

## ENVIRONMENTAL PRODUCT DECLARATION

# GTI MAX CONNECT

GERFLOR GTI MAX INTERLOCKING LOOSELAY VINYL TILE



GTI Max Connect – Interlocking looselay vinyl featuring a proprietary surface treatment



Because we think actions speak louder than words, Gerflor has always been willing to act and to develop flooring solutions that meet the most challenging requirements in term of design, durability, easy installation, acoustic comfort, ... When it comes to sustainability, we also set ourselves to the highest standards. We believe in developing great products that not only perform, but also contribute to achieving high indoor air quality and top contribution to all green building certification schemes.

GTI Max Connect is:

- 100% Floorscore and M1 certified meaning that our product has been certified independently third party certified to comply with strict volatile organic compounds (VOC) emissions criteria.
- 100% REACH compliant (voluntarily independently Third Party Verified)

GTI Max Connect is developed with a view to optimize the environmental impact at every stage of the product's life. This includes assessment of the manufacture, installation, ongoing maintenance, eventual uplift and recycling of the products. As part of this commitment, Gerflor has decided to take a leadership position by publishing a third party independently verified EPD for each of its product ranges.



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**GTI Max Connect**  
interlocking loose-lay vinyl tile

According to ISO 14025,  
EN 15804, and ISO 21930:2017

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Environment 333 Pfingsten Road, Northbrook, IL 60611	<a href="https://www.ul.com/">https://www.ul.com/</a> <a href="https://spot.ul.com">https://spot.ul.com</a>
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	General Program Instructions v.2.4 July 2018	
MANUFACTURER NAME AND ADDRESS	GERFLOR 50 Cours de la République, 69100 Villeurbanne, France	
DECLARATION NUMBER	4789907913.101.1	
DECLARED PRODUCT & FUNCTIONAL UNIT OR DECLARED UNIT	GTI MAX The functional unit used for this study is 1m <sup>2</sup> of heterogeneous commercial flooring, for a 25 years service life.	
REFERENCE PCR AND VERSION NUMBER	PCR -Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 3.2, UL Environment. PCR - Part B: Flooring EPD Requirements, Second Edition, Dated September 28, 2018, UL Environment.	
DESCRIPTION OF PRODUCT APPLICATION/USE	The product is classified in accordance with EN ISO 10874 and in reference to the FCSS (Floor Covering Standard Symbols) to be installed in various areas of application including commercial and industrial applications.	
PRODUCT RSL DESCRIPTION (IF APPL.)	The stated RSL is 25 years. The manufacturer has provided this service life on the basis of his experience of flooring manufacture and supply.	
MARKETS OF APPLICABILITY	Commercial market	
DATE OF ISSUE	July 1, 2021	
PERIOD OF VALIDITY	5 years	
EPD TYPE	product-specific	
RANGE OF DATASET VARIABILITY	One product is considered in this EPD.	
EPD SCOPE	Cradle to Grave	
YEAR(S) OF REPORTED PRIMARY DATA	2019	
LCA SOFTWARE & VERSION NUMBER	Simapro 9	
LCI DATABASE(S) & VERSION NUMBER	Ecoinvent 3.6 – allocation cut-off by classification	
LCIA METHODOLOGY & VERSION NUMBER	Methode EN 15804_FR_Ev-DEC 1.18 (EVEA)	

The PCR review was conducted by:	UL Environment
	PCR Review Panel
This declaration was independently verified in accordance with ISO 14025: 2006. <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	epd@ulenvironment.com
	María José Monteagudo Arrebola
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	
	Thomas P. Gloria, Industrial Ecology Consultants

**LIMITATIONS**

**Exclusions:** EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc.

**Accuracy of Results:** EPDs regularly rely on estimations of impacts; the level of accuracy in estimation of effect differs for any particular product line and reported impact.

**Comparability:** EPDs from different programs may not be comparable. Full conformance with a PCR 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.

## 1. Product Definition and Information

### 1.1. Description of Company/Organization

The product is commercialized by Gerflor and made in Saint-Paul Trois Châteaux Manufacturing Plant (France). This plant complies with:

- ISO 9001 Quality Management System
- ISO 14001 Environmental Management System
- ISO 50001 Energy Management

### 1.2. Product Description

#### Product Identification

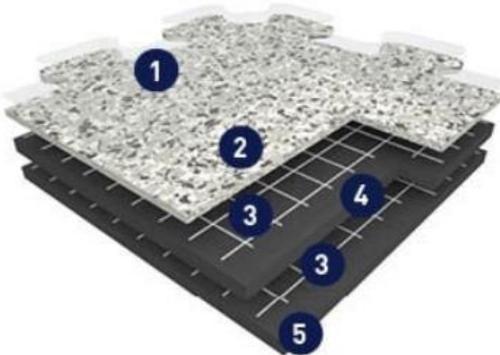
Product Designation: "GTI Max Connect"

This environmental product declaration covers Gerflor GTI Max Connect tiles flooring. GTI Max sheet flooring is a 635x635mm<sup>2</sup> wide pressed sheet flooring with 6.0mm thickness. The tile is protected by PUR+ polyurethane surface treatment that provides easy maintenance, stain resistance and reduces the need to refinish the flooring.

The Interlocking looselay vinyl tiles are classified according to the United Nations Standard Products and Service Code (UNSPSC) as "Flooring" : UNSPSC Code 30161700.

And according to Construction Specification Institute (CSI) as "Resilient flooring" : CSI Code 09 65 00.

The following figure show the GTI Max Connect Product:



1. PUR + treatment
2. Homogeneous PVC wear layer
3. Fiberglass sheet
4. 100% Recycled compact interlayer
5. 100% Recycled compact base



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## Product Specification

The products considered in this EPD meet or exceed one of the following Technical Specifications:

Meets or exceeds all technical requirements in ASTM F1913 Standard Specification for Vinyl Sheet Floor Covering Without Backing

Meets or exceeds all technical requirements in EN ISO 10582:2010 – Resilient floor coverings – Heterogeneous poly(vinyl chloride) floor covering — Specifications

GTI Max heterogeneous sheet flooring meets requirements of the standard EN 14041 – Resilient, textile and stratified floor coverings: Essential characteristics.

