

# Venture

## Modular Carpets



## VENTURE CARPETS INC.

### ENVIRONMENTAL PRODUCT DECLARATION

ISO 14025:2006 and ISO 21930:2017

Venture Carpets Inc. is pleased to present this Environmental Product Declaration (EPD) for their Modular Carpets. This EPD was developed in compliance with ISO 14025 and ISO 21930:2017 and has been verified by Lindita Bushi from the Athena Sustainable Materials Institute.

The LCA and the EPD were prepared by Vertima Inc. The EPD includes cradle-to-grave life cycle assessment (LCA) results.

For more information about Venture Carpets products, visit <https://www.venturecarpets.com/>.

For any explanatory material regarding this EPD, please contact the program operator.



Environmental  
Product  
Declaration

CSA Group Registered Based on  
ISO 14025 and Other Requirements  
For more information visit  
[csaregistries.ca/epd](https://csaregistries.ca/epd)

4029-8012  
March 2024-March 2029

# 1. GENERAL INFORMATION

PCR GENERAL INFORMATION			
<b>Reference PCR</b>	PCR Part-B: Flooring EPD Requirements (UL 10010-7), v.2.0 and its core PCR Part-A: Life Cycle Assessment Calculation Rules and Report Requirements (UL 10010), v.4.0 UL Environment September, 2018, to September, 2023, extended to March 31, 2024 (validity period of PCR Part-B)		
<b>The PCR Part-B review was conducted by:</b>	Jack Geibig Ecoform jgeibig@ecoform.com	Thomas Gloria, Ph.D. Industrial Ecology Consultants t.gloria@insustrial-ecology.com	Thaddeus Owen hiper4m@gmail.com
EPD GENERAL INFORMATION			
<b>Program Operator</b>	CSA Group 178 Rexdale Blvd Toronto, ON Canada M9W 1R3 <a href="http://www.csagroup.org">www.csagroup.org</a>		
<b>Declared Product</b>	Modular Carpets with recycled nylon 6 yarn, polypropylene yarn, and polyester yarn.		
<b>EPD Registration Number</b> 4029-8012	<b>EPD Date of Issue</b> March 27, 2024	<b>EPD Period of Validity</b> March 27, 2024 - March 26, 2029	
<b>EPD Recipient Organization</b>	Venture Carpets 700, 120th Street Saint-Georges, QC G5Y 6R6 <a href="http://venturecarpets.com">http://venturecarpets.com</a>		<h1>Venture</h1>
<b>EPD Type/Scope and Functional Unit</b> Product specific cradle-to-grave EPD with functional unit of 1 m <sup>2</sup> of installed carpet for 75 years.			<b>Year of Reported Manufacturer Primary Data</b>  June 1, 2022 to May 31,
<b>Geographical Scope</b> North America	<b>LCA Software</b> Open LCA v.2.03	<b>LCI Databases</b> Ecoinvent 3.9.1 and US LCI	<b>LCIA Methodology</b> TRACI 2.1 and CED
This LCA and EPD were prepared by:		Chantal Lavigne, M.A.Sc. Vertima Inc. <a href="http://www.vertima.ca">www.vertima.ca</a>	
This EPD and LCA were independently verified in accordance with ISO 14025:2006, ISO 14040:2006 and ISO 14044:2006, as well as the PCR from UL Environment "Part-B: Flooring EPD requirements", which is based on ISO 21930:2017. UL Environment PCR ,Part-A: Life Cycle Assessment Calculation Rules and Report Requirements, v. 4.0 ,serves as core PCR.		 Lindita Bushi, Ph.D. Athena Sustainable Materials Institute	
<input type="checkbox"/> Internal <input checked="" type="checkbox"/> External			



## LIMITATIONS

Environmental declarations from different programs (ISO 14025) may not be comparable.[1]

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." Examples of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.[2]



## 2. PRODUCT SYSTEM DESCRIPTION

Venture Carpets is a Canadian manufacturing company of carpets, including broadloom carpets and carpet tiles. Their head office is based in Saint-Georges (QC).

### 2.1. PRODUCT DESCRIPTION

Modular Carpets<sup>1</sup> are carpet tiles made for residential and commercial textile floor covering. The carpets studied here are composed of multi-layers as illustrated in the figure below. Components include the face yarn; primary synthetic backing, latex compound; and a fiberglass layer inserted in between two thermoplastic layers (secondary backing).

### PermaFuse™ Backing Technology

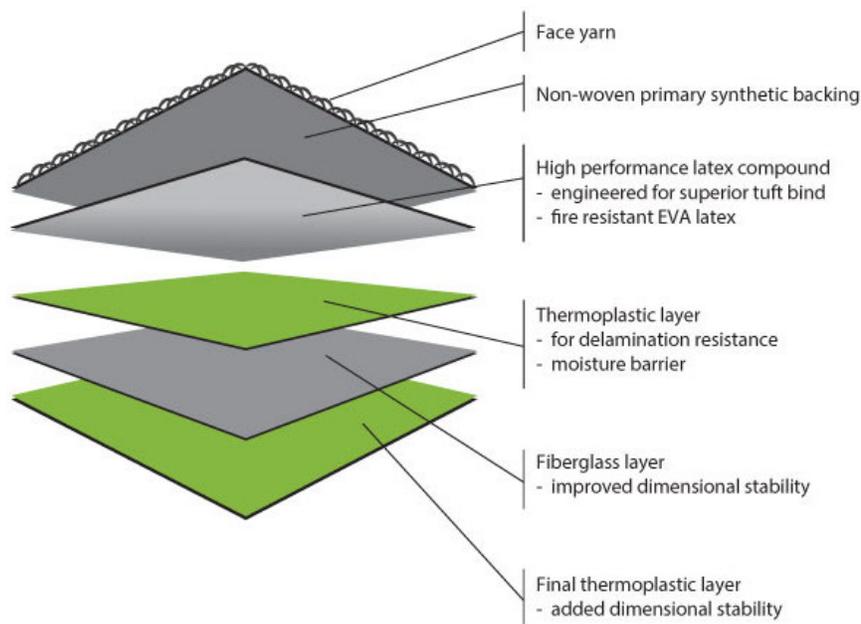


Figure 1: Representation of Modular Carpets [Figure is courtesy of Venture Carpets].

Modular Carpets exist in different colors, designs and with three different yarn types: recycled nylon 6, polypropylene, and polyester. Carpet density varies between 3.2 kg/m<sup>2</sup> and 4.0 kg/m<sup>2</sup> depending on the yarn type and the carpet style.

More information on the products can be found at:

<https://en.distribution.venturecarpets.com/collections-shop#type=modulaire>.

<sup>1</sup> Modular carpets are classified, according to the Construction Specification Institute (CSI), under the Masterformat 09 68 13 Tile Carpeting, and, under 30161700 following the United Nations Standard Products and Services Code (UNSPSC).

## 2.2. PRODUCTION AVERAGE

The Modular Carpet **weighted average** profile per yarn types are based on the annual production data (on mass basis) of one facility based in **Belleville (ON)**, which represents 100% of the Modular Carpets production from **June 1, 2022, to May 31, 2023**.

## 2.3. MATERIAL COMPOSITION

The raw material inputs are presented in the table below. For details on material content, please refer to the Health Product Declaration (HPD®) available at <http://www.hpd-collaborative.org/hpd-public-repository/>.

Materials	Recycled Nylon Yarn Modular Carpet	Polypropylene Yarn Modular Carpet	Polyester Yarn Modular Carpet
Yarn	19.1%	17.7%	19.6%
Polyester primary backing	3.8%	3.9%	3.3%
High performance latex compound	17.2%	16.7%	13.8%
PVC secondary backing	58.0%	59.7%	61.7%
Fiberglass layer	1.9%	2.0%	1.7%
<b>TOTAL</b>	100.0%	100.0%	100.0%
<b>Carpet density - weighted average (kg/m<sup>2</sup>)</b>	<b>3.46</b>	<b>3.34</b>	<b>3.94</b>
Carpet density - range (kg/m <sup>2</sup> )	3.20 - 3.68	3.22 - 3.60	3.93 - 4.04

## 2.4. TECHNICAL DATA

Name	Recycled Nylon Yarn Modular Carpet	Polypropylene Yarn Modular Carpet	Polyester Yarn Modular Carpet	Unit
Yarn type	Recycled nylon 6	Polypropylene	Polyester	n/a
Primary backing type	Polyester			n/a
Secondary backing type	Fiberglass Reinforced Thermoplastic			n/a
CRI rating (2.5 Moderate, 3.0 Heavy, 3.5 Severe)	3.0 to 3.5	2.5 to 3.0	-	n/a
Total thickness	3.51 to 5.59 (0.138 to 0.220)	3.51 to 6.50 (0.138 to 0.256)	8.00 (0.315)	mm (in)
Product weight	3 460 (102)	3 340 (99)	3 940 (116)	g/m <sup>2</sup> (oz/yd <sup>2</sup> )
Surface pile thickness	2.39 to 3.81 (0.094 to 0.150)	2.39 to 3.61 (0.094 to 0.142)	5.44 (0.214)	mm (in)
Surface pile weight	576 to 814 (17 to 24)	576 to 780 (17 to 23)	780 (23)	g/m <sup>2</sup> (oz/yd <sup>2</sup> )

## 2.5. MARKET PLACEMENT / APPLICATION RULES

Modular Carpet size is 50 cm x 50 cm (19.68" x 19.68").

