

## ENVIRONMENTAL PRODUCT DECLARATION

# MIPOLAM

GERFLOR



Mipolam – Homogeneous Vinyl flooring system with Evercare® surface treatment

**Gerflor.**  
the flooring group

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.

All our products are 100% recyclable and 100% FloorScore certified, meaning that our products have been independently third party certified to comply with strict volatile organic compounds (VOC) emissions criteria.”. All Gerflor new products are 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 momentum, Gerflor has decided to take a leadership position by publishing an EPD for each of its product ranges.



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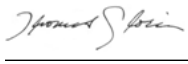
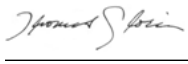


MIPOLAM  
Homogeneous commercial flooring

According to ISO 14025

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. **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, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. **Comparability:** EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.



PROGRAM OPERATOR	UL Environment	
DECLARATION HOLDER	Gerflor	
DECLARATION NUMBER	4786877674.104.1	
DECLARED PRODUCT	Mipolam	
REFERENCE PCR	IBU PCRs Part A, Part B for flooring with UL addendums.	
DATE OF ISSUE	December 21, 2016	
PERIOD OF VALIDITY	5 Years	
CONTENTS OF THE DECLARATION	Product definition and information about building physics Information about basic material and the material's origin Description of the product's manufacture Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications	
The PCR review was conducted by:	Institut Bauen und Umwelt e.V	
	Accepted by the advisory board	
	info@bau-umwelt.com	
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	 Wade Stout, UL Environment	
	 Thomas P Gloria, Industrial Ecology Consultants	
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	 Thomas P Gloria, Industrial Ecology Consultants	

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## Product definition

### Product classification and description

Product Designation: "Mipolam"

This environmental product declaration covers the "Mipolam" collection of resilient flooring produced by Gerflor. The product is homogeneous Vinyl flooring system with Evercare® surface treatment.

### Range of application

Mipolam homogeneous Vinyl flooring 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, such as : healthcare, education, housing, ...

### Product standard

The product has technical specifications compliant with the standard EN 14041 – Resilient, textile and stratified floor coverings: Essential characteristics.

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

ASTM F 1913 – Standard Specification for Vinyl Sheet Floor Covering Without Backing  
ISO 10581 – Resilient floor coverings – Homogeneous polyvinyl chloride floor covering

Specification Fire Testing:

Class 1 when tested in accordance with ASTM E 648/NFPA 253, Standard Test Method for Critical Radiant Flux

The product also possesses the following characteristics:

- EN 13501-1 Fire Behavior  $B_{fl} - s1$

### Accreditation

- Floorscore
- BRE Certification
- NF UPEC by CSTB
- M1 - Emission Classification of Building Materials

### Delivery status

Characteristics	Nominal Value	Unit	Standard
Product Thickness	2	mm	-
Product Weight	2,74	kg/m <sup>2</sup>	-
Abrasion Resistance	≤ 2.0	mm <sup>3</sup>	ISO 4649 (Met. A-5N)
Tiles Size	0.608 x 0.608	m	-
Rolls Size	40	m <sup>2</sup>	-
Type of Manufacture	Pressed and calendered	-	-
Density	1370	kg/m <sup>3</sup>	-

Table 1: Product Characteristics

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## Material Content

### Product composition

Component	Mass %
Vinyl	44,6%
Plasticizer	17,4%
Filler	33,6%
Additives	1,2%
Pigments	3,2%

Table 2: content description

## Product Manufacturing

### Production process

The production of the homogeneous Vinyl flooring is divided into the following stages

- Grinding: Vinyl compound is grinded to obtain granulate that will be heated to form Vinyl rolls
- Calendering: The rolls are then calendered (pressing for Mipolam Elegance) to get the desired shape.
- Surface treatment: The Evercare® surface treatment is then applied to get the best durability possible.
- Shaping: rolls and tiles are cut at the desired dimensions.
- Packaging: The final product is packed into cardboard boxes and stacked onto pallets ready for shipping.

### Production waste

All production waste are stocked apart in order to be reused for further product fabrication. They are all internally reused.

