**Declaration Owner**

Milliken
920 Milliken Road
Spartanburg, SC 29303
United States
+1-800-241-4826 | https://floors.milliken.com.

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

**Product**
2.5mm PVC Free: En Plein Air

(UNSPSC Class Code 30161700/CSI Code 09 65 00)

**Functional Unit**
The functional unit is one square meter of flooring over a 75-year period

**EPD Number and Period of Validity**
SCS-EPD-10665
EPD Valid August 7, 2026 through August 6, 2031

**Product Category Rule**
PCR for Building-Related Products and Services - Part A: LCA Calculation Rules and Report Requirements, UL 10010, UL v.4.0, March 2022.
PCR Guidance for Building-Related Products and Services - Flooring EPD Requirements, UL 10010-7, v.2.0, valid until 30.09.2026.

**Program Operator**
SCS Global Services
2000 Powell Street, Ste. 600, Emeryville, CA 94608
+1.510.452.8000 | www.SCSglobalServices.com

| | |
|---|---|
| Declaration Owner: | Milliken |
| Address: | 920 Milliken Road, Spartanburg SC 29303 |
| Declaration Number: | SCS-EPD-10665 |
| Declaration Validity Period: | EPD Valid August 7, 2026 through August 6, 2031 |
| Program Operator: | SCS Global Services |
| Declaration URL Link: | https://www.scsglobalservices.com/certified-green-products-guide |
| LCA Practitioner: | Gerard Mansell, Ph.D., SCS Consulting Services |
| LCA Software and LCI database: | OpenLCA v2.5 software and the Ecoinvent v3.12 database |
| Product RSL: | 22 years |
| Markets of Applicability: | North America |
| EPD Type: | Product-Specific |
| EPD Scope: | Cradle-to-Grave |
| LCIA Method and Version: | TRACI 2.2, IPCC 2021, CMIL-IA v4.8 2016 |
| Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071 | ☐ internal ☒ external |
| LCA Reviewer: | Lindita Bushi<br>Lindita Bushi, Ph.D., Athena Sustainable Materials Institute |
| Part A Product Category Rule: | PCR for Building-Related Products and Services - Part A: LCA Calculation Rules and Report Requirements, UL 10010, UL v.4.0, March 2022 |
| Part A PCR Review conducted by: | Lindita Bushi, PhD (Chair); Hugues Imbeault-Tétreault, ing., M.Sc.A.; Jack Geibig |
| Part B Product Category Rule: | PCR Guidance for Building-Related Products and Services - Flooring EPD Requirements, UL 10010-7, v.2.0, valid until 30.09.2026 |
| Part B PCR Review conducted by: | Jack Geibig (chair), Ecoform; Thomas Gloria, Industrial Ecology Consultants; Thaddeus Owen |
| Independent verification of the declaration and data, according to ISO 14025 and the PCR | ☐ internal ☒ external |
| EPD Verifier: | Lindita Bushi<br>Lindita Bushi, Ph.D., Athena Sustainable Materials Institute |
| Declaration Contents: | 1. Milliken ..... 2<br>2. Product ..... 2<br>3. LCA: Calculation Rules ..... 5<br>4. LCA: Scenarios and Additional Technical Information ..... 12<br>5. LCA: Results ..... 14<br>6. LCA: Interpretation ..... 19<br>7. References ..... 20 |

**Disclaimers:** *This EPD conforms to ISO 14025, 14040, 14044, and 21930.*

**Scope of Results Reported:** *The PCR requirements limit the scope of the LCA metrics such that the results exclude environmental and social performance benchmarks and thresholds, and exclude impacts from the depletion of natural resources, land use ecological impacts, ocean impacts related to greenhouse gas emissions, risks from hazardous wastes and impacts linked to hazardous chemical emissions.*

**Accuracy of Results:** *Due to PCR constraints, this EPD provides estimations of potential impacts that are inherently limited in terms of accuracy.*

**Comparability:** *The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.*

*In accordance with ISO 21930:2017, EPDs are comparable only if they comply with the core PCR, use the same sub-category PCR where applicable, include all relevant information modules and are based on equivalent scenarios with respect to the context of construction works. The owner of the declaration shall be liable for the underlying information and evidence; SCS shall not be liable with respect to manufacturer information, life cycle assessment data, and evidence supplied or made available to SCS.*