They meet ASTM E-648 Radiant Panel Class I [11] and ASTM E-662 < 450 Flaming mode [12] test standards. Performance specifications are presented in the table below.

Performance Specifications	
Flammability	Meets ASTM E-648 test standards Radiant Panel Class I
Smoke density	Meets ASTM E-662 test standards <450 Flaming mode
Anti-static properties	Less than 3.0 kv at 20% relative humidity & 21 <sup>o</sup> C
Dimensional stability	Less than 0.05 %
Lightfastness	L7 or Better
Resistance to wet cleaning	Grey Scale 5

## 2.6. MANUFACTURING

Carpet manufacturing includes different processing steps. First, the latex compound and secondary backing are prepared, and yarn is woven with the primary backing, which is called tufting and produces greige. Finally, the different carpet layers, greige, latex compound, secondary backing, and fiberglass layer are assembled.

## 2.7. PACKAGING

Modular Carpets, which are shipped across North America, are packaged and stacked on wood pallets. Detailed packaging materials used per 1 m<sup>2</sup> of installed Modular Carpets for 15 years and their disposal pathways are shown in the table below.

Materials	Recycled Nylon Yarn Modular Carpet kg/m <sup>2</sup>	Polypropylene Yarn Modular Carpet kg/m <sup>2</sup>	Polyester Yarn Modular Carpet kg/m <sup>2</sup>	Disposal pathway
Wood (pallets)	9.52E-02	9.20E-02	1.08E-01	6.3% recycled 12.4% incinerated 81.3% landfilled
Polyethylene plastic wrap (shrink film)	6.70E-03	6.47E-03	7.62E-03	31.1% recycled 12.4% incinerated 56.5% landfilled
Paper (labels, tray inserts)	2.54E-03	2.46E-03	2.89E-03	56.4% recycled 3.7% incinerated 39.9% landfilled
Cardboard (boxes, trays, slip sheets, corners)	9.76E-02	9.43E-02	1.11E-01	

## 2.8. PRODUCT INSTALLATION

Prior to installation, floor moisture emissions and alkalinity levels must be tested to cover moisture/alkalinity-related issues on warranty. The floor must be clean of debris, oil, paint, grease, etc. Temperature must be kept between 15°C and 30°C 48h prior installation, during installation, and 48h after installation. Check the Venture drawings sent with products to see how the designer intends the product to be installed. Modular Carpets can be installed with tabs from Maxtab or Mapei adhesive. When installing carpets with adhesives, Venture recommends a full spread of adhesives for the installation of carpets. Apply a thin layer of water-soluble adhesive with a ¾" nap paint roller. Wait until the adhesive is set and tacky to the touch, but not wet. Never install Venture products on wet adhesive. For the purpose of this EPD, all carpets are considered installed using an adhesive. No installation equipment has been considered.

A 5% carpet installation loss is considered. This includes trimming waste and replacement tiles. Carpet waste is considered all sent to the local landfill facility.

## 2.9. USE CONDITIONS

Carpets should be cleaned and vacuumed on a regular basis. Maintenance frequency will depend on the foot traffic and local conditions.

Recycled Nylon Yarn and Polypropylene Yarn Modular Carpets are Green Label Plus certified and thus comply with CDPH v1.2 VOC emissions test for Private Office and School Classroom scenarios (Total VOCs are 0.5 mg/m<sup>3</sup> or less).

## 2.10. PRODUCT REFERENCE SERVICE LIFE AND BUILDING ESTIMATED SERVICE LIFE

Modular Carpets have a reference service life of 15 years as declared by the manufacturer. The buildings in which carpets are installed have an estimated service life of 75 years. This means that, during the life cycle of the building, there will be 4 carpet replacements.

## 2.11. RE-USE PHASE

If the carpets are still in good condition, they may be reused.

## 2.12. DISPOSAL

In this study, Modular Carpets are considered sent to landfill at their end of life. However, it should be noted that Venture Carpets Inc. has recently put into place a take back program. Recovered carpets that are still in good condition are offered free of charge to Venture Carpets Inc. partners or local charitable organizations. If not reusable, recycled nylon carpets are recycled and other carpets are sent to a waste to energy recovery center.

Users are invited to contact Venture Carpets when their carpet has reached its end of life. For more details, please visit: [www.venturecarpets.com/environnement](http://www.venturecarpets.com/environnement).

## 2.13. FURTHER INFORMATION

To learn more about Venture's Modular Carpets, please visit <https://en.venturecarpets.com/>.

## 3. LCA CALCULATION RULES

### 3.1. FUNCTIONAL UNIT AND REFERENCE FLOW

The functional unit for this study is **1 m<sup>2</sup> of floor covering for 75 years**. The reference service life of the carpets is 15 years. It should be noted that this LCA follows an attributional LCA approach.

Name	Recycled Nylon Yarn Modular Carpet	Polypropylene Yarn Modular Carpet	Polyester Yarn Modular Carpet
Functional unit	1 m <sup>2</sup>		
Mass – 75 years	18.2 kg	17.5 kg	20.7 kg
Mass – 15 years	3.63 kg	3.51 kg	4.13 kg

### 3.2. SYSTEM BOUNDARIES

According to UL's PCR,[2] the LCA modelling system boundaries shall be cradle-to-grave, i.e., cover the production, construction, use and end-of-life life cycle stages as illustrated in Table 1. The process flow diagram for Venture's Modular Carpets is presented in Figure 2. Neither green power nor CO<sub>2</sub> credits are used in the framework of this project.

Table 1: Description of the system boundary life cycle stages and related information modules

PRODUCTION STAGE			CONSTRUCTION STAGE		USE STAGE							END-OF-LIFE STAGE			
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
Extraction and Upstream Production	Transport to Factory	Manufacturing	Transport to site	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction / Demolition	Transport to Waste Processing or Disposal	Waste Processing	Disposal of Waste
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Key: X = included; MND = module not declared (excluded)

**Extraction and upstream production (A1):** this module includes extraction of material and production of yarn, primary backing, latex raw materials, secondary backing raw materials, and fiberglass layer

**Transport to factory (A2):** this module includes the transport of the carpet component materials to Venture Carpets' Belleville (ON) manufacturing facility.

**Manufacturing (A3):** this module includes energy requirements for processing and water usage, as well as transport and treatment of waste. Losses are considered as waste sent to hazardous waste treatment, waste treatment with energy recovery or recycled. Waste transport and treatment is included, while only transport of recycled content is considered. This stage also includes packaging materials to make the products ready for shipment, as well as the transportation of these packaging materials to Venture Carpets manufacturing plant.

**Delivery and installation (A4&A5):** these modules included the delivery of the product by truck to the client and its installation with acrylic binder. Installation of carpets generates a 5% loss. Waste generated during installation, such as carpet loss and packaging, are discarded to landfill, incinerated or recycled. Transport and treatment of waste are included. It should be noted that the production (A1 to A3) and delivery (A4) of lost products (5%) are included in module A5.

**Use (B1 to B7):** module B2 includes energy, water and soap needed for weekly vacuuming of the carpet as well as yearly extraction cleaning during 75 years of building ESL. Module B4 includes carpet replacement every 15 years (product RSL) during 75 years of building ESL. As for modules B1, B3, B5, B6 and B7, they are "null" for the purpose of this EPD.

**End-of-life (C1 to C4):** this stage includes modules C2 and C4, transport to and treatment of waste at municipal solid waste site (i.e., landfill), respectively. Modules C1 and C3 modules are "null."