Concerning other wastes, they are recycled externally whenever a process exists.

### Health, safety and environmental aspects during production

All production sites comply with the ISO 14001 Environmental Management System.

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## Delivery and Installation

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### Delivery

It is considered a production in France and Germany for the Mipolam product. It is then sent to the US market. Distances taken in account are described here bellow.

- Transport distance 16-32T truck (factory to distributor): 2 124 km
- Transport distance train: 791 km
- Transport distance transoceanic freight: 6 350 km
- Transport distance 16-32T truck (distributor to client): 50 km.

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### Installation

The product is installed by hand using acrylic. Approximately 325g/m<sup>2</sup> of this water-based low emission adhesive is used to fix the flooring in place.

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### Waste

During the installation approximately 7% of the material is lost as off-cuts – this waste is generally sent to landfill but a recycling process can be set off by Gerflor. Currently, as a minority of customer applies this recycling process, it has not been taken in account.

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### Packaging

All packaging materials are recyclable. Cardboard, wooden pallet and paper are then considered recycled on the installation site.

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## Use Stage

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### Reference Service Life (RSL)

For this product, the stated RSL is 30 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 ISO10 874 in accordance with the product's classification.

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### Extraordinary Effects

**Water** - The product is impermeable to water.

**Mechanical damage** - Mechanical damage does not chemically alter the product.

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### Cleaning and maintenance

Daily cleaning of the installed floor involves a mechanical cleaning with detergent which has been included in this study.

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### Prevention of structural damage

To avoid excessive wear, usage should be restricted to the stated areas of application as outlined by the norm ISO 10 874.

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### Health aspects during usage

Mipolam is compliant with Floorscore and LEEDv4 Platinum specifications.

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## End of Life

Although it is technically possible to recycle 100% of homogeneous Vinyl floorings to create other products, this is not commonly applied by the customers, and as such the majority is sent to landfill.

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### Scenarios

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

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## Life Cycle Assessment (LCA)

A full Life Cycle Assessment has been performed according to ISO 14040, ISO 14044 and in compliance with EN15804.

This LCA comprises the following steps:

- Production Stage A1-A3 (raw materials, transport, manufacturing)
- Construction Stage A4-A5 (delivery of final product, installation in the building)
- Use Stage B1-B7 (use, maintenance, repair, replacement, refurbishment, energy, water)
- End of Life C1-C4 (deconstruction, transport, waste processing, disposal)

### Functional Unit description

The functional unit is one square meter of installed product. The reference service life considered is 60 years.

	Value	Unit
Functional Unit	1	m <sup>2</sup>
Conversion factor to 1kg	0.365	-

Table 3: Functional Unit

### 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 at 100%, including raw materials as per the product composition provided by the manufacturer and packaging of raw materials as well as the final product. Energy and water consumptions have also been considered at 100% according to the data provided.

### LCA data

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 8.2, developed by PRé, has been used in conjunction with the LCA database ecoinvent v3.2.

### 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 (2013-2014). Generic data is taken from the ecoinvent 3.2 database, the entirety of which was updated in 2015 with the introduction of the Version 3. 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

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

## System Boundaries

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 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.

	Production Stage			Construction Process Stage		Use Stage							End-of-Life Stage				Next product System
	Raw material supply (extraction, processing, recycled material)	Transport to manufacturer	Manufacturing	Transport to building site	Installation into building	Use / application	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / demolition	Transport to EoL	Waste processing for reuse, recovery or recycling	Disposal	Reuse, recovery or recycling potential
<b>Modules</b>	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
<b>Accounted for:</b>	X	X	X	X	X	X	X	MND	MND	MND	X*	X*	X*	X	MND	X	MND

Table 4: Scope of the study

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

## 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.



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## Comparability

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.