Specification Fire Testing:

Class 1 when tested in accordance with ASTM E 648, Standard Test Method for Critical Radiant Flux

Class 1 when tested in accordance with ASTM E 662, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials

The product also possesses the following characteristics:

- EN 13501-1 Fire Behavior  $B_{fl} - s1$
- EN 1815 Slip Resistance R10
- M1 certified
- 100% Floorscore



## Flow Diagram

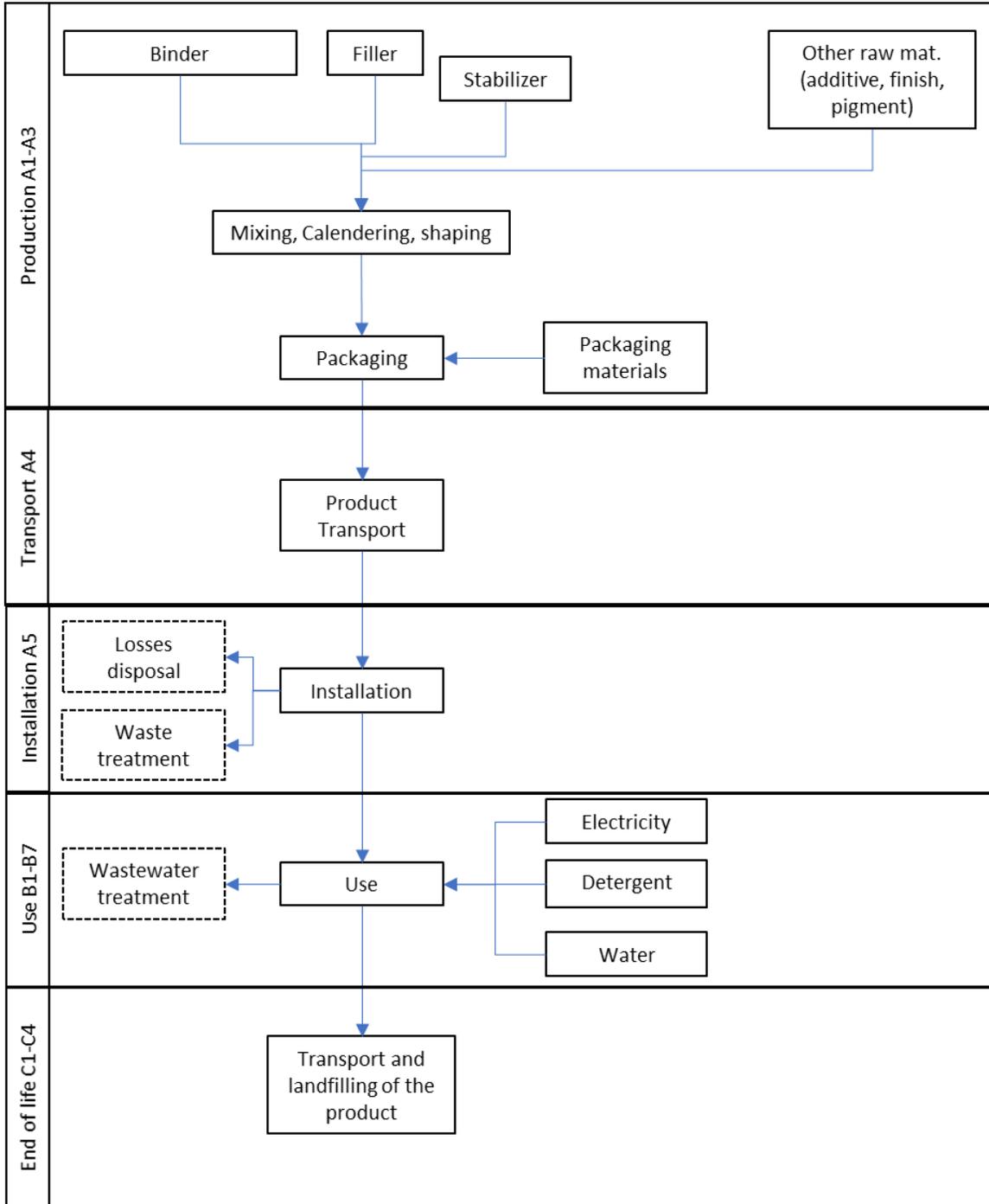


Figure 1 : Flow product diagram

### 1.3. Application

GTI Max Connect classified in accordance with EN ISO 10874 and in reference to the FCSS (Floor Covering Standard Symbols) to be installed in various areas of application including commercial and industrial applications.

### 1.4. Declaration of Methodological Framework

This EPD covers the entire life cycle of the product from cradle to grave (modules A1 to C4) excluding modules for which there are no inputs/outputs. No known flows are deliberately excluded from this EPD.

For this product, the stated RSL is 25 years. It should be noted, however, that the service life of a homogeneous vinyl flooring may vary depending on the amount and nature of floor traffic and the type and frequency of maintenance. The manufacturer has provided this service life on the basis of his experience of flooring manufacture and supply. This RSL is applicable as long as the product use complies with that defined by ISO 14041 and ISO 10 874 in accordance with the product's classification.