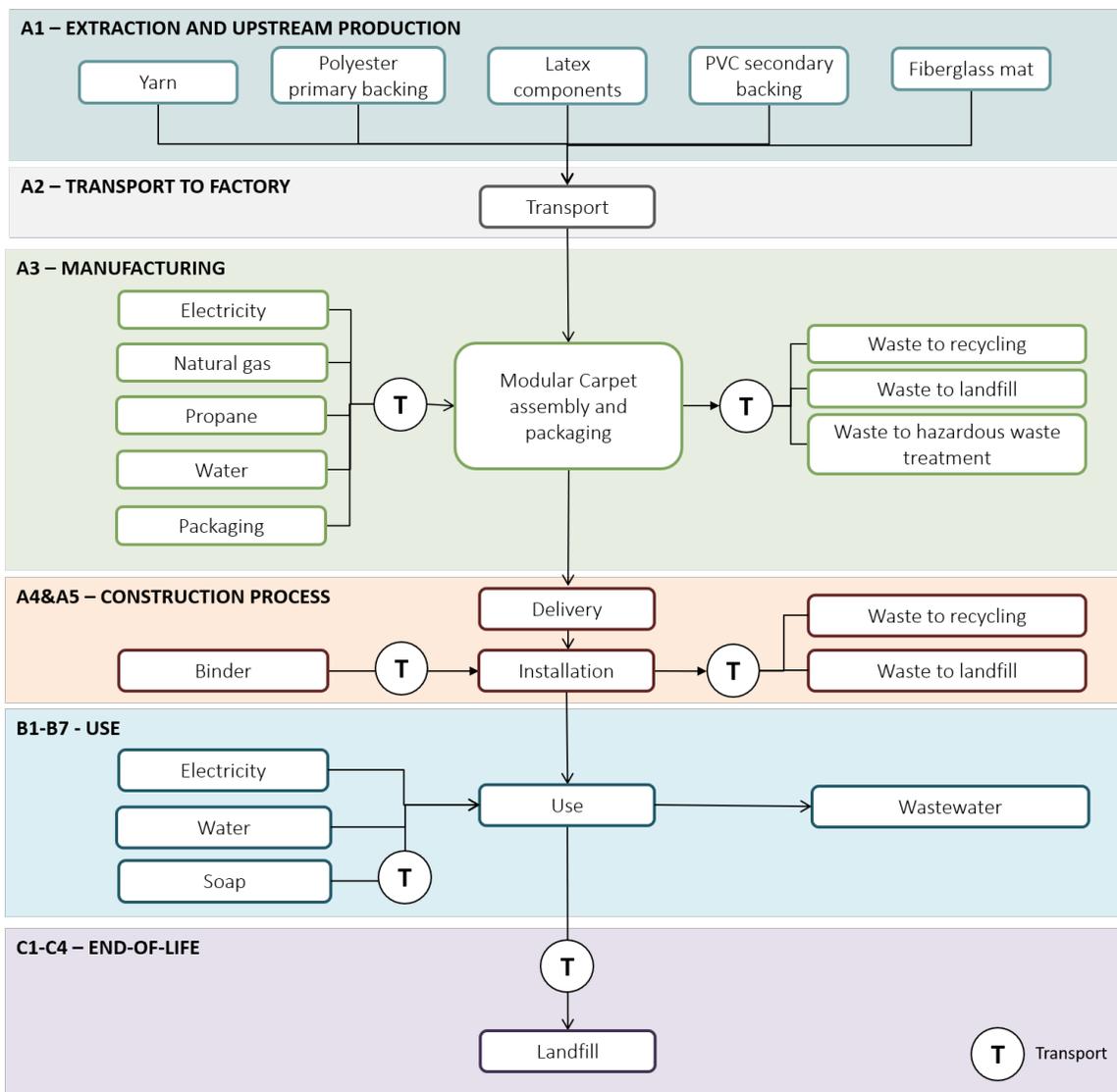


Figure 2: System boundaries of Cradle-to-Grave Modular Carpets LCA.

### 3.3. CUT-OFF CRITERIA

According to the PCR, section 3.6, all known mass and energy flows shall be reported. No known flows should be deliberately excluded.

Installation equipment as well as maintenance equipment themselves are excluded from the study. The impacts related to these flows are considered negligible and their inclusion in the study would add more uncertainty than completeness.

For this study, no data on the construction, maintenance or dismantling of the capital assets, daily transport of the employees, office work, business trips and other activities from Venture Carpet employees was included in the model. The model only takes into account the processes associated with infrastructure that are already included in the *ecoinvent* modules.

### 3.4. ALLOCATION

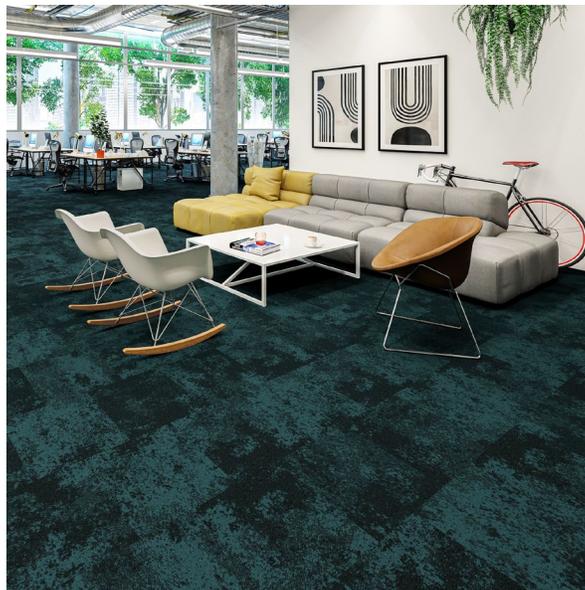
Data relative to energy consumption (electricity and natural gas) was provided for the whole manufacturing plant. PCR Part-B states that mass allocation should be used if unavoidable.

In this study, **mass allocation was used**.

Waste processing of the material flows undergoing recycling processes are included up to the system boundary of the end-of-waste state.[5] In other words, a cut-off approach was used as further processing of the recycled material is part of raw material preparation of another product system (open loop recycling). The same approach was used for waste sent to waste treatment with energy recovery.

### 3.5. ESTIMATES AND ASSUMPTIONS

Estimates and assumptions are presented either in the LCA calculation rules section or the scenario tables. Additionally, it should be noted that transport of products from building sites to waste processing is assumed to be done by a diesel-powered truck over 161 km as suggested by the PCR. Also, installation and deconstruction re assumed done manually; hence, there is no operational energy use.



## 3.6. DATA SOURCES AND QUALITY REQUIREMENTS

Data Quality Parameter	Data Quality Discussion
<b>Source of manufacturing data</b>	Modular Carpets manufacturing data was collected from the Belleville (ON) facility, which represents 100% of product production. This data included total annual mass and area of products under study: raw materials entering the production of the products, losses of materials, transport distance of materials, waste treatment, and product packaging. The data also included electricity consumption for the whole manufacturing facility as well as total annual production of all products produced.
<b>Source of secondary data</b>	Background data were taken from the ecoinvent 3.9.1 “cut-off” database, the US LCI database of product EPD.[6], [7] Datasets were selected based on their representativeness of the products’ composing materials. When appropriate, the dataset’s grid mix was changed for the grid mix of the province or country where production takes places. Otherwise, ecoinvent data representative of the global market or “rest-of-the-world” were selected as proxies.
<b>Geographical representativeness</b>	Electricity consumption is based on the electricity mix provided by the electricity supplier. Geographical correlation of the material composing the product and the selected datasets are largely representative of the same area. When this was not possible, datasets representing a larger geographical area were taken.
<b>Temporal representativeness</b>	Primary data represents one year of production starting June 1, 2022, and ending May 31, 2023. Life cycle inventory datasets from ecoinvent or the US LCI database are not always published within the last 10 years; nevertheless, they remain reference LCI databases.
<b>Technological representativeness</b>	Primary data, obtained from the manufacturer, is representative of the current technologies and materials used by this company.
<b>Completeness</b>	All relevant process steps were considered and modelled to satisfy the goal and scope. Installation equipment as well as maintenance equipment themselves are excluded from the study. The impacts related to these flows are considered negligible.