## LCA: Scenarios and additional technical information

### Transport to the construction site (A4)

Name	Value	Unit
Liters of fuel (truck)	45	l/100km
Transport distance (truck)	2 124	km
Capacity utilization (including empty runs)	36	%
Transport distance (rail)	791	km
Transport distance (boat)	6 350	km

### Installation in the building (A5)

Name	Value	Unit
Adhesive	0.325	kg
Water consumption	0	m <sup>3</sup>
Electricity consumption	0	kWh
Other energy carriers	0	MJ
Material Loss	7	%
Output substances following waste treatment on site	0	kg
Dust in the air	0	kg

### Use (B1)

Name	Value	Unit
VOC emissions	< 10	µg/m <sup>2</sup>

### Maintenance (B2)

Name	Value	Unit
Maintenance cycle	365	Number/year
Water consumption	0.39	m <sup>3</sup>
Detergent	0,50	m <sup>3</sup>
Electricity consumption	13.8	kWh

### Reference Service Life

Name	Value	Unit
Reference Service Life	30	years

### End of Life (C1-4)

Name	Value	Unit
Collected separately	0	kg
Collected as mixed construction waste	0	kg
Reuse	0	kg
Recycling	0	kg
Energy recovery	0	kg
Landfill	2,71	kg

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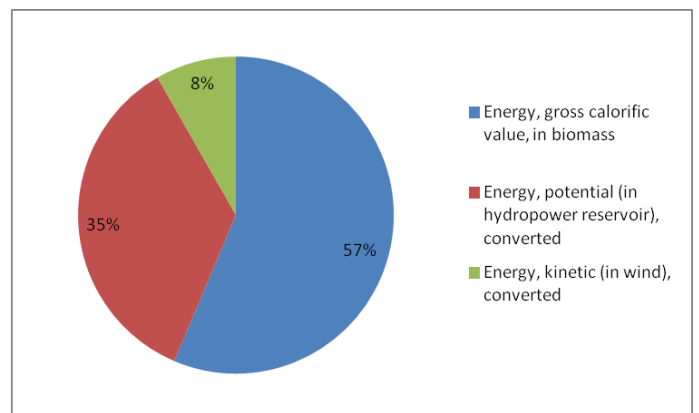
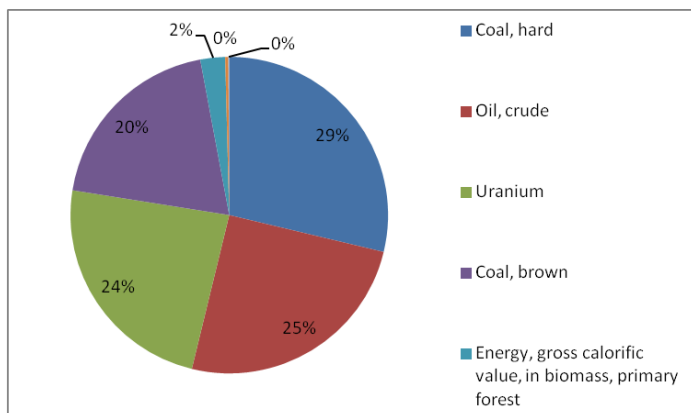
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## Results