### 1.5. Technical Requirements

Name		Value	Unit
<b>Product Thickness</b>		6.00	mm
<b>Product Weight</b>		9.365	kg/m <sup>2</sup>
<b>Product Form</b>	<b>Tiles</b>	635 x 635	mm

Table 1: technical data

### 1.6. Properties of Declared Product as Delivered

The product declared in this document complies with the following codes or regulations:

- ISO 9001 Quality Management System and ISO 14001 Environmental Management System
- Floorscore SCS-FS-02146
- M1 – Certificate n°422.1

### 1.7. Material Composition

Component	Mass %
<b>Binder</b>	60.01%
<b>Additive</b>	0.43%
<b>Stabilizer</b>	0.53%
<b>Filler</b>	36.93%
<b>Finish</b>	0.27%
<b>Reinforcement</b>	1.71%
<b>Pigments</b>	0.13%

Table 2: Material content

## 1.8. Manufacturing

GTI Max Connect is made in the Gerflor manufacturing plant in Saint-Paul Trois Châteaux, France.

The production of the interlocking tiles is divided into the following stages:

- Mixing: Binder, filler, additive, stabilizer, and pigments are mixed to obtain mixture
- Pressed: the components are sprinkled on the substrate and pressed at high temperature
- Reinforcement and finish.
- Shaping: rolls are cut at the desired dimensions.
- Packaging: The final product is packed into cardboard box 60% recycled with protection corners 100% recycled. Several boxes are placed into pallet and then wrapped.

Wastes from manufacturing are recycled back into production when possible, residual wastes are sent to landfill. Other wastes products are recycled externally whenever a process exists.

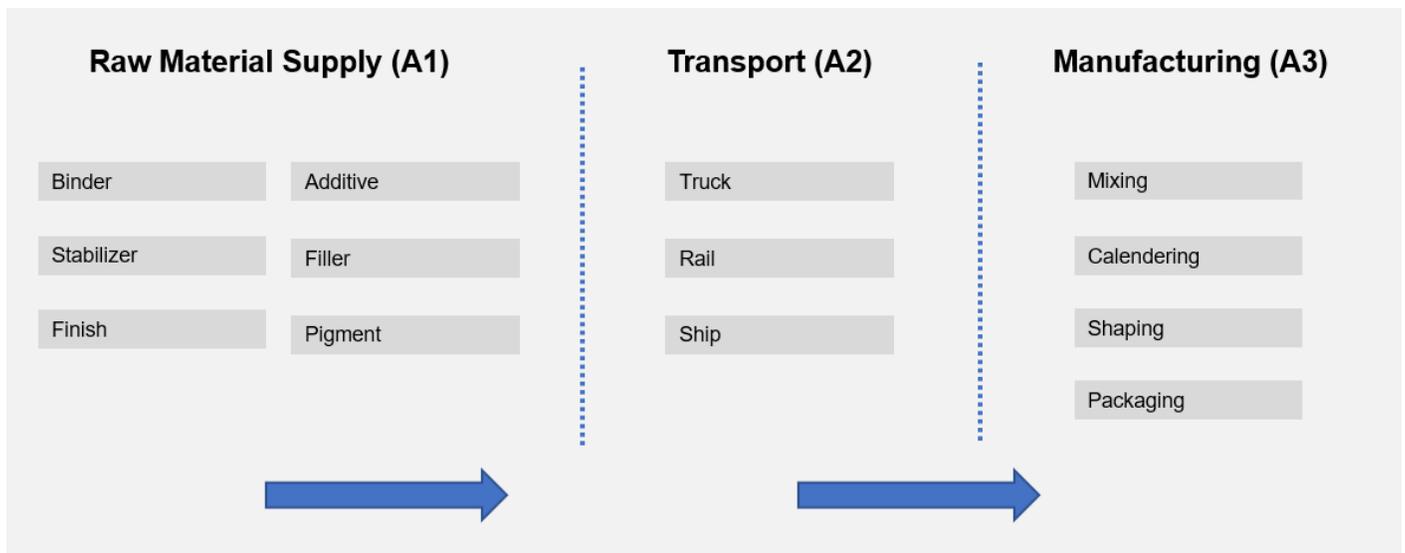


Figure 2: Manufacturing Flow diagram

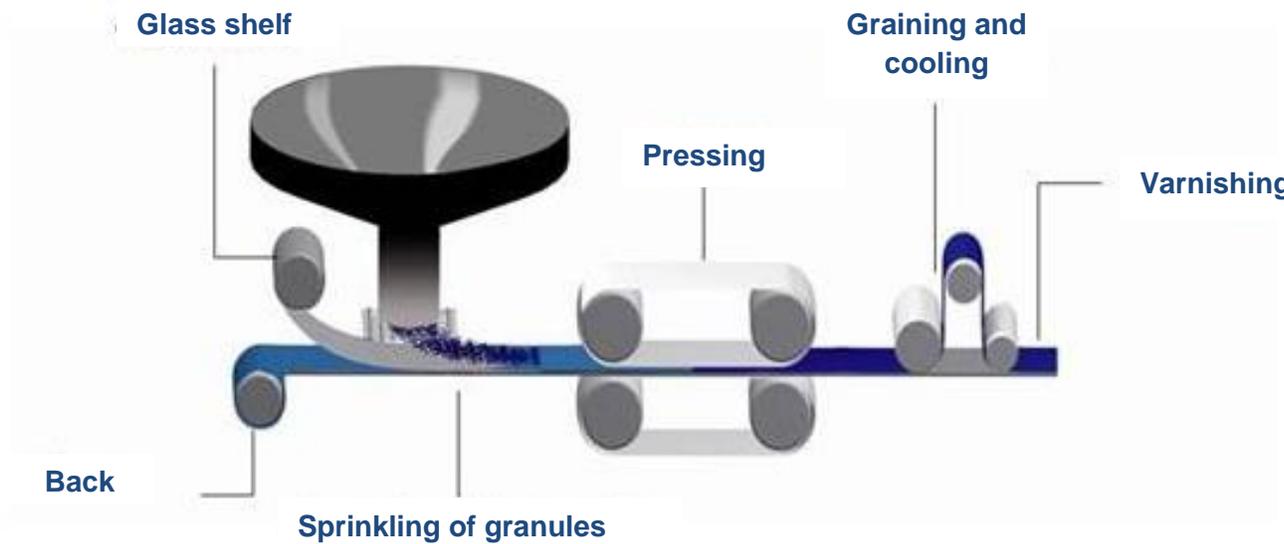


Figure 3: Manufacturing Flow diagram

## 1.9. Packaging

- The products are packed into cardboard box with protection corners, made respectively with 60 and 100% of recycled materials. Several boxes are placed into pallet and then wrapped.