## 4. LIFE CYCLE ASSESSMENT SCENARIOS

### 4.1. DELIVERY AND INSTALLATION (A4&A5)

#### Delivery (A4) Scenario

Name	Value	Unit
Fuel type	Diesel	
Vehicle type	Transport, Single unit truck, diesel powered, USLCI - RNA	
Transport distance	1076	km

#### Installation (A5) Scenario

Name	Recycled Nylon yarn Modular Carpet Value	Polypropylene yarn Modular Carpet Value	Polyester yarn Modular Carpet Value	Unit
Ancillary materials	0.133	0.133	0.133	kg
Product loss per functional unit	0.173	0.167	0.197	kg
Waste materials at the construction site before waste processing, generated by product installation	0.173	0.167	0.197	kg
Output materials resulting from on-site waste processing - total	0.375	0.362	0.427	kg
-recycling	0.065	0.062	0.073	kg
- incineration	0.016	0.016	0.019	kg
- landfill	0.294	0.284	0.335	kg
Mass of packaging waste specified by type - total	0.202	0.195	0.230	kg
- wood	0.095	0.092	0.108	kg
- polyethylene plastic	0.007	0.006	0.008	kg
- paper and cardboard	0.100	0.097	0.114	kg

## 4.2. MAINTENANCE (B2) AND REPLACEMENT (B4)

### Maintenance (B2) Scenario

Name	Value	Unit
Maintenance process information	Vacuuming one a week, 52 weeks per year and extraction cleaning one a year	
Maintenance cycle - RSL = 15 years	Vacuuming: 780 Extraction cleaning: 15	Cycles / RSL
Maintenance cycle - ESL = 75 years	Vacuuming: 3 900 Extraction cleaning: 75	Cycles / ESL
Net freshwater consumption specified by water source and fate: tap water disposed in sewer after usage	0.02 l/m <sup>2</sup> /year of water disposed to sewer	l/m <sup>2</sup> /year
Ancillary materials specified by type: cleaning agent (soap)	0.70	g/m <sup>2</sup> /year
Energy input- vacuum	0.60	kWh/m <sup>2</sup> /year
Energy input - extraction cleaning	0.01	kWh/m <sup>2</sup> /year
Power output of equipment	Vacuum: 1.38 Extraction cleaning: 1.74	kW
Further assumptions for scenario development (e.g., frequency and period of use, number of occupants)	Vacuuming: 30s per m <sup>2</sup> Extraction cleaning: 20s per m <sup>2</sup>	

### Replacement (B4) Scenario

The Modular Carpets reference service life is 15 years; hence, the carpets are replaced 4 times during the life cycle of the building (75 years).

Name	Value	Unit
Reference Service Life	15	years
Replacement cycle	4	(ESL/RSL) - 1
Energy input, specified by activity, type and amount	0	kWh
Net freshwater consumption specified by water source and fate (e.g., X m <sup>3</sup> river water evaporated, X m <sup>3</sup> city water disposed to sewer)	0	m <sup>3</sup>
Replacement of carpet	1	m <sup>2</sup> /replacement cycle
Direct emissions to ambient air, soil and water		kg

### 4.3. END-OF-LIFE (C4)

#### End-of-Life (C4) Scenario

Name		Recycled Nylon Yarn Modula Carpet	Polypropylene Yarn Modular Carpet	Polyester Yarn Modular Carpet	Unit
<b>Assumptions for scenario development (description of deconstruction, collection, recovery, disposal method and transportation)</b>		Once removed via scraping, the used product is sent to landfill			
<b>Collection process (specified by type)</b>	Collected separately	0	0	0	kg
	Collected with mixed construction waste	3.46	3.34	3.94	kg
<b>Recovery (specified by type)</b>	Reuse	0	0	0	kg
	Recycling	0	0	0	kg
	Landfill	3.46	3.34	3.94	kg
	Incineration	0	0	0	kg
	Incineration with energy recovery	0	0	0	kg
	Energy conversion (specify efficiency rate)	0	0	0	
<b>Disposal (specified by type)</b>	Product or material for final deposition	3.46	3.34	3.94	kg

## 5. LIFE CYCLE ASSESSMENT RESULTS

### 5.1. RESULTS TABLES

It should be noted that Life Cycle Impact Assessment (LCIA) results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. Also, the 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.

#### Recycled Nylon Yarn Modular Carpets

1 m <sup>2</sup> of installed Recycled Nylon Yarn Modular Carpet in use for 75 years								
Environmental indicator	Unit	A1-A3 (per m2)	A4 (per m2)	A5 (per m2)	B2 (per m2)	B4 (per m2)	C2 (per m2)	C4 (per m2)
<b>TRACI 2.1</b>								
GWP <sup>(1)(3)</sup>	kg CO <sub>2</sub> eq.	6.02E+00	7.98E-01	5.47E-01	2.04E+01	2.99E+01	6.89E-02	4.08E-02
GWP <sup>(2)(3)</sup>	kg CO <sub>2</sub> eq.	5.91E+00	7.95E-01	5.33E-01	2.02E+01	2.94E+01	6.85E-02	3.99E-02
AP	kg SO <sub>2</sub> eq.	3.47E-02	4.21E-03	2.82E-03	5.01E-02	1.81E-01	8.39E-04	2.60E-03
EP	kg N eq.	1.12E-02	3.36E-04	1.87E-03	1.19E-01	5.43E-02	6.03E-05	1.07E-04
ODP	kg CFC-11 eq.	2.67E-07	2.46E-09	1.57E-08	2.01E-07	1.15E-06	2.37E-10	1.05E-09
SFP	kg O <sub>3</sub> eq.	4.29E-01	1.37E-01	3.95E-02	5.64E-01	2.54E+00	2.29E-02	6.68E-03
FFD	MJ Surplus	1.79E+01	1.42E+00	1.31E+00	2.32E+01	8.35E+01	1.36E-01	1.14E-01
<b>GWP</b> : Global Warming Potential; <b>AP</b> : Acidification Potential; <b>EP</b> : Eutrophication Potential; <b>ODP</b> : Ozone Layer Depletion Potential; <b>SFP</b> : Smog Formation Potential; <b>FFD</b> : Fossil Fuel Depletion Potential								

(1): 100-year time horizon GWP factors are provided by the IPCC 2013 Fifth Assessment Report (AR5).[8]

(2): 100-year time horizon GWP factors are provided by the IPCC 2007 Fourth Assessment Report (AR4) and used in TRACI 2.1.[9], [10]

(3): GWP 100, excludes biogenic CO<sub>2</sub> removal and emissions associated with biobased products and packaging. The product does not contain biogenic carbon.



1 m <sup>2</sup> of installed Recycled Nylon Yarn Modular Carpet in use for 75 years								
Environmental indicator	Unit	A1-A3 (per m <sup>2</sup> )	A4 (per m <sup>2</sup> )	A5 (per m <sup>2</sup> )	B2 (per m <sup>2</sup> )	B4 (per m <sup>2</sup> )	C2 (per m <sup>2</sup> )	C4 (per m <sup>2</sup> )
<i>Resource use</i>								
RPR <sub>E</sub> <sup>(1)</sup>	MJ, LHV	3.85E+01	1.50E-02	2.06E+00	5.49E+01	1.62E+02	1.80E-03	1.49E-02
RPR <sub>M</sub> <sup>(2)</sup>	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RPR <sub>T</sub>	MJ, LHV	3.85E+01	1.50E-02	2.06E+00	5.49E+01	1.62E+02	1.80E-03	1.49E-02
NRPR <sub>E</sub> <sup>(3)</sup>	MJ, LHV	9.60E+01	1.01E+01	8.45E+00	3.71E+02	4.66E+02	9.76E-01	8.77E-01
NRPR <sub>M</sub> <sup>(4)</sup>	MJ, LHV	5.17E+01	0.00E+00	2.59E+00	0.00E+00	2.17E+02	0.00E+00	0.00E+00
NRPR <sub>T</sub>	MJ, LHV	1.48E+02	1.01E+01	1.10E+01	3.71E+02	6.83E+02	9.76E-01	8.77E-01
SM <sup>(5)</sup>	kg	1.16E+00	0.00E+00	5.81E-02	0.00E+00	4.88E+00	0.00E+00	0.00E+00
RSF	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW <sup>(6)</sup>	m <sup>3</sup>	1.26E-01	9.96E-05	9.22E-03	2.40E-01	5.45E-01	1.15E-05	8.92E-04
<p><b>RPR<sub>E</sub></b> : Renewable primary resources used as energy carrier (fuel); <b>RPR<sub>M</sub></b>: Renewable primary resources with energy content used as material;  <b>RPR<sub>T</sub></b>: Renewable primary resources total; <b>NRPR<sub>E</sub></b>: Non-renewable primary resources used as energy carrier (fuel); <b>NRPR<sub>M</sub></b>: Non-renewable primary resources with energy content used as material; <b>NRPR<sub>T</sub></b>: Non-renewable primary resources total; <b>SM</b>: Secondary materials; <b>RSF</b>: Renewable secondary fuels; <b>NRSF</b>: Non-renewable secondary fuels; <b>FW</b>: Use of net fresh water resources.</p>								

- (1):  $RPR_E = RPR_T - RPR_M$ , where  $RPR_T$  is equal to the value for renewable energy obtained using the CED methodology (LHV).
- (2): Calculated as per ACLCA ISO 21930 Guidance, 6.2 Renewable primary resources with energy content used as a material,  $RPR_M$ . [11]
- (3):  $NRPR_E = NRPR_T - NRPR_M$ , where  $NRPR_T$  is equal to the value for non-renewable energy obtained using the CED methodology (LHV).
- (4): Calculated as per ACLCA ISO 21930 Guidance, 6.4 Non-renewable primary resources with energy content used as a material,  $NRPR_M$ . [11]
- (5): Calculated as per ACLCA ISO 21930 Guidance, 6.5 Secondary materials. [11] SM is present in recycled nylon yarn.
- (6): Represents the use of net fresh water calculated from life cycle inventory results, i.e., water consumption using ReCiPe Midpoint (E) 2016.