### Life Cycle Inventory (LCI) analysis

Indicator	Units	A1	A2	A3	A4	A5	B1	B2	C2	C4
<b>Non renewable primary energy by resource</b>										
Total of all compartments	MJ, net CV	1.12E+02	2.47E+00	7.54E+01	7.27E+00	3.02E+01	0.00E+00	1.59E+02	2.10E-01	7.46E-01
Gas, natural/m3	MJ, net CV	3.73E+01	1.43E-01	2.04E+01	4.66E-01	8.31E+00	0.00E+00	4.45E+01	1.22E-02	7.13E-02
Coal, hard	MJ, net CV	1.58E+01	1.87E-01	1.27E+01	7.29E-01	6.37E+00	0.00E+00	4.12E+01	1.59E-02	8.82E-02
Oil, crude	MJ, net CV	3.02E+01	2.07E+00	9.00E+00	5.57E+00	8.26E+00	0.00E+00	1.13E+01	1.75E-01	5.42E-01
Uranium	MJ, net CV	1.77E+01	4.24E-02	2.17E+01	3.00E-01	4.43E+00	0.00E+00	1.95E+01	3.59E-03	2.57E-02
Coal, brown	MJ, net CV	4.02E+00	3.12E-02	9.80E+00	1.90E-01	2.15E+00	0.00E+00	3.63E+01	2.64E-03	1.83E-02
Energy, gross calorific value, in biomass, primary forest	MJ, net CV	9.47E-01	4.51E-05	2.34E-01	1.30E-04	8.29E-02	0.00E+00	5.48E+00	3.82E-06	1.31E-05
Gas, mine, off-gas, process, coal mining/m3	MJ, net CV	1.47E-01	2.41E-03	2.13E-01	9.84E-03	8.43E-02	0.00E+00	4.12E-01	2.04E-04	1.11E-03
Peat	MJ, net CV	9.12E-02	5.00E-04	6.29E-02	3.31E-03	3.78E-02	0.00E+00	4.12E-02	4.24E-05	2.33E-04
<b>Renewable primary energy by resource</b>										
Total of all compartments	MJ, net CV	8.41E+00	3.17E-02	7.73E+00	1.42E-01	2.39E+00	0.00E+00	3.82E+01	2.69E-03	2.27E-02
Energy, gross calorific value, in biomass	MJ, net CV	5.40E+00	1.51E-02	5.01E+00	5.48E-02	1.50E+00	0.00E+00	1.95E+01	1.28E-03	1.26E-02
Energy, potential (in hydropower reservoir), converted	MJ, net CV	2.00E+00	1.42E-02	1.62E+00	6.98E-02	6.42E-01	0.00E+00	1.54E+01	1.20E-03	8.70E-03
Energy, kinetic (in wind), converted	MJ, net CV	2.93E-01	2.36E-03	9.00E-01	1.69E-02	1.80E-01	0.00E+00	3.24E+00	2.00E-04	1.27E-03

Table 5: Energy usage by source



Figures 1 & 2: Graphs showing the sources of non-renewable (Left) and renewable (Right) energy

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Indicator	Units	A1	A2	A3	A4	A5	B1	B2	C2	C4
<b>Input flow indicators</b>										
Use of renewable primary energy excluding the renewable primary energy resources used as raw materials	MJ, calorific value ([Hi] lower calorific value)	2.86E+00	3.17E-02	3.93E+00	1.42E-01	1.73E+00	-	3.82E+01	2.69E-03	2.27E-02
Use of renewable primary energy resources used as raw materials	MJ, calorific value ([Hi] lower calorific value)	5.55E+00	-	3.80E+00	-	6.54E-01	-	-	-	-
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ, calorific value ([Hi] lower calorific value)	8.41E+00	3.17E-02	7.73E+00	1.42E-01	2.39E+00	-	3.82E+01	2.69E-03	2.27E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ, calorific value ([Hi] lower calorific value)	6.73E+01	2.47E+00	6.46E+01	7.27E+00	1.61E+01	-	1.59E+02	2.10E-01	7.46E-01
Use of non-renewable primary energy resources used as raw materials	MJ, calorific value ([Hi] lower calorific value)	4.46E+01	-	1.09E+01	-	1.41E+01	-	-	-	-
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ, calorific value ([Hi] lower calorific value)	1.12E+02	2.47E+00	7.54E+01	7.27E+00	3.02E+01	-	1.59E+02	2.10E-01	7.46E-01
Use of secondary materials	kg	-	-	-	-	-	-	-	-	-
Use of renewable secondary fuels	MJ, calorific value ([Hi] lower calorific value)	-	-	-	-	-	-	-	-	-
Use of non-renewable secondary fuels	MJ, calorific value ([Hi])	-	-	-	-	-	-	-	-	-
Net use of fresh water resources	m <sup>3</sup>	3.54E-01	5.24E-04	1.03E-01	1.76E-03	7.10E-02	-	6.62E-01	4.45E-05	7.87E-04
<b>Output flow indicators</b>										
Water Pollution	m <sup>3</sup>	3.37E+00	5.90E-02	1.41E+00	1.74E-01	1.13E+00	-	7.13E+00	5.01E-03	3.62E-02
Air Pollution	m <sup>3</sup>	3.58E+02	2.10E+01	1.98E+02	6.27E+01	1.74E+02	9.09E-05	1.13E+03	1.78E+00	4.90E+00
Hazardous waste disposed	kg	1.49E-01	1.19E-03	7.95E-02	3.91E-03	1.28E-01	-	2.24E-01	1.01E-04	5.51E-04
Non-hazardous waste disposed	kg	8.54E-01	1.27E-01	9.77E-01	3.08E-01	9.05E-01	-	3.12E+00	1.08E-02	2.72E+00
Radioactive waste disposed	kg	1.00E-04	1.67E-05	2.87E-04	4.77E-05	7.82E-05	-	3.50E-04	1.41E-06	4.31E-06
Components for re-use	kg	-	-	-	-	-	-	-	-	-
Materials for recycling	kg	-	-	2.47E-02	-	1.67E-01	-	-	-	-
Materials for energy recovery	kg	-	-	-	-	-	-	-	-	-
Exported energy	MJ, heating value ([Hi] lower heating value) per energy carrier	-	-	-	-	-	-	-	-	-