# 1. Milliken

Milliken is a leading supplier of floor coverings, with a rich history or delivering dynamic carpet and luxury vinyl tile collections from its award winning design studios and manufacturing facilities around the globe. Combining global insight with national expertise and proprietary technologies, Milliken is at the forefront of innovation and design, offering high-performance, expertly-engineered products. Founded in 1865, Milliken has achieved an amazing 150 years in the textiles business and is now one of the largest privately owned companies in the world, providing expert solutions across a range of disciplines, including specialty chemicals, floor coverings, and performance materials. With over 100 years of environmental stewardship, the Milliken family of companies is one of the world's more responsible manufacturers.

Designing innovative products and solutions for our customers is of the utmost importance. Through meaningful design, deep science and unique insights, we advance product development to the next level, while supporting Milliken's efforts to increase sustainable results and minimize environmental impact of all products. Milliken's holistic approach to innovation encompasses all stages of the life cycle - from material sourcing and manufacturing practices to end-of-life management. Our commitment to transparency, health, safety, quality and sustainability allows us to put our customers, associates, and communities first. In 2020, Milliken was named one of the World's Most Ethical Companies by the Ethisphere Institute for the fourteenth year running.

# 2. Product

### 2.1 PRODUCT DESCRIPTION

| Product Name | Representative Thickness (mm) | Description |
|---|---|---|
| 2.5mm PVC Free: En Plein Air | 2.5 mm | The En Plein Air collection is designed with both people and the planet in mind. As our third PVC-Free collection, it reflects our commitment to creating healthier indoor environments without compromising on design. Inspired by the fluid, expressive nature of outdoor painting, these designs bring a sense of movement, tranquility and connection to any space. Combining well-being with artistic influence, this collection proves that great design can be both beautiful and responsible. |

### 2.2 PRODUCT FLOW DIAGRAM

A flow diagram illustrating the production processes and life cycle phases included in the scope of the EPD is provided below.

### 2.3 APPLICATION

The products provide the primary function of flooring for interior applications. The flooring products are used in various residential and commercial applications including retail, healthcare, education, and hospitality.

### 2.4 DECLARATION OF METHODOLOGICAL FRAMEWORK

The scope of the EPD is cradle-to-grave, including raw material extraction and processing, transportation, product manufacture, product delivery, installation and use, and product disposal. The life cycle phases included in the product system boundary are shown below.

Cut-off and allocation procedures are described below and conform to the PCR and ISO standards.

**Table 1.** *Life cycle phases included in the product system boundary.*

| Product | | | Construction Process | | Use | | | | | | | End-of-life | | | | 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 extraction and processing | Transport to manufacturer | Manufacturing | Transport | Construction – installation | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstruction demolition | Transport | Waste processing | Disposal | Reuse, recovery and/or recycling potential |
| **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **MND** |

X = Included in system boundary
MND = Module not declared

### 2.5 TECHNICAL DATA

Technical specifications for the flooring products are summarized in Table 2.

**Table 2.** *Product characteristics for the* **2.5mm PVC Free: En Plein Air** *flooring product*

| Characteristic | | | Description | | | |
|---|---|---|---|---|---|---|
| Sustainable certifications | | | ISO 9001, CE, FloorScore® | | | |
| VOC emissions test method | | | CDPH/EHLB Standard Method, ISO 16000 | | | |
| **Characteristic** | | | **Average Value** | **Unit** | **Min Value** | **Max Value** |
| Product thickness | | | 2.50 (0.098) | mm (in) | 2.50 (0.098) | 2.50 (0.098) |
| Wear layer thickness (where applicable) | | | 0.51 (0.020) | mm (in) | 0.51 (0.020) | 0.51 (0.020) |
| Product weight | | | 3,770 (12.35) | $g/m^2$ ($oz/ft^2$) | 3,770 (12.35) | 3,770 (12.35) |
| Product Form | Tiles | Width | 152.0 (5.98) | mm (in) | 152.0 (5.98) | 152.0 (5.98) |
| | | Length | 1,219 (48.0) | mm (in) | 1,219 (48.0) | 1,219 (48.0) |

### 2.6 MARKET PLACEMENT/APPLICATION RULES

Technical specifications of the flooring products are summarized above. Detailed product performance results can be found on the manufacturer's website https://floors.milliken.com.