1 m <sup>2</sup> of installed Recycled Nylon Yarn Modular Carpet in use for 75 years								
Environmental indicator	Unit	A1-A3 (per m2)	A4 (per m2)	A5 (per m2)	B2 (per m2)	B4 (per m2)	C2 (per m2)	C4 (per m2)
<i>Output flows and waste categories</i>								
HWD <sup>(1)</sup>	kg	7.63E+01	2.31E+00	5.31E-03	3.09E-01	6.31E+01	1.06E+01	6.04E-04
NHWD <sup>(2)</sup>	kg	2.22E+01	4.12E-01	9.10E-03	3.39E-01	1.10E+00	1.69E+01	9.01E-04
HLRW <sup>(3)</sup>	m <sup>3</sup>	1.70E-06	3.01E-07	6.31E-13	1.51E-08	1.22E-07	1.26E-06	6.95E-14
ILLRW <sup>(4)</sup>	m <sup>3</sup>	3.08E-06	4.78E-07	3.68E-12	2.44E-08	5.69E-07	2.01E-06	4.12E-13
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR <sup>(5)</sup>	kg	1.21E+00	2.31E-01	0.00E+00	1.16E-02	0.00E+00	9.71E-01	0.00E+00
MER <sup>(5)</sup>	kg	1.58E+00	3.02E-01	0.00E+00	1.51E-02	0.00E+00	1.27E+00	0.00E+00
EE	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<p><b>HWD</b> : Hazardous waste disposed; <b>NHWD</b>: Non-hazardous waste disposed; <b>HLRW</b>: High-level radioactive waste, conditioned, to final repository; <b>ILLRW</b>: Intermediate- and low-level radioactive waste, conditioned to final repository; <b>CRU</b>: Components for re-use; <b>MFR</b>: Materials for recycling; <b>MER</b>: Materials for energy recovery; <b>EE</b>: Exported energy.</p>								

- (1): Calculated from life cycle inventory results, based on datasets classified under "treatment and disposal of hazardous waste."
- (2): Calculated from life cycle inventory results, based on waste that is neither "hazardous" nor "radioactive."
- (3): Calculated from life cycle inventory results, based onecoinvent waste flow "high-level radioactive waste for final repository."
- (4): Calculated from life cycle inventory results, based onecoinvent waste flow "low-level radioactive waste for final repository."
- (5): Calculated based on the amounts leaving the system boundary when they have reached the end-of-waste state.

**Polypropylene Yarn Modular Carpets**

1 m <sup>2</sup> of installed Polypropylene Yarn Modular Carpet in use for 75 years								
Environmental indicator	Unit	A1-A3 (per m <sup>2</sup> )	A4 (per m <sup>2</sup> )	A5 (per m <sup>2</sup> )	B2 (per m <sup>2</sup> )	B4 (per m <sup>2</sup> )	C2 (per m <sup>2</sup> )	C4 (per m <sup>2</sup> )
<b>TRACI 2.1</b>								
GWP <sup>(1)(3)</sup>	kg CO <sub>2</sub> eq.	6.76E+00	7.71E-01	5.81E-01	2.04E+01	3.29E+01	6.65E-02	3.94E-02
GWP <sup>(2)(3)</sup>	kg CO <sub>2</sub> eq.	6.60E+00	7.68E-01	5.64E-01	2.02E+01	3.21E+01	6.62E-02	3.85E-02
AP	kg SO <sub>2</sub> eq.	3.50E-02	4.07E-03	2.82E-03	5.01E-02	1.81E-01	8.10E-04	2.51E-03
EP	kg N eq.	7.66E-03	3.25E-04	1.66E-03	1.19E-01	3.92E-02	5.82E-05	1.03E-04
ODP	kg CFC-11 eq.	2.80E-07	2.38E-09	1.63E-08	2.01E-07	1.20E-06	2.29E-10	1.02E-09
SFP	kg O <sub>3</sub> eq.	5.24E-01	1.32E-01	4.38E-02	5.64E-01	2.91E+00	2.21E-02	6.45E-03
FFD	MJ Surplus	1.80E+01	1.37E+00	1.32E+00	2.32E+01	8.36E+01	1.31E-01	1.11E-01
<b>GWP</b> : Global Warming Potential; <b>AP</b> : Acidification Potential; <b>EP</b> : Eutrophication Potential; <b>ODP</b> : Ozone Layer Depletion Potential; <b>SFP</b> : Smog Formation Potential; <b>FFD</b> : Fossil Fuel Depletion Potential								

(1): 100-year time horizon GWP factors are provided by the IPCC 2013 Fifth Assessment Report (AR5).[8]

(2): 100-year time horizon GWP factors are provided by the IPCC 2007 Fourth Assessment Report (AR4) and used in TRACI 2.1.[9], [10]

(3): GWP 100, excludes biogenic CO<sub>2</sub> removal and emissions associated with biobased products and packaging. The product does not contain biogenic carbon.

1 m <sup>2</sup> of installed Polypropylene Yarn Modular Carpet in use for 75 years								
Environmental indicator	Unit	A1-A3 (per m <sup>2</sup> )	A4 (per m <sup>2</sup> )	A5 (per m <sup>2</sup> )	B2 (per m <sup>2</sup> )	B4 (per m <sup>2</sup> )	C2 (per m <sup>2</sup> )	C4 (per m <sup>2</sup> )
<b>Resource use</b>								
RPR <sub>E</sub> <sup>(1)</sup>	MJ, LHV	1.13E+01	1.45E-02	6.95E-01	5.49E+01	4.79E+01	1.74E-03	1.44E-02
RPR <sub>M</sub> <sup>(2)</sup>	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RPR <sub>T</sub>	MJ, LHV	1.13E+01	1.45E-02	6.95E-01	5.49E+01	4.79E+01	1.74E-03	1.44E-02
NRPR <sub>E</sub> <sup>(3)</sup>	MJ, LHV	9.59E+01	9.79E+00	8.42E+00	3.71E+02	4.63E+02	9.42E-01	8.47E-01
NRPR <sub>M</sub> <sup>(4)</sup>	MJ, LHV	5.43E+01	0.00E+00	2.71E+00	0.00E+00	2.28E+02	0.00E+00	0.00E+00
NRPR <sub>T</sub>	MJ, LHV	1.50E+02	9.79E+00	1.11E+01	3.71E+02	6.91E+02	9.42E-01	8.47E-01
SM <sup>(5)</sup>	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW <sup>(6)</sup>	m <sup>3</sup>	1.25E-01	9.62E-05	9.15E-03	2.40E-01	5.40E-01	1.11E-05	8.62E-04
<p><b>RPR<sub>E</sub></b> : Renewable primary resources used as energy carrier (fuel); <b>RPR<sub>M</sub></b>: Renewable primary resources with energy content used as material;  <b>RPR<sub>T</sub></b>: Renewable primary resources total; <b>NRPR<sub>E</sub></b>: Non-renewable primary resources used as energy carrier (fuel); <b>NRPR<sub>M</sub></b>: Non-renewable primary resources with energy content used as material; <b>NRPR<sub>T</sub></b>: Non-renewable primary resources total; <b>SM</b>: Secondary materials; <b>RSF</b>: Renewable secondary fuels; <b>NRSF</b>: Non-renewable secondary fuels; <b>FW</b>: Use of net fresh water resources.</p>								

- (1):  $RPR_E = RPR_T - RPR_M$ , where  $RPR_T$  is equal to the value for renewable energy obtained using the CED methodology (LHV).
- (2): Calculated as per ACLCA ISO 21930 Guidance, 6.2 Renewable primary resources with energy content used as a material,  $RPR_M$ . [11]
- (3):  $NRPR_E = NRPR_T - NRPR_M$ , where  $NRPR_T$  is equal to the value for non-renewable energy obtained using the CED methodology (LHV).
- (4): Calculated as per ACLCA ISO 21930 Guidance, 6.4 Non-renewable primary resources with energy content used as a material,  $NRPR_M$ . [11]
- (5): Calculated as per ACLCA ISO 21930 Guidance, 6.5 Secondary materials.[11]
- (6): Represents the use of net fresh water calculated from life cycle inventory results, i.e., water consumption using ReCiPe Midpoint (E) 2016.