The packaging waste scenario for paper and cardboard is 75% recycling, 20% landfilling and 5% incineration as describe in ULE Part A Requirements. Other materials are sent to landfill (50%) or incinerated (50%).

## 1.10. Transportation

GTI Max Connect is made in France and is then sent to the US market. Distances taken in account are described below.

- Transport distance 16-32T truck (factory to French port: Fos-sur-Mer): 141km
- Transport distance transoceanic freight (Fos-sur-Mer to Montreal): 7167km
- Transport distance train freight (Montreal to Chicago): 1357km
- Transport distance 16-32T truck (Chicago to Bensenville warehouse and then to customer in Denver): 1630km

## 1.11. Product Installation

The product is installed by hand without using acrylic glue.

During the installation approximately 4% of the material is lost as off-cuts – this waste is sent to landfill. Waste classification is according to RCRA for North American region (Resource Conservation and Recovery Act (RCRA),

Subtitle 3).

## 1.12. Use

Current cleaning of the installed floor has been included in this study as following:

- Dry vacuum cleaning : three times a week
- Wet cleaning by hand with water and detergent: two times a week.

## 1.13. Reference Service Life and Estimated Building Service Life

For this product, the stated RSL is 25 years. It should be noted however that the service life of a linoleum flooring may vary depending on the amount and nature of floor traffic and the type and frequency of maintenance. The manufacturer has provided this service life on the basis of his experience of flooring manufacture and supply. This RSL is applicable as long as the product use complies with ISO 14041 and ISO 10874 in accordance with the product's classification.

## 1.14. Reuse, Recycling, and Energy Recovery

A back program and re-use/recycling/energy recovery possibility are in progress for this product.

## 1.15. Disposal

For the purpose of this LCA, it has been assumed that 100% of the product is sent to landfill at the end of its useful life, according to the disposal pathway assumption in PCR Part A for non-metal materials in United States. Product is considered as non-hazardous waste according to north america regulation.

The transport between construction site and landfill facility is by truck, with a distance of 30 km.

## 2. Life Cycle Assessment Background Information

### 2.1. Functional or Declared Unit

The functional unit is one square meter of installed product. The reference service life considered is 25 years.

	Value	Unit
Functional Unit	1	m <sup>2</sup>
Mass	9.365	kg

Table 3: Functional Unit

### 2.2. System Boundary

EPD is declared from cradle to grave, including the following stages:

A1 – A3: includes the provision of all raw materials and their packaging, transport to the production site and energy consumption during the manufacturing of the product, as well as processing of waste generated by the factory.

A4 – A5: includes the transport from the factory to the final customer, packaging of the final product and the installation



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of the product, as well as all consumables and energy required and processing of waste generated during the installation.

B1 – B7: includes provision and transport of all materials, products and services related to the use phase of the product, as well as their related energy and water consumption, and the processing of any resulting waste.

C1 – C4: includes provision and transport of all materials, products and services related to the end of life phase of the product, including energy and water consumption, as well as the end of life processing of the product.

### 2.3. Estimates and Assumptions

Estimates and assumptions are made for transport, installation and deconstruction procedure. Details are provided in section “LCA: scenarios and additional technical information”.

Transport distances have been calculated from the production site to the geographical center of the destination country (US), which provides an average distance for all possible distribution centers within the country. Additional transport between the distribution center and the construction site is considered with a distance of 800 km, according to PCR, part B.

Transport distance from building site to the landfill treatment center is considered with a distance of 161 km, according to PCR part B.

### 2.4. Cut-off Criteria

The cut -off criteria shall be 1% of renewable and non-renewable primary energy usage and 1% of the total mass of that unit process. The total neglected input flows per module shall be a maximum of 5% of energy usage and mass.

For this study, all input and output flows have been considered except packaging of raw material, Raw materials are included as per the product composition provided by the manufacturer and the packaging of the final product. Energy and water consumptions have also been considered at 100% according to the data provided.

### 2.5. Data Sources

As a general rule, specific data derived from specific production processes or average data derived from specific production processes have been used as the first choice as a basis for calculating an EPD.

To model the life cycle of the product in question, the software SimaPro 9, developed by PRé, has been used in conjunction with the LCA database ecoinvent v3.6.

### 2.6. Data Quality

The requirements for data quality and LCA data are in accordance with the specifications of the PCR.

**Temporal Coverage** – producer specific data is averaged over 1 year of production and from within the last 5 years (2019). Generic data is taken from the ecoinvent 3.6 database, the entirety of which was updated in 2019. Inputs to and outputs from the system are accounted for over a period of 100 years from the year for which the data set is deemed relevant.

**Technological Coverage** – the technological coverage of the data reflects the physical reality of the declared product.

**Geographical Coverage** – whenever possible, country specific data reflecting the reality of the Gerflor supply chain has



been used. If country specific data is unavailable, European regional data is used in preference to global data sources.

## 2.7. Period under Review

Data have been reviewed for the production year 2019.

## 2.8. Allocation

The overall values for the factory's material and energy consumptions during a period of one year have been divided by the annual production of each product to supply a value per square meter of flooring produced. All factory data is measured in square meters, and it is assumed that the process consumptions are governed by area of flooring processed rather than mass.

## 2.9. Comparability (Optional)

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to /EN 15804/ and the building context, respectively the product-specific characteristics of performance, are taken into account.