Table 6: Input / Output Flow Indicators

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## Life Cycle Impact Assessment (LCIA)

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. Module B2 – Maintenance has been evaluated for the entire life cycle of the product. The following table shows the impact assessment results for the product:

Indicator	Units	A1	A2	A3	A4	A5	B1	B2	C2	C4
<b>TRACI Indicators</b>										
Global Warming Air	kg CO2 equiv.	4.19E+00	1.59E-01	2.65E+00	4.65E-01	1.39E+00	-	9.67E+00	1.35E-02	2.40E-01
Ozone Depletion Air	kg CFC 11 equiv.	2.12E-07	3.90E-08	3.50E-07	1.08E-07	1.56E-07	-	8.83E-07	3.31E-09	9.87E-09
Acidification Air	kg SO2 equiv.	1.50E-02	7.29E-04	8.22E-03	3.40E-03	6.96E-03	-	3.18E-02	6.18E-05	2.58E-04
Eutrophication	kg N equiv.	3.01E-03	9.79E-05	2.79E-03	3.22E-04	1.16E-03	-	1.33E-02	8.30E-06	3.83E-04
Smog Air	kg O3 equiv.	1.94E-01	1.72E-02	9.65E-02	6.67E-02	7.46E-02	3.60E-08	3.26E-01	1.46E-03	5.36E-03
<b>EN 15804 Indicators</b>										
Global Warming Potential (GWP)	kg CO2 equiv.	4.19E+00	1.59E-01	2.65E+00	4.65E-01	1.39E+00	-	9.67E+00	1.35E-02	2.40E-01
Depletion potential of the stratospheric ozone layer, (ODP)	kg CFC 11 equiv.	1.79E-07	2.93E-08	3.07E-07	8.13E-08	1.29E-07	-	6.96E-07	2.49E-09	7.43E-09
Acidification Potential of soil and water (AP)	kg SO2 equiv.	1.50E-02	6.33E-04	8.26E-03	3.14E-03	7.15E-03	-	3.20E-02	5.37E-05	2.15E-04
Eutrophication Potential (EP)	kg (PO4) equiv.	2.19E-03	1.10E-04	1.65E-03	4.15E-04	8.18E-04	-	7.51E-03	9.34E-06	1.83E-04
Formation potential of tropospheric ozone (POCP)	kg ethene equiv.	3.74E-03	7.07E-05	1.36E-03	2.51E-04	9.41E-04	3.77E-09	3.16E-03	5.99E-06	6.41E-05
Abiotic depletion potential (ADP-elements) for non fossil resources	kg Sb equiv.	6.25E-06	4.80E-07	9.55E-06	1.15E-06	8.82E-06	-	2.00E-05	4.07E-08	4.18E-08
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ, calorific value ([Hi] lower calorific value)	8.76E+01	2.43E+00	5.21E+01	6.97E+00	2.52E+01	-	1.34E+02	2.06E-01	7.21E-01

**Table 7: Environmental Impact Indicators**

All EN 15804 indicators have been calculated using the method CML 4.1 (October 2012). TRACI impacts have been calculated using the method TRACI 2.1 v1.03 (2015).