1 m <sup>2</sup> of installed Polypropylene Yarn Modular Carpet in use for 75 years								
Environmental indicator	Unit	A1-A3 (per m <sup>2</sup> )	A4 (per m <sup>2</sup> )	A5 (per m <sup>2</sup> )	B2 (per m <sup>2</sup> )	B4 (per m <sup>2</sup> )	C2 (per m <sup>2</sup> )	C4 (per m <sup>2</sup> )
<i>Output flows and waste categories</i>								
HWD <sup>(1)</sup>	kg	2.79E+00	5.12E-03	3.33E-01	6.31E+01	1.26E+01	5.84E-04	2.52E-02
NHWD <sup>(2)</sup>	kg	2.72E-01	8.79E-03	3.22E-01	1.10E+00	1.58E+01	8.70E-04	3.35E+00
HLRW <sup>(3)</sup>	m <sup>3</sup>	6.29E-08	6.10E-13	3.24E-09	1.22E-07	2.65E-07	6.72E-14	1.37E-11
ILLRW <sup>(4)</sup>	m <sup>3</sup>	4.89E-08	3.56E-12	2.97E-09	5.69E-07	2.08E-07	3.98E-13	7.44E-11
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR <sup>(5)</sup>	kg	4.98E-02	0.00E+00	2.49E-03	0.00E+00	2.09E-01	0.00E+00	0.00E+00
MER <sup>(5)</sup>	kg	3.00E-01	0.00E+00	1.50E-02	0.00E+00	1.26E+00	0.00E+00	0.00E+00
EE	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<p><b>HWD</b> : Hazardous waste disposed; <b>NHWD</b>: Non-hazardous waste disposed; <b>HLRW</b>: High-level radioactive waste, conditioned, to final repository; <b>ILLRW</b>: Intermediate- and low-level radioactive waste, conditioned to final repository; <b>CRU</b>: Components for re-use; <b>MFR</b>: Materials for recycling; <b>MER</b>: Materials for energy recovery; <b>EE</b>: Exported energy.</p>								

- (1): Calculated from life cycle inventory results, based on datasets classified under "treatment and disposal of hazardous waste."
- (2): Calculated from life cycle inventory results, based on waste that is neither "hazardous" nor "radioactive."
- (3): Calculated from life cycle inventory results, based on ecoinvent waste flow "high-level radioactive waste for final repository."
- (4): Calculated from life cycle inventory results, based on ecoinvent waste flow "low-level radioactive waste for final repository."
- (5): Calculated based on the amounts leaving the system boundary when they have reached the end-of-waste state.

**Polyester Yarn Modular Carpets**

1 m <sup>2</sup> of installed Polyester Yarn Modular Carpet in use for 75 years								
Environmental indicator	Unit	A1-A3 (per m2)	A4 (per m2)	A5 (per m2)	B2 (per m2)	B4 (per m2)	C2 (per m2)	C4 (per m2)
<b>TRACI 2.1</b>								
GWP <sup>(1)(3)</sup>	kg CO <sub>2</sub> eq.	8.58E+00	9.08E-01	6.90E-01	2.04E+01	4.12E+01	7.84E-02	4.64E-02
GWP <sup>(2)(3)</sup>	kg CO <sub>2</sub> eq.	8.40E+00	9.05E-01	6.71E-01	2.02E+01	4.04E+01	7.80E-02	4.54E-02
AP	kg SO <sub>2</sub> eq.	4.55E-02	4.79E-03	3.42E-03	5.01E-02	2.30E-01	9.55E-04	2.96E-03
EP	kg N eq.	1.12E-02	3.83E-04	2.00E-03	1.19E-01	5.50E-02	6.86E-05	1.21E-04
ODP	kg CFC-11 eq.	9.89E-07	2.80E-09	5.18E-08	2.01E-07	4.18E-06	2.70E-10	1.20E-09
SFP	kg O <sub>3</sub> qeq.	6.12E-01	1.55E-01	5.00E-02	5.64E-01	3.41E+00	2.61E-02	7.60E-03
FFD	MJ Surplus	2.27E+01	1.62E+00	1.57E+00	2.32E+01	1.05E+02	1.54E-01	1.30E-01
<b>GWP</b> : Global Warming Potential; <b>AP</b> : Acidification Potential; <b>EP</b> : Eutrophication Potential; <b>ODP</b> : Ozone Layer Depletion Potential; <b>SFP</b> : Smog Formation Potential; <b>FFD</b> : Fossil Fuel Depletion Potential								

(1): 100-year time horizon GWP factors are provided by the IPCC 2013 Fifth Assessment Report (AR5).[8]

(2): 100-year time horizon GWP factors are provided by the IPCC 2007 Fourth Assessment Report (AR4) and used in TRACI 2.1.[9], [10]

(3): GWP 100, excludes biogenic CO<sub>2</sub> removal and emissions associated with biobased products and packaging. The product does not contain biogenic carbon.



1 m <sup>2</sup> of installed Polyester Yarn Modular Carpet in use for 75 years								
Environmental indicator	Unit	A1-A3 (per m <sup>2</sup> )	A4 (per m <sup>2</sup> )	A5 (per m <sup>2</sup> )	B2 (per m <sup>2</sup> )	B4 (per m <sup>2</sup> )	C2 (per m <sup>2</sup> )	C4 (per m <sup>2</sup> )
<b>Resource use</b>								
RPR <sub>E</sub> <sup>(1)</sup>	MJ, LHV	7.60E+00	1.70E-02	5.13E-01	5.49E+01	3.26E+01	2.05E-03	1.70E-02
RPR <sub>M</sub> <sup>(2)</sup>	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RPR <sub>T</sub>	MJ, LHV	7.60E+00	1.70E-02	5.13E-01	5.49E+01	3.26E+01	2.05E-03	1.70E-02
NRPR <sub>E</sub> <sup>(3)</sup>	MJ, LHV	1.23E+02	1.15E+01	9.92E+00	3.71E+02	5.88E+02	1.11E+00	9.98E-01
NRPR <sub>M</sub> <sup>(4)</sup>	MJ, LHV	6.78E+01	0.00E+00	3.39E+00	0.00E+00	2.85E+02	0.00E+00	0.00E+00
NRPR <sub>T</sub>	MJ, LHV	1.91E+02	1.15E+01	1.33E+01	3.71E+02	8.73E+02	1.11E+00	9.98E-01
SM <sup>(5)</sup>	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW <sup>(6)</sup>	m <sup>3</sup>	1.27E-01	1.13E-04	9.30E-03	2.40E-01	5.52E-01	1.31E-05	1.02E-03
<p><b>RPR<sub>E</sub></b> : Renewable primary resources used as energy carrier (fuel); <b>RPR<sub>M</sub></b>: Renewable primary resources with energy content used as material;  <b>RPR<sub>T</sub></b>: Renewable primary resources total; <b>NRPR<sub>E</sub></b>: Non-renewable primary resources used as energy carrier (fuel); <b>NRPR<sub>M</sub></b>: Non-renewable primary resources with energy content used as material; <b>NRPR<sub>T</sub></b>: Non-renewable primary resources total; <b>SM</b>: Secondary materials; <b>RSF</b>: Renewable secondary fuels; <b>NRSF</b>: Non-renewable secondary fuels; <b>FW</b>: Use of net fresh water resources.</p>								

- (1):  $RPR_E = RPR_T - RPR_M$ , where  $RPR_T$  is equal to the value for renewable energy obtained using the CED methodology (LHV).
- (2): Calculated as per ACLCA ISO 21930 Guidance, 6.2 Renewable primary resources with energy content used as a material,  $RPR_M$ . [11]
- (3):  $NRPR_E = NRPR_T - NRPR_M$ , where  $NRPR_T$  is equal to the value for non-renewable energy obtained using the CED methodology (LHV).
- (4): Calculated as per ACLCA ISO 21930 Guidance, 6.4 Non-renewable primary resources with energy content used as a material,  $NRPR_M$ . [11]
- (5): Calculated as per ACLCA ISO 21930 Guidance, 6.5 Secondary materials.[11]
- (6): Represents the use of net fresh water calculated from life cycle inventory results, i.e., water consumption using ReCiPe Midpoint (E) 2016.