## 3. Life Cycle Assessment Scenarios

Table 4. Transport to the building site (A4)

NAME	VALUE	UNIT
<b>Truck</b>		
Fuel type	Diesel, low sulfur	
Liters of fuel	26	l/100km
Vehicle type	16-32 metric ton EURO 5	
Transport distance	1771	km
Capacity utilization (including empty runs, mass based)	36	%
Gross density of products transported	1733	kg/m <sup>3</sup>
Weight of products transported (if gross density not reported)	-	kg
Volume of products transported (if gross density not reported)	-	m <sup>3</sup>
Capacity utilization volume factor (factor: =1 or <1 or ≥ 1 for compressed or nested packaging products)	< 1	-
<b>Boat</b>		
Fuel type	Heavy Fuel Oil	
Liters of fuel	0.047	l/100km
Vehicle type	Transoceanic Ship	
Transport distance	7167	km
Capacity utilization (including empty runs, mass based)	100	%
Gross density of products transported	937	kg/m <sup>3</sup>
Weight of products transported (if gross density not reported)	-	kg

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Volume of products transported (if gross density not reported)	-	m <sup>3</sup>
Capacity utilization volume factor (factor: =1 or <1 or ≥ 1 for compressed or nested packaging products)	< 1	-
<b>Rail</b>		
Energy type	Diesel and electricity	
Percentage diesel / electricity	56.3 / 43.7	%
Vehicle type	Freight train Europe without Switzerland	
Transport distance	1357	km
Capacity utilization (including empty runs, mass based)	100	%
Gross density of products transported	1350	kg/m <sup>3</sup>
Weight of products transported (if gross density not reported)	-	kg
Volume of products transported (if gross density not reported)	-	m <sup>3</sup>
Capacity utilization volume factor (factor: =1 or <1 or ≥ 1 for compressed or nested packaging products)	< 1	-

**Table 5. Installation into the building (A5)**

NAME	VALUE	UNIT
Ancillary materials	-	kg
Net freshwater consumption specified by water source and fate (amount evaporated, amount disposed to sewer)	-	m <sup>3</sup>
Other resources	-	kg
Electricity consumption	-	kWh
Other energy carriers	-	MJ
Product loss per functional unit	3.90E-01	kg
Waste materials at the construction site before waste processing, generated by product installation	3.75E-01	kg
Output materials resulting from on-site waste processing (specified by route; e.g. for recycling, energy recovery and/or disposal)	-	kg
Biogenic carbon contained in packaging	2.68E-01	kg CO <sub>2</sub>
Direct emissions to ambient air, soil and water	-	kg
VOC emissions	-	µg/m <sup>3</sup>

**Table 6. Reference Service Life**

NAME	VALUE	UNIT
RSL	25	years
Declared product properties (at the gate) and finishes, etc.	Declared product properties are described in Declaration of Performance (DOP), in accordance with EN 14041	-



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Design application parameters (if instructed by the manufacturer), including references to the appropriate practices and application codes)	Products in accordance with EN 14041 and technical prescription of the manufacturer	-
An assumed quality of work, when installed in accordance with the manufacturer's instructions	Assumed to be installed according to the manufacturer's instructions	-
Outdoor environment, (if relevant for outdoor applications), e.g. weathering, pollutants, UV and wind exposure, building orientation, shading, temperature	Assumed to be installed according to the manufacturer's instructions	-
Indoor environment, (if relevant for indoor applications), e.g. temperature, moisture, chemical exposure)	Use conditions in accordance with manufacturer prescriptions: see technical datasheet	-
Use conditions, e.g. frequency of use, mechanical exposure.	Maintenance scenario is defined in the table above	-
Maintenance, e.g. required frequency, type and quality of replacement components	Declared product properties are described in Declaration of Performance (DOP), in accordance with EN 14041	-

**Table 7. Maintenance (B2)**

NAME	VALUE	UNIT
Maintenance process information (cite source in report)	Dry vacuum cleaning: 3/week Wet cleaning: 2/week	-
Maintenance cycle	6.50E+03	Number/ RSL
Net freshwater consumption specified by water source and fate (amount evaporated, amount disposed to sewer)	5.20E+00	m <sup>3</sup> /year
Ancillary materials specified by type (e.g. cleaning agent)	5.20E-02	Kg/year
Other resources	-	kg
Energy input, specified by activity, type and amount	3.90E-01	kWh/year
Other energy carriers specified by type	-	kWh
Power output of equipment	-	kW
Waste materials from maintenance (specify materials)	-	kg
Direct emissions to ambient air, soil and water	-	kg
Further assumptions for scenario development (e.g. frequency and time period of use, number of occupants);	-	

**Table 8. Repair (B3)**

No data for given table

**Table 9. Replacement (B4)**

No data for given table



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**Table 10. Refurbishment (B5)**

No data for given table

**Table 11. Operational energy use (B6) and Operational water use (B7)**

No data for given table

**Table 12. End of life (C1-C4)**

NAME		VALUE	UNIT
Assumptions for scenario development (description of deconstruction, collection, recovery, disposal method and transportation)		Product are carried out by hand and sent to landfill. Waste transport is made by truck (16-32 metric ton Euro5). A 30km distance to the landfill treatment center has been considered	
Collection process (specified by type)	Collected separately	9.365E+00	kg
	Collected with mixed construction waste	-	kg
Recovery (specified by type)	Reuse	-	kg
	Recycling	-	kg
	Landfill	9.365E+00	kg
	Incineration	-	kg
	Incineration with energy recovery	-	kg
	Energy conversion efficiency rate	-	
Disposal (specified by type)	Product or material for final deposition	-	kg
Removals of biogenic carbon (excluding packaging)		-	kg CO <sub>2</sub>

**Table 13. Reuse, recovery and/or recycling potentials (D), relevant scenario information**

No data for given table



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## 4. Life Cycle Assessment Results

Table 14. Description of the system boundary modules

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

\*module has been considered but has no associated inputs/outputs, therefore does not appear in the results.