### 2.7 PROPERTIES OF DECLARED PRODUCT AS DELIVERED

The flooring products are delivered for installation in the form of tiles of various dimensions.

### 2.8 MATERIAL COMPOSITION

The Luxury flooring products (UNSPSC Class Code 30161700/CSI Code 09 65 00) are manufactured at the production facility in South Korea. The primary materials include polymer resins, plasticizers, fillers and stabilizers.

**Table 3.** *Material content for the flooring products in kg per square meter and percent of total mass.*

| Component | Renewable | Recycled Content (%) | 2.5mm PVC Free: En Plein Air | |
|---|---|---|---|---|
| Filler | No | 0% | 2.33 | 62% |
| Polymer resin | No | 0% | 0.770 | 20% |
| Polyethylene | No | 0% | 0.487 | 13% |
| Polypropylene | No | 0% | 0.114 | 3% |
| Pigment | No | 0% | $1.00 \times 10^{-2}$ | 0.27% |
| Additives | No | 0% | $6.10 \times 10^{-2}$ | 1.6% |
| **Total Product** | | | **3.77** | **100%** |

In conformance with the PCR, product materials were reviewed for the presence of any toxic or hazardous chemicals. Based on a review of the product components provided by the manufacturer, no regulated chemicals, i.e., substances of Very High Concern (SVHC) or substances on the REACH Candidate List, were identified in the product or product components.

### 2.9 MANUFACTURING

The products are manufactured at the production facility in South Korea. The manufacturer provided primary data for their annual production, resource use and electricity consumption and waste generation at the facility. Electricity consumption is modeled using Ecoinvent datasets for the regional electricity grid resource mix on the market. No green power sources or $CO_2$ certificates are included in the present study.

### 2.10 PACKAGING

The products are packaged for shipment using plastic wrap, corrugated board and wooden pallets.

**Table 4.** *Material content for the flooring product packaging in kg per square meter of flooring.*

| Component | Renewable | Recycled Content (%) | 2.5mm PVC Free: En Plein Air | |
|---|---|---|---|---|
| Corrugate/Paper | Yes | 0% | $7.17 \times 10^{-2}$ | 27% |
| Plastic | No | 0% | $2.50 \times 10^{-3}$ | 0.96% |
| Wood | Yes | 0% | 0.187 | 72% |
| **Total Packaging** | | | **0.261** | **100%** |

### 2.11 PRODUCT INSTALLATION

Installation of the product is accomplished using hand tools with negligible impacts. The impacts associated with packaging disposal are included with the installation phase as per PCR requirements.

### 2.12 USE CONDITIONS

No special conditions of use are noted.

### 2.13 REFERENCE SERVICE LIFE

The Reference Service Life (RSL) of the flooring products is based on the manufacturer's warranted lifetime.

### 2.14 RE-USE PHASE

The flooring products are not reused at end-of-life.

### 2.15 DISPOSAL

At end-of-life, the products are disposed of in a landfill.

### 2.16 FURTHER INFORMATION

Further information on the product can be found on the manufacturer's website https://floors.milliken.com.

## 3. LCA: Calculation Rules

### 3.1 FUNCTIONAL UNIT

The functional unit used in the study is defined as 1 $m^2$ of floor covering installed for use over a 75-year period. The corresponding reference flow for the product system is presented in Table 5. For the present assessment, a reference service lifetime (RSL) corresponding to the manufacturer's warranted lifetime is assumed. The total number of required product lifecycles during the 75-year period over which the product system is modeled is also summarized for the products in Table 5.

**Table 5.** *Reference flow and RSL for the flooring products.*

| Product Name | Reference Flow ($kg/m^2$) | Reference Service Life – RSL (years) | Replacement Cycle (ESL/RSL-1) |
|---|---|---|---|
| 2.5mm PVC Free: En Plein Air | 3.77 | 22 | 2.4 |

### 3.2 SYSTEM BOUNDARY

The scope of the EPD is cradle-to-grave, including raw material extraction and processing, transportation, product manufacture, product delivery, installation and use, and product disposal.