1 m <sup>2</sup> of installed Polyester Yarn Modular Carpet in use for 75 years								
Environmental indicator	Unit	A1-A3 (per m2)	A4 (per m2)	A5 (per m2)	B2 (per m2)	B4 (per m2)	C2 (per m2)	C4 (per m2)
<i>Output flows and waste categories</i>								
HWD <sup>(1)</sup>	kg	3.94E+00	6.04E-03	3.91E-01	6.31E+01	1.75E+01	6.88E-04	2.97E-02
NHWD <sup>(2)</sup>	kg	2.75E-01	1.04E-02	3.75E-01	1.10E+00	1.84E+01	1.03E-03	3.95E+00
HLRW <sup>(3)</sup>	m <sup>3</sup>	7.38E-08	7.18E-13	3.78E-09	1.22E-07	3.10E-07	7.92E-14	1.61E-11
ILLRW <sup>(4)</sup>	m <sup>3</sup>	6.07E-08	4.19E-12	3.56E-09	5.69E-07	2.57E-07	4.69E-13	8.77E-11
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR <sup>(5)</sup>	kg	4.20E-02	0.00E+00	2.10E-03	0.00E+00	1.76E-01	0.00E+00	0.00E+00
MER <sup>(5)</sup>	kg	3.52E-01	0.00E+00	1.76E-02	0.00E+00	1.48E+00	0.00E+00	0.00E+00
EE	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<p><b>HWD</b> : Hazardous waste disposed; <b>NHWD</b>: Non-hazardous waste disposed; <b>HLRW</b>: High-level radioactive waste, conditioned, to final repository; <b>ILLRW</b>: Intermediate- and low-level radioactive waste, conditioned to final repository; <b>CRU</b>: Components for re-use; <b>MFR</b>: Materials for recycling; <b>MER</b>: Materials for energy recovery; <b>EE</b>: Exported energy.</p>								

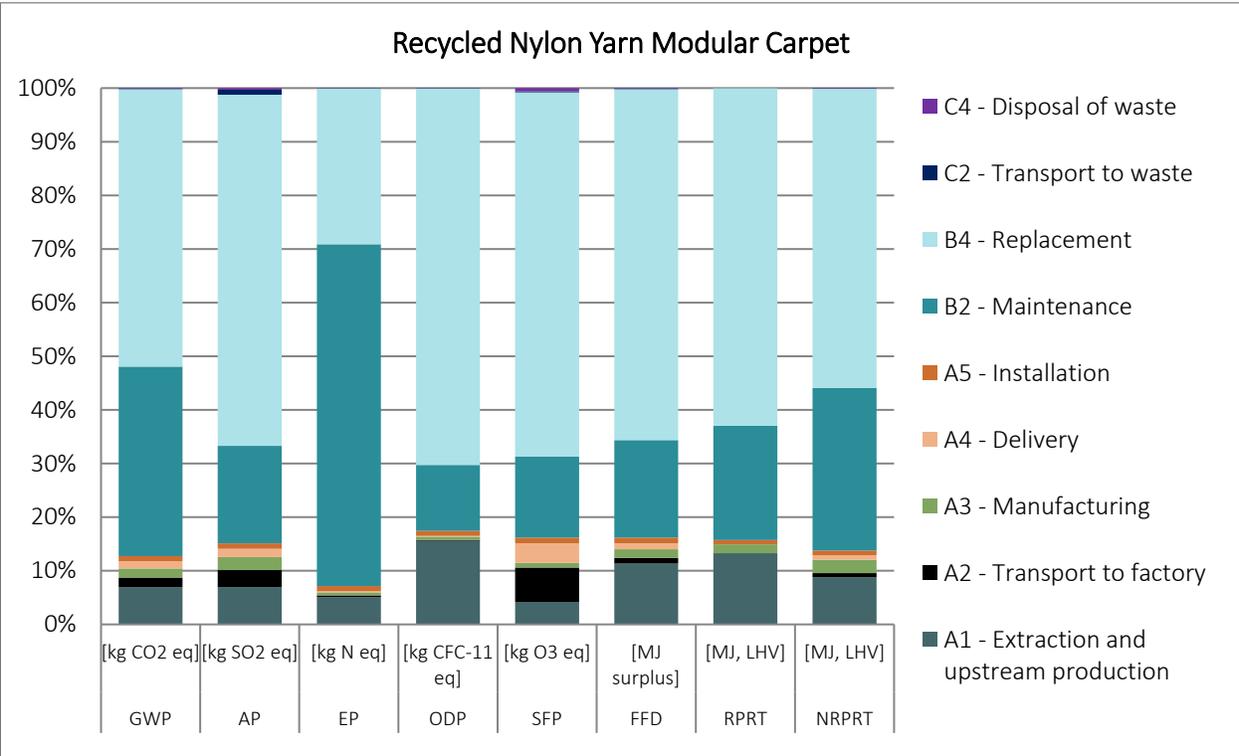
- (1): Calculated from life cycle inventory results, based on datasets classified under "treatment and disposal of hazardous waste."
- (2): Calculated from life cycle inventory results, based on waste that is neither "hazardous" nor "radioactive."
- (3): Calculated from life cycle inventory results, based on ecoinvent waste flow "high-level radioactive waste for final repository."
- (4): Calculated from life cycle inventory results, based on ecoinvent waste flow "low-level radioactive waste for final repository."
- (5): Calculated based on the amounts leaving the system boundary when they have reached the end-of-waste state.