NA: Not Applicability

### 4.1. Life Cycle Impact Assessment Results

Table 15. North American Impact Assessment Results

TRACI v2.1	A1	A2	A3	A4	A5	B1	B2	C2	C4
GWP 100 [kg CO <sub>2</sub> eq]	1.49E+01	3.87E-01	1.08E+00	4.36E+00	1.32E+00	-	8.82E+00	4.82E-02	8.27E-01
ODP [kg CFC-11 eq]	5.28E-06	9.42E-08	7.20E-07	9.71E-07	2.88E-07	-	8.81E-07	1.12E-08	3.29E-08
AP [kg SO <sub>2</sub> eq]	6.41E-02	1.39E-03	3.84E-03	3.64E-02	4.36E-03	-	4.00E-02	1.77E-04	8.59E-04
EP [kg N eq]	2.56E-02	1.95E-04	1.67E-03	2.95E-03	1.33E-03	-	2.48E-02	2.44E-05	1.30E-03
SFP [kg O <sub>3</sub> eq]	7.09E-01	3.01E-02	5.46E-02	7.81E-01	6.59E-02	-	3.69E-01	3.74E-03	1.88E-02
ADP <sub>fossil</sub> [MJ, LHV]	4.18E+01	8.44E-01	3.78E+00	8.74E+00	2.26E+00	-	1.12E+01	1.01E-01	3.25E-01

GWP: Global Warming Potential / ODP: Ozone Depletion Potential / AP: Acidification Potential / EP: Eutrophication Potential / SFP: Smog Formation Potential / ADP: Abiotic Depletion Potential



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**Table 16. EU Impact Assessment Results**

CML v4.2	A1	A2	A3	A4	A5	B1	B2	C2	C4
GWP 100 [kg CO <sub>2</sub> eq]	1.49E+01	3.87E-01	1.06E+00	4.35E+00	1.29E+00	-	8.81E+00	4.82E-02	8.27E-01
ODP [kg CFC-11 eq]	5.11E-06	7.10E-08	6.50E-07	7.31E-07	2.67E-07	-	7.29E-07	8.42E-09	2.47E-08
AP [kg SO <sub>2</sub> eq]	6.36E-02	1.24E-03	3.71E-03	3.27E-02	4.16E-03	-	3.92E-02	1.58E-04	6.95E-04
EP [kg PO <sub>4</sub> <sup>-3</sup> eq]	1.46E-02	2.02E-04	9.66E-04	4.61E-03	8.73E-04	-	1.33E-02	2.52E-05	6.23E-04
POCP [kg ethene eq]	1.14E-02	2.02E-04	6.51E-04	3.50E-03	6.62E-04	-	4.64E-03	2.48E-05	2.37E-04
ADP <sub>element</sub> [kg Sb-eq]	2.19E-03	1.06E-05	9.96E-06	8.86E-05	9.25E-05	-	1.26E-04	1.28E-06	1.08E-06
ADP <sub>fossil</sub> [MJ. LHV]	3.00E+02	5.78E+00	2.54E+01	6.15E+01	1.61E+01	-	1.15E+02	7.09E-01	2.33E+00

GWP: Global Warming Potential / ODP: Ozone Depletion Potential / AP: Acidification Potential / EP: Eutrophication Potential / POCP: Photochemical Ozone Creation Potential / ADP: Abiotic resource Depletion Potential

## 4.2. Life Cycle Inventory Results

**Table 17. Resource Use**

PARAMETER	A1	A2	A3	A4	A5	B1	B2	C2	C4
RPR <sub>E</sub> [MJ. LHV]	4.79E+01	8.33E-02	6.95E+00	8.22E-01	2.23E+00	-	5.53E+01	8.02E-03	4.75E-02
RPR <sub>M</sub> [MJ. LHV]	0.00E+00	0.00E+00	6.25E+00	0.00E+00	2.50E-01	-	-	-	-
RPR <sub>T</sub> [MJ. LHV]	4.79E+01	8.33E-02	1.32E+01	8.22E-01	2.48E+00	-	5.53E+01	8.02E-03	4.75E-02
NRPR <sub>E</sub> [MJ. LHV]	2.38E+02	5.90E+00	9.05E+01	6.24E+01	1.63E+01	-	1.48E+02	7.19E-01	2.40E+00
NRPR <sub>M</sub> [MJ. LHV]	1.57E+02	0.00E+00	2.07E-01	0.00E+00	6.27E+00	-	3.46E+01	-	-
NRPR <sub>T</sub> [MJ. LHV]	3.95E+02	5.90E+00	9.07E+01	6.24E+01	2.25E+01	-	1.82E+02	7.19E-01	2.40E+00
SM [kg]	-	-	-	-	-	-	-	-	-
RSF [MJ. LHV]	-	-	-	-	-	-	-	-	-
NRSF [MJ. LHV]	-	-	-	-	-	-	-	-	-
RE [MJ. LHV]	-	-	-	-	-	-	-	-	-
FW [m <sup>3</sup> ]	4.47E-01	6.09E-04	2.38E-02	6.39E-03	1.93E-02	-	3.84E-01	7.03E-05	2.46E-03

RPR<sub>E</sub>: Use of renewable primary energy excluding renewable primary energy resources used as raw materials / RPR<sub>M</sub>: Use of renewable primary energy resources used as raw materials / RPR<sub>T</sub>: Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) / NRPR<sub>E</sub>: Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials / NRPR<sub>M</sub>: Use of non-renewable primary energy resources used as raw materials / NRPR<sub>T</sub>: Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) / SM: Use of secondary materials / RSF: Use of renewable secondary fuels / NRSF: Use of non-renewable secondary fuels / RE: Recovered energy / FW: Net use of fresh water



