1.76E+01	0.00E+00	1.10E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.09E-04	0.00E+00	8.36E-02	MND
GWPi [kg CO_2 eq]	2.06E+01	1.41E+00	2.40E-01	0.00E+00	1.76E+01	0.00E+00	8.93E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.10E-04	0.00E+00	8.34E-02	MND
CML LCIA Impacts (Europe, Rest of World)															
GWPe [kg CO_2 eq]	2.52E+01	1.38E+00	1.65E-01	0.00E+00	1.75E+01	0.00E+00	1.07E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-04	0.00E+00	8.30E-02	MND
GWPi [kg CO_2 eq]	2.00E+01	1.40E+00	2.35E-01	0.00E+00	1.75E+01	0.00E+00	8.69E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.09E-04	0.00E+00	8.27E-02	MND
ODP [kg CFC 11 eq]	1.25E-10	2.23E-13	2.62E-14	0.00E+00	1.43E-10	0.00E+00	5.02E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.76E-17	0.00E+00	2.54E-13	MND
AP [kg SO_2 eq]	1.08E-01	1.03E-02	2.67E-04	0.00E+00	2.03E-02	0.00E+00	4.76E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.53E-07	0.00E+00	4.03E-04	MND
EP [kg Phosphate eq]	2.48E-02	2.31E-03	2.42E-04	0.00E+00	4.36E-03	0.00E+00	1.13E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-07	0.00E+00	8.47E-04	MND
POCP [kg Ethene eq]	3.37E-03	-1.99E-03	5.51E-05	0.00E+00	2.30E-03	0.00E+00	5.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.23E-07	0.00E+00	3.17E-05	MND
ADPE [kg Sb eq]	9.84E-06	1.26E-07	4.37E-09	0.00E+00	3.56E-06	0.00E+00	4.00E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.33E-11	0.00E+00	3.08E-08	MND
ADPF [MJ]	1.99E+02	1.80E+01	2.08E-01	0.00E+00	2.23E+02	0.00E+00	8.75E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.95E-03	0.00E+00	1.22E+00	MND
TRACI LCIA Impacts (North America)															
AP [kg SO_2 eq]	1.21E-01	1.35E-02	5.89E-04	0.00E+00	2.11E-02	0.00E+00	5.43E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.79E-07	0.00E+00	4.28E-04	MND
EP [kg N eq]	2.13E-02	8.20E-04	1.67E-04	0.00E+00	8.69E-03	0.00E+00	9.17E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.51E-08	0.00E+00	6.70E-04	MND
GWPe [kg CO_2 eq]	2.46E+01	1.37E+00	1.57E-01	0.00E+00	1.73E+01	0.00E+00	1.05E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.05E-04	0.00E+00	8.20E-02	MND
GWPi [kg CO_2 eq]	1.93E+01	1.39E+00	2.27E-01	0.00E+00	1.73E+01	0.00E+00	8.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-04	0.00E+00	8.18E-02	MND
ODP [kg CFC 11 eq]	2.50E-12	5.57E-14	1.63E-15	0.00E+00	2.55E-12	0.00E+00	1.03E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-17	0.00E+00	1.77E-14	MND
Resources [MJ]	1.54E+01	2.58E+00	2.73E-02	0.00E+00	2.14E+01	0.00E+00	7.28E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.66E-04	0.00E+00	1.62E-01	MND
SFP [kg O_3 eq]	1.20E+00	3.51E-01	2.86E-03	0.00E+00	3.27E-01	0.00E+00	6.25E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E-05	0.00E+00	7.64E-03	MND
Carbon Emissions and Uptake															
BCRP [kg CO_2]	4.65E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.86E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
BCEP [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.86E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.65E+00	MND
BCRK [kg CO_2]	4.49E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
BCEK [kg CO_2]	0.00E+00	0.00E+00	4.49E-01	0.00E+00	0.00E+00	0.00E+00	1.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
BCEW [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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
CCE [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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
CCR [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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
CWNR [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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

Mannington COMMERCIAL

Table 18: Resource use, waste, and output flow results for Delight, per one square meter of installed flooring.

Impact Category	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Resource Use Indicators															
RPRE [MJ]	2.55E+02	2.84E-01	1.93E-02	0.00E+00	7.79E+01	0.00E+00	1.02E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.66E-04	0.00E+00	1.79E-01	MND
RPRM [MJ]	1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.50E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
RPRT [MJ]	2.69E+02	2.84E-01	1.93E-02	0.00E+00	7.79E+01	0.00E+00	1.08E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.66E-04	0.00E+00	1.79E-01	MND
NRPRE [MJ]	2.08E+02	1.81E+01	2.15E-01	0.00E+00	2.98E+02	0.00E+00	9.12E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.99E-03	0.00E+00	1.26E+00	MND
NRPRM [MJ]	2.62E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
NRPRT [MJ]	2.11E+02	1.81E+01	2.15E-01	0.00E+00	2.98E+02	0.00E+00	9.23E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.99E-03	0.00E+00	1.26E+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 [m3]	5.98E-01	3.23E-04	2.52E-04	0.00E+00	1.15E-01	0.00E+00	2.39E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.79E-07	0.00E+00	1.38E-04	MND
Output Flows and Waste Categories															
HWD [kg]	3.35E-05	1.29E-09	4.39E-11	0.00E+00	1.63E-07	0.00E+00	1.34E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.61E-13	0.00E+00	3.02E-10	MND
NHWD [kg]	5.53E-01	8.29E-04	2.29E-01	0.00E+00	1.56E-01	0.00E+00	1.82E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.08E-07	0.00E+00	3.76E+00	MND
HLRW [kg]	5.59E-06	2.84E-08	2.70E-09	0.00E+00	3.15E-05	0.00E+00	2.25E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.63E-11	0.00E+00	1.58E-08	MND
ILLRW [kg]	5.13E-03	2.39E-05	2.32E-06	0.00E+00	2.63E-02	0.00E+00	2.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-08	0.00E+00	1.39E-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
MR [kg]	5.08E-01	0.00E+00	1.42E-01	0.00E+00	0.00E+00	0.00E+00	2.60E+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	5.82E-02	0.00E+00	0.00E+00	0.00E+00	2.33E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND
EEE [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
EET [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

Mannington COMMERCIAL

Additional Environmental Information

Environmental and Health During Manufacturing

Mannington's Wool rugs 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.

Extraordinary Effects

Fire

Mannington Wool Rugs passed the flammability 16 CFR 1631 test (Methenamine Pill Test – ASTM D2859).

Water

Should the product become flooded, the floor covering should be removed, and the subfloor should be evaluated and repaired as needed. Environmental impacts will be determinant upon the cleanliness of the water that has caused the flooding. Thoroughly clean then evaluate the rug for usability post-flooding.

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

Dazzle and Delight are both GREENGUARD certified.

Additional information about the products can be found on Mannington's Technical Resources page.

Mannington COMMERCIAL

Version History

Original Version of the EPD, 2026-01-06

Mannington COMMERCIAL

Abbreviations

Table 19: Impact Category Key – LCIA Indicators

Abbreviation	Parameter	Unit
IPCC AR6		
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 20: Biogenic Carbon Indicators

Abbreviation	Parameter	Unit
Biogenic Carbon Indicators		
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
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

Mannington COMMERCIAL

Table 21: 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

Mannington COMMERCIAL

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

EPD International . (2025). *General Programme Instructions of the International EPD System. Version 5.0.*

IPCC. (2021). *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.* [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In 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. December, 2025

.

Mannington®
COMMERCIAL