## 5.2. CONTRIBUTION ANALYSIS

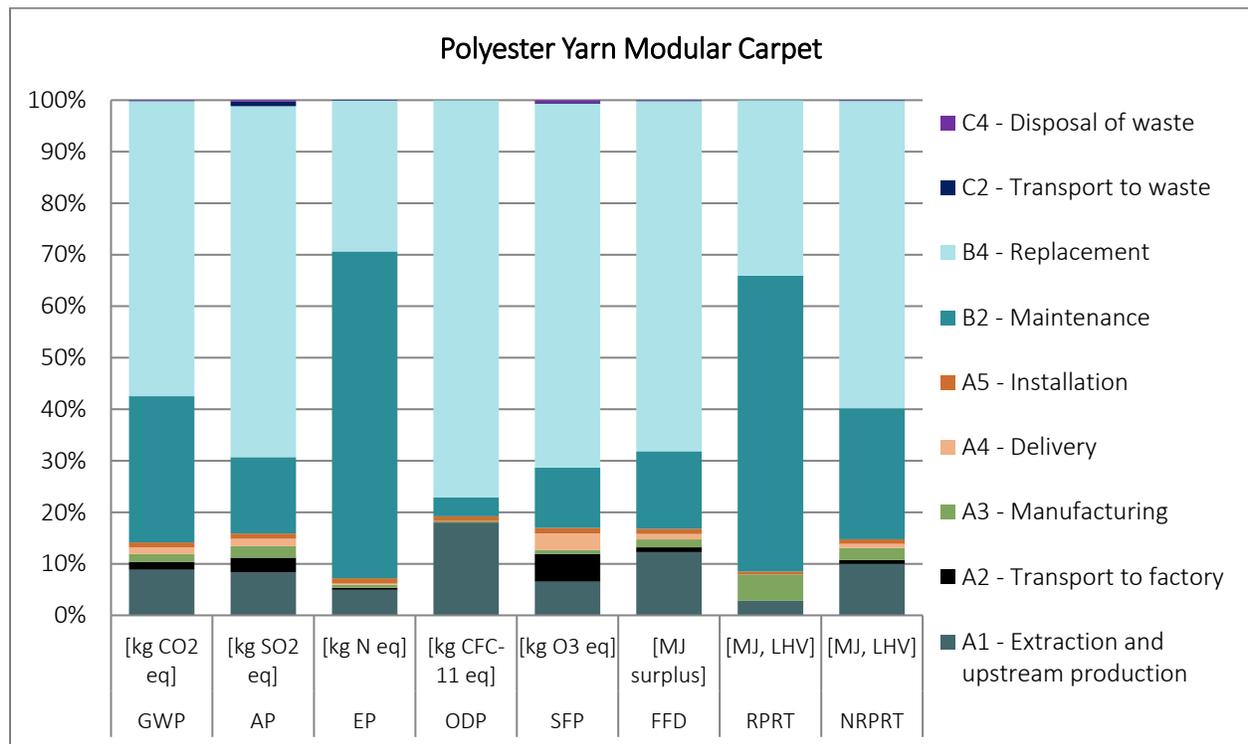
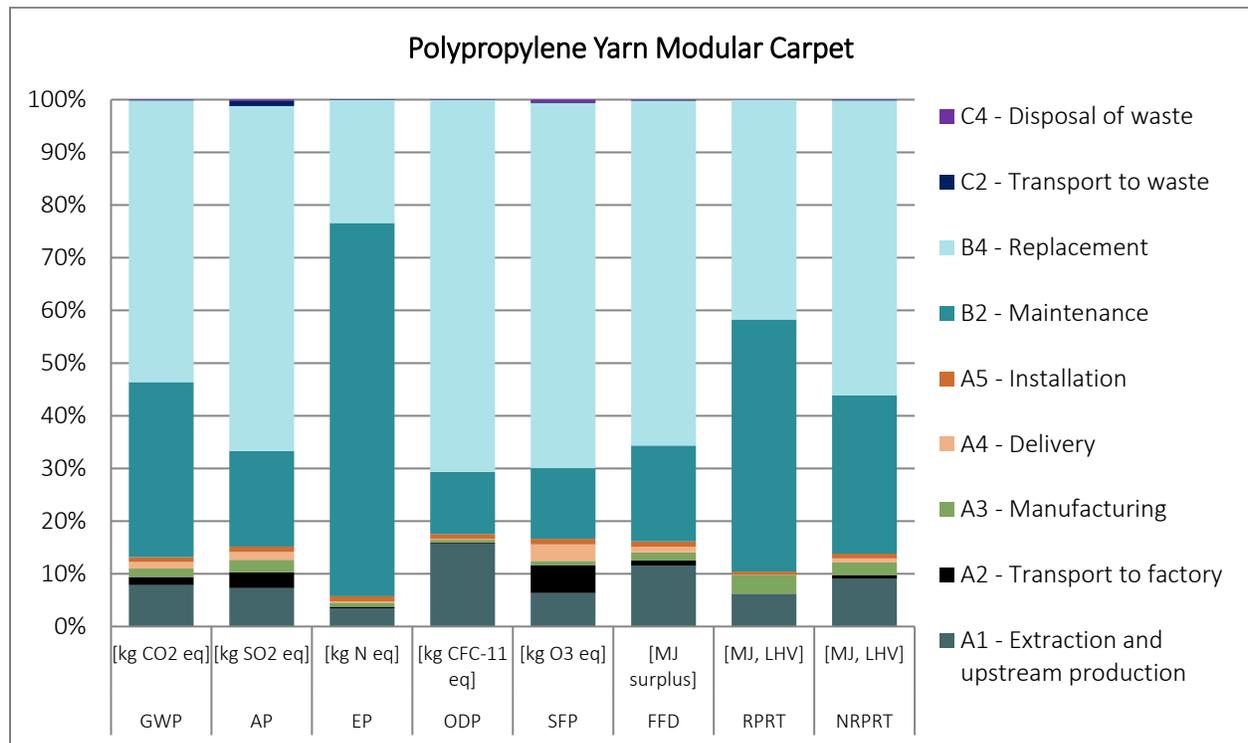
The following section details the contribution to the impacts of the different life cycle stages of the products.

It can be seen, in the three figures shown below, that the replacement (B4) or maintenance (B2) of Modular Carpets are the main contributors to the six environmental impact indicators, as well as renewable and non-renewable energy use. It should be noted that carpet maintenance is highly dependent on customer habits.

Modular Carpets can have different densities ranging from 3.20 kg/m<sup>2</sup> to 3.68 kg/m<sup>2</sup> for Recycled Nylon Yarn Modular Carpets, from 3.22 kg/m<sup>2</sup> to 3.60 kg/m<sup>2</sup> for Polypropylene Yarn Modular Carpets, and from 3.93 kg/m<sup>2</sup> to 4.04 kg/m<sup>2</sup> for Polyester Yarn Modular Carpets. The impact of this variation on the results is below ± 10%; therefore, results for product weighted average are representative of the various carpet styles.



**GWP** : Global Warming Potential; **AP**: Acidification Potential; **EP**: Eutrophication Potential; **ODP**: Ozone Layer Depletion Potential; **SFP**: Smog Formation Potential; **FFD**: Fossil Fuel Depletion Potential



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## 6. ADDITIONAL ENVIRONMENTAL INFORMATION

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### 6.1. REGULATED HAZARDOUS SUBSTANCES

No substances required to be reported as hazardous are associated with the products.

### 6.2. DANGEROUS SUBSTANCES

No dangerous substances are known to be released from the Modular Carpets. Recycled Nylon Yarn and Polypropylene Yarn Modular Carpets are Green Label Plus certified and thus comply with CDPH v1.2 VOC emissions test for Private Office and School Classroom scenarios (Total VOCs are 0.5 mg/m<sup>3</sup> or less).

### 6.3. ADDITIONAL INFORMATION

Venture Carpets is part of a third-party verification process with Vertima Inc. where Venture Carpets' Modular Carpets and its entire supply chain are assessed. At the end of the process, they have received a Validated Eco-Declaration® summarizing verified environmental claims.

Venture Carpets has also published a Health Product Declaration® for their Modular Carpets. More details are available on the HPDC public repository: <https://www.hpd-collaborative.org/hpd-public-repository/>



## 7. REFERENCES

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- [1] International Organization for Standardization (ISO), “ISO 14025 Environmental labels and declarations - Type III environmental declarations - Principles and procedures,” 2006.
- [2] UL Environment, “PCR Part B: Flooring EPD Requirements,” 2018[Online]. Available: <https://www.ul.com/resources/product-category-rules-pcrs>.
- [3] UL Environment, “Product Category Rule (PCR) Guidance for Building-Related Products and Services Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010 (v.4.0),” 2022[Online]. Available: <https://www.ul.com/services/product-category-rules-pcrs#uledev>.
- [4] International Organization for Standardization (ISO), “ISO 14044:2006/AMD1:2017/AMD 2:2020 Environmental management - Life cycle assessment - Requirements and guidelines,” 2006.
- [5] International Organization for Standardization (ISO), “ISO 21930:2017(E) Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services,” 2017.
- [6] F. R. *et al.*, “Overview and Methodology. ecoinvent report No. 1,” Dübendorf, 2007.
- [7] National Renewable Energy Laboratory, “U.S. Life Cycle Inventory Database,” 2012. [Online]. Available: <https://www.lcacommons.gov/nrel/search>. [Accessed: 03-Feb-2020].
- [8] IPCC, “Climate Change 2013: The Physical Science Basis. Contribution of Working Groups I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,” Geneva, Switzerland, 2013[Online]. Available: [https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5\\_Chapter08\\_FINAL.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf).
- [9] T. Barker, “Climate Change 2007 : An Assessment of the Intergovernmental Panel on Climate Change,” 2007[Online]. Available: [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf).
- [10] J. C. Bare, “Traci - The Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts,” *J. Ind. Ecol.*, vol. 6, no. 3–4, pp. 49–78, 2002.
- [11] PCR Committee of the American Center for Life Cycle Assessment (ACLCA), “ACLCA Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017”[Online]. Available: <https://aclca.org/aclca-iso-21930-guidance/>.
- [12] Vertima, “Life Cycle Assessment of Venture Carpets Modular Carpets,” 2024.
- [13] CSA Group, “CSA Group Environmental Product Declaration (EPD) Program - Program requirements,” 2013[Online]. Available: [https://www.csaregistry.ca/GHG\\_VR\\_Listing/EPD\\_ProcessPage](https://www.csaregistry.ca/GHG_VR_Listing/EPD_ProcessPage).

# Venture

Venture Carpets Inc.

700, 120th Street, Saint-Georges (QC)

G5Y 6R6 Canada

[venturecarpets.com](http://venturecarpets.com)

EPD

This LCA and EPD were prepared by Vertima Inc.

604 Saint Viateur Street  
Quebec, QC  
(418) 990-2800  
G2L 2K8 CANADA

 **vertima**  
Environmental certification experts

[vertima.ca](http://vertima.ca)