# ENVIRONMENTAL PRODUCT DECLARATION



**GTI Max Connect**  
Interlocking looselay vinyl tile

According to ISO 14025,  
EN 15804 and ISO 21930:2017

**Table 18. Output Flows and Waste Categories**

PARAMETER	A1	A2	A3	A4	A5	B1	B2	C2	C4
HWD [kg]	5.87E-01	3.80E-03	3.71E-02	6.70E-02	3.01E-02	-	3.06E-01	6.38E-04	3.15E-03
NHWD [kg]	4.48E+00	3.10E-01	6.07E-01	2.64E+00	8.95E-01	-	4.40E+00	3.83E-02	9.41E+00
HLRW [kg] or [m <sup>3</sup> ]	4.70E-04	3.98E-05	7.35E-04	4.06E-04	6.83E-05	-	4.06E-04	4.68E-06	1.39E-05
ILLRW [kg] or [m <sup>3</sup> ]	9.96E-05	4.28E-07	2.07E-04	3.72E-06	1.25E-05	-	1.03E-04	3.86E-08	2.51E-07
CRU [kg]	-	-	-	-	-	-	-	-	-
MFR [kg]	-	-	4.70E-02	-	6.95E-02	-	-	-	-
MER [kg]	-	-	-	-	-	-	-	-	-
EE [MJ. LHV]	-	-	-	-	-	-	-	-	-

HWD: Disposed-of-hazardous waste / NHWD: Disposed-of non-hazardous waste / HLRW: High Level Radioactive Waste / ILLRW: Intermediate and Low-Level Radioactive Waste / CRU: Components for reuse / MFR: Material for recycling / MER: Materials for energy recovery / EE: Exported energy

**Table 19. Carbon Emissions and Removals**

PARAMETER	A1	A2	A3	A4	A5	B1	C2	C4
BCRP [kg CO <sub>2</sub> ]	-	-	-	-	-	-	-	-
BCEP [kg CO <sub>2</sub> ]	-	-	-	-	-	-	-	-
BCRK [kg CO <sub>2</sub> ]	-	-	2.68E-01	-	-	-	-	-
BCEK [kg CO <sub>2</sub> ]	-	-	-	-	2.68E-01	-	-	-
BCEW [kg CO <sub>2</sub> ]	-	-	-	-	-	-	-	-
CCE [kg CO <sub>2</sub> ]	-	-	-	-	-	-	-	-
CCR [kg CO <sub>2</sub> ]	-	-	-	-	-	-	-	-
CWNR [kg CO <sub>2</sub> ]	-	-	-	-	-	-	-	-

BCRP: Biogenic Carbon Removal from Product / BCEP: Biogenic Carbon Emission from Product / BCRK: Biogenic Carbon Removal from Packaging / BCEK: Biogenic Carbon Emission from Packaging / BCEW: Biogenic Carbon Emission from Combustion of Waste from Renewable Sources Used in Production Processes / CCE: Calcination Carbon Emissions / CCR: Carbonation Carbon Removals / CWNR: Carbon Emissions from Combustion of Waste from Non-Renewable Sources used in Production Processes



## 5. LCA Interpretation

Figure 4: Graph depicting the impact indicators as calculated by the TRACI method