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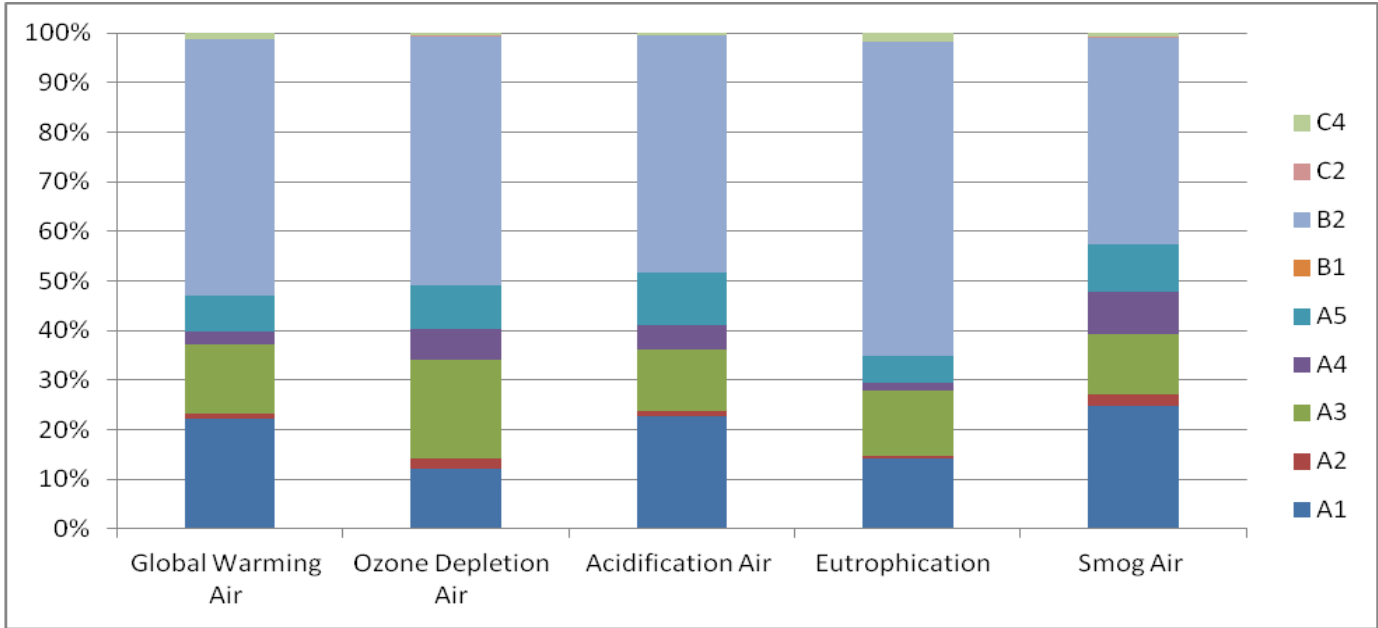


Figure 3: Graph depicting the impact indicators as calculated by the TRACI method