Consistent with PCR requirements, processes excluded from the system boundary include the following:

- Construction activities, capital equipment, and infrastructure
- Maintenance and operation of capital equipment
- Personnel travel and resource use

The deletion of these processes is permitted since it is not expected to significantly change the overall conclusions of the study.

The life cycle phases included in the EPD scope are described in Table 6 and illustrated in Figure 1.

**Table 6.** *The modules and unit processes included in the scope for the flooring product system.*

| Module | Module Description | Unit Processes Included in Scope |
|---|---|---|
| A1 | Extraction and processing of raw materials; any reuse of products or materials from previous product systems; processing of secondary materials; generation of electricity from primary energy resources; energy, or other recovery processes from secondary fuels | Extraction and processing of raw materials for the product components. |
| A2 | Transport (to the manufacturer) | Transport of component materials to the manufacturing facilities |
| A3 | Manufacturing, including ancillary material production | Manufacturing of flooring products and packaging (including upstream unit processes) |
| A4 | Transport (to the building site) | Transport of product (including packaging) to the building site |
| A5 | Construction-installation process | Impacts from the installation of product are assumed negligible. Impacts from the production, transport and disposal of waste material associated with installation are included in this phase in addition to impacts from packaging disposal |
| B1 | Product use | Use of the product in a commercial building setting. There are no associated emissions or impacts from the use of the product |
| B2 | Product maintenance | Maintenance of products over the product RSL, including periodic cleaning. |
| B3 | Product repair | The product is not expected to require repair over its lifetime |
| B4 | Product replacement | The materials and energy required for replacement of the product over the 75-year ESL of the assessment are included in this phase |
| B5 | Product refurbishment | The product is not expected to require refurbishment over its lifetime |
| B6 | Operational energy use by technical building systems | There is no operational energy use associated with the use of the product |

| | | |
|---|---|---|
| B7 | Operational water uses by technical building systems | There is no operational water use associated with the use of the product |
| C1 | Deconstruction, demolition | Demolition of the product is accomplished using hand tools with no associated emissions and negligible impacts |
| C2 | Transport (to waste processing) | Transport of the product to waste treatment at end-of-life |
| C3 | Waste processing for reuse, recovery and/or recycling | The products are disposed of by landfilling which requires no waste processing |
| C4 | Disposal | Disposal of the product |
| D | Reuse-recovery-recycling potential | Module not declared |

**This includes unit processes involved in the generation of electricity, and production of material input (e.g., adhesives and pigments).*