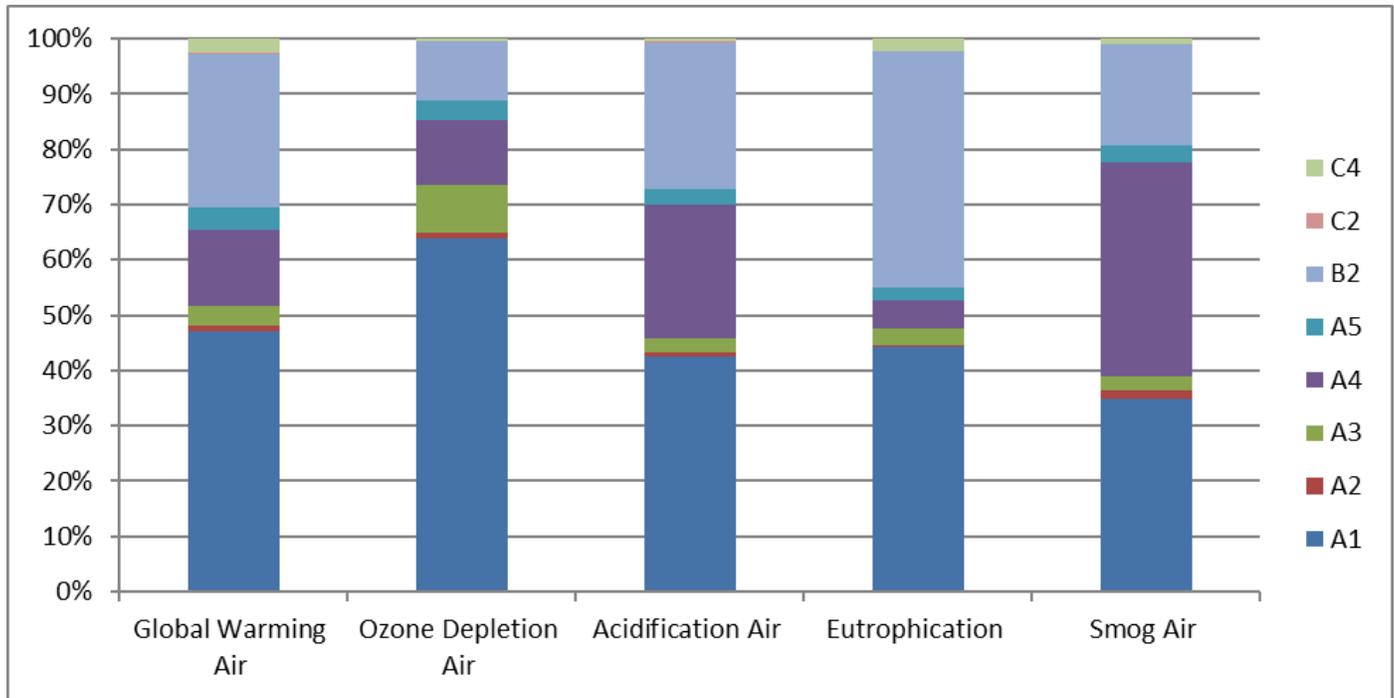
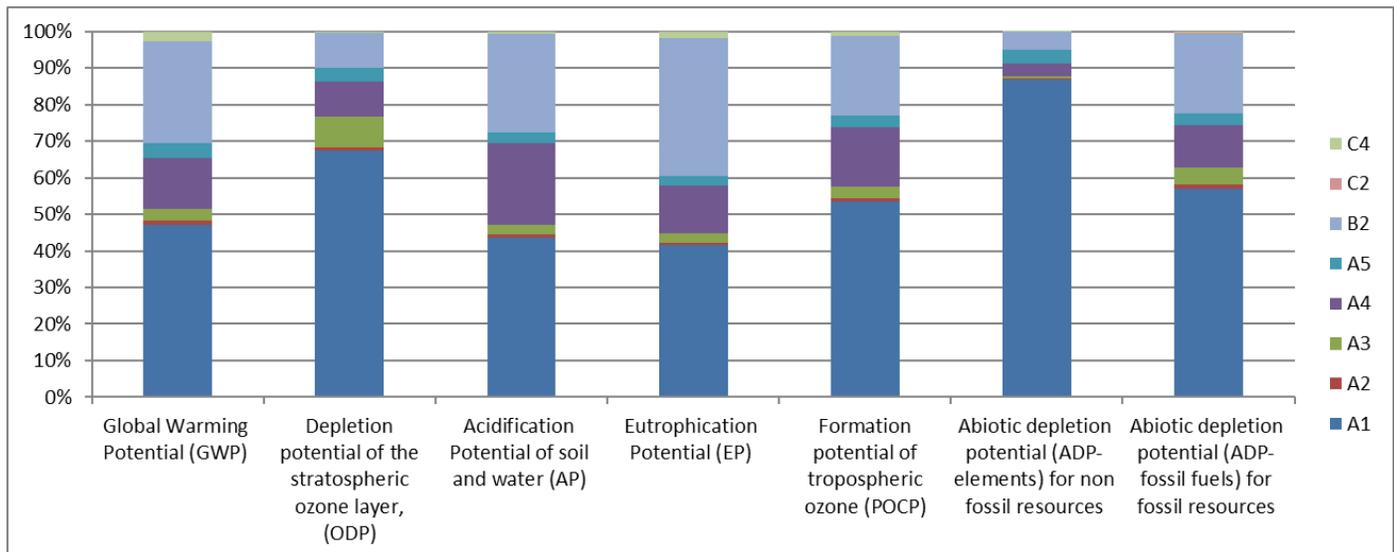


Figure 5: Graph depicting selection of impact indicator results calculated according to EN 15804





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The primary contributor to the environmental impacts of the product is A1 – Extraction and transformation of the raw materials. Then comes B2 – Maintenance stage because of the scenario of both long reference service life (RSL) of 25 years and the assumption of a weekly cleaning by using a machine and detergent. Stage A4 – Distribution stage has the third greatest impact on average across the indicators, primarily due to the worldwide distribution scenario.

## 6. Additional Environmental Information

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### 6.1. Environment and Health During Manufacturing

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Gerflor's factory conforms to the ISO 14001 Environmental Management System and the ISO 50001 Energy Management System.

### 6.2. Environment and Health During Installation

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The manufacturer's guidelines should be adhered to during the installation of this product.

### 6.3. Extraordinary Effects

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#### **Fire**

Fire behaviour have been tested according to EN 13501-1. Product is classified Bfl-S1. There's no test available for possible environmental impacts during fire. Class 1 when tested in accordance with ASTM E 648. Standard Test Method for Critical Radiant Flux Flaming & Non-Flaming when tested in accordance with ASTM E 662. Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials

#### **Water**

There's no test available for possible impacts following unforeseeable influence of water.

#### **Mechanical Destruction**

Mechanical damage does not chemically alter the product.

### 6.4. Delayed Emissions

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No delayed emissions are taken into account.



# ENVIRONMENTAL PRODUCT DECLARATION



GTI Max Connect  
Interlocking loose-lay vinyl tile



According to ISO 14025,  
EN 15804 and ISO 21930:2017

## 6.5. Environmental Activities and Certifications



### FloorScore®

Indoor Air Quality Certified to SCS-EC10.3-2014 v4.0

Registration # SCS-FS-02146



M1 Standard  
Certificate n°422.1





**GTI Max Connect**  
Interlocking looselay vinyl tile



According to ISO 14025,  
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## 6.6. Further Information

Additional information can be found in <https://www.gerflor.com/>

## 7. Supporting Documentation

All documentation necessary to confirm the data provided in this EPD has been submitted to the critical reviewer.

## 8. References

### ISO 14025

ISO 14025:2006 : Environmental labels and declarations — Type III environmental declarations — Principles and procedures

### ISO 21930

ISO 21930 :2017 : Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services

### EN 15804

EN 15804:2012-04+A1 2013: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

### UL Environment

UL Environment General Program Instructions July 2018. version 2.4

### UL Standard 10010. PCR Part A

PCR -Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 3.2. UL Environment. <https://industries.ul.com/environment>

### UL 10010-7. PCR Part B

PCR - Part B: Flooring EPD Requirements. Second Edition. Dated September 28. 2018. UL Environment. <https://www.ul.com/>

### Ecoinvent V3.6

ecoinvent Life Cycle Inventory database Version 3.6 <http://www.ecoinvent.org>



# ENVIRONMENTAL PRODUCT DECLARATION



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According to ISO 14025,  
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