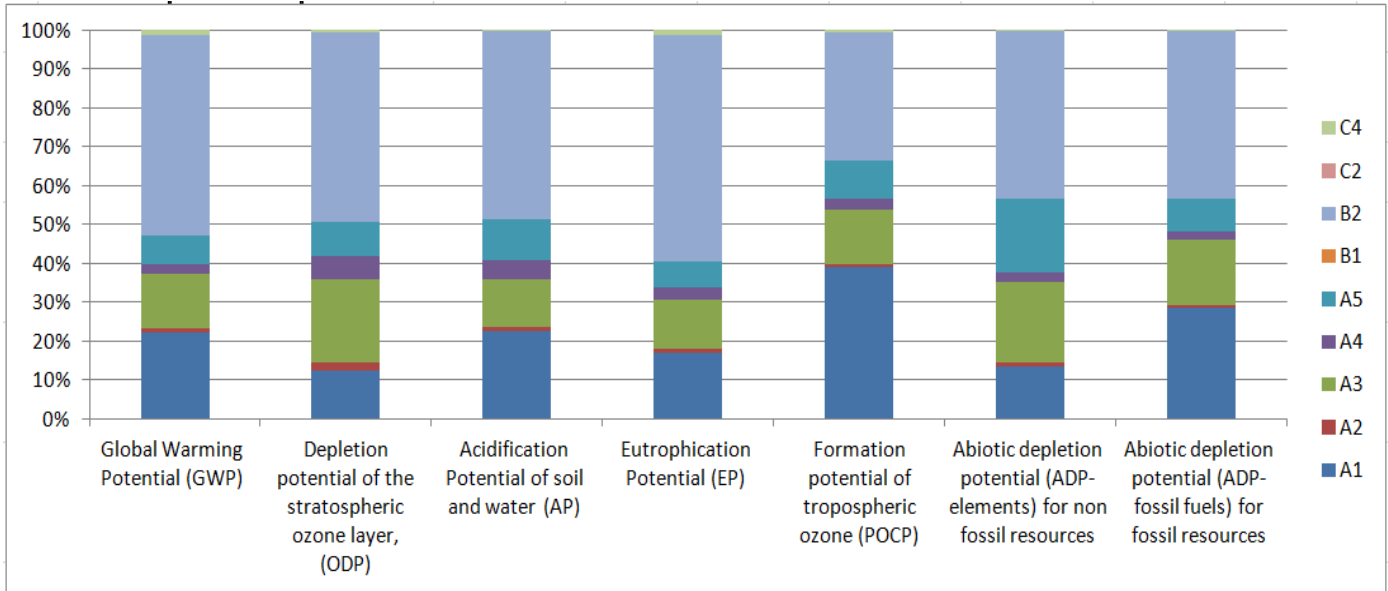


Figure 4: Graph depicting impact indicator results calculated according to EN 15804

# ENVIRONMENTAL PRODUCT DECLARATION



MIPOLAM  
Homogeneous commercial flooring

According to ISO 14025

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## Interpretation

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The primary contributor to the environmental impacts of the product is the Stage B2 – Maintenance stage. This is because of the scenario of both long reference service life (RSL) of 30 years and the assumption of a daily cleaning by using a machine and detergent. Then comes A1 – Extraction and transformation of the raw materials. Stage A3 – Manufacturing has the third greatest impact on average across the indicators, primarily due to the electricity usage during the production process. Very close comes the Stage A5 – Installation also has high impacts, due to the quantity of product wasted during an average installation.

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## Requisite Evidence



### FloorScore®

Indoor Air Quality Certified to SCS-EC10.3-2014 v3.0  
Conforms to the CDPH/EHLB Standard Method v1.1-2010  
(effective January 1, 2012) for the school classroom and private  
office parameters when modeled as Flooring.

Measured Concentration of Total Volatile Organic Compounds  
(TVOC): Less than/equal to 0.5 mg/m<sup>3</sup> (in compliance with  
CDPH/EHLB Standard Method v1.1-2010)

Registration # SCS-FS-02145 and # SCS-FS-02146

## References

### Institut Bauen und Umwelt

Institut Bauen und Umwelt e.V., Berlin (pub.):  
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(EPDs);

### ISO 14025

DIN EN ISO 14025:2011-10: Environmental labels and  
declarations — Type III environmental declarations —  
Principles and procedures

### EN 15804

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

### IBU 2013, PCR Part A

PCR -Part A: Calculation rules for the Life Cycle  
Assessment and Requirements on the Background  
Report, Version 1.2, Institut Bauen und Umwelt e.V.,  
[www.bau-umwelt.com](http://www.bau-umwelt.com)

### IBU 2014, PCR Part B

PCR - Part B: Requirements for the EPD of floor  
coverings, Version 1.6, Institut Bauen und Umwelt e.V.,  
[www.bau-umwelt.com](http://www.bau-umwelt.com)

### UL Environment adapted PCR for Part A

[www.ul.com](http://www.ul.com)

### UL Environment addendum to IBU PCR Part B for floor coverings

[www.ul.com](http://www.ul.com)

### ecoinvent V3

ecoinvent Life Cycle Inventory database Version 3  
<http://www.ecoinvent.org>

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