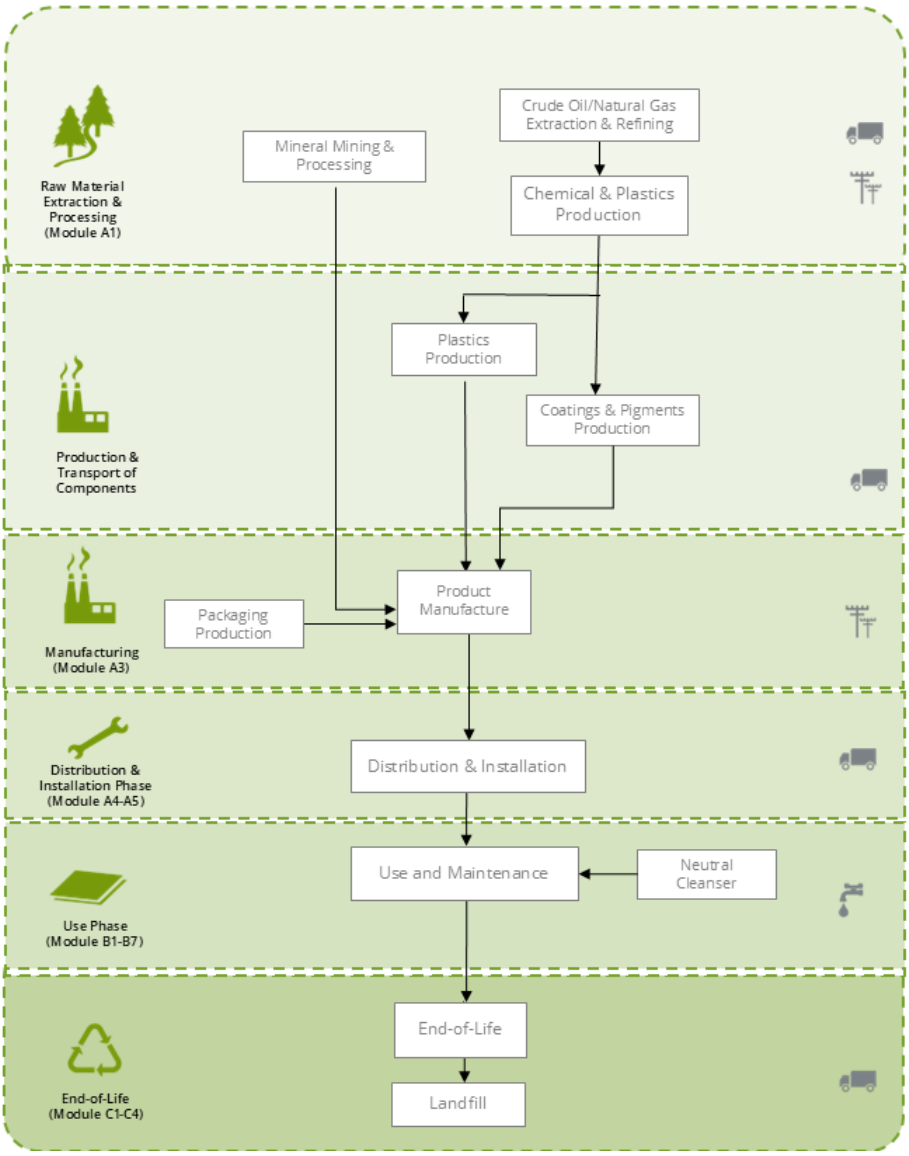


**Figure 1.** *Flow diagram for the life cycle of the flooring products.*

### 3.3 PRODUCT SPECIFIC CALCULATION FOR USE PHASE

The recommended cleaning regime is highly dependent on the use of the premises where the floor covering is installed. In high traffic areas more frequent cleaning will be needed compared to areas where there is low traffic. For the purposes of this EPD, average maintenance (moderate traffic levels) is presented based on typical installations.

### 3.4 UNITS

All data and results are presented using SI units.

### 3.5 ESTIMATES AND ASSUMPTIONS

- Electricity use at the manufacturing facility was allocated to the products based on the product area as a fraction of the total production.
- The Milliken manufacturing facility under review is located in South Korea. Ecoinvent inventory datasets for the South Korean energy resource mix were used to model resource use and emissions from electricity use at the manufacturing facility.
- The Reference Service Life (RSL) of the products was modeled based on information provided by the manufacturer assuming their products are installed and maintained as recommended and used for the specific application noted.
- Downstream transport was modeled based on information provided by the manufacturer representing distribution to consumer markets in North America.
- The maintenance phase of the product life cycle was modeled based on information provided by the manufacturer including recommended installation and cleaning methods, as well as cleaning frequency.
- For the product at end-of-life, disposal of product materials are assumed landfilled while product packaging is modeled based on regional statistics regarding recycling rates of packaging materials.
- For final disposal of the packaging materials at end-of-life, all materials are assumed to be transported 161 km by diesel truck to either a landfill or material reclamation facility (for recycling). Datasets representing disposal in a landfill and waste incineration are from Ecoinvent.
- For final disposal of the flooring products at end-of-life, all materials are assumed to be transported 161 km by diesel truck to landfill. Datasets representing disposal in a landfill are from Ecoinvent.

The PCR requires the results for several inventory flows related to construction products to be reported including energy and resource use and waste and outflows. These are aggregated inventory flows, and do not characterize any potential impact; results should be interpreted taking into account this limitation.

### 3.6 CUT-OFF RULES

According to the PCR, processes contributing greater than 5% of the total environmental impact indicator for each impact are included in the inventory. No data gaps were allowed which were expected to significantly affect the outcome of the indicator results. No known flows are deliberately excluded from this EPD.

### 3.7 DATA SOURCES

Primary data were provided for the manufacturing facility. The sources of secondary LCI data are the Ecoinvent database.

**Table 7.** *Data sources for the flooring products.*

| Component | Dataset | Data Source | Publication Date |
|---|---|---|---|
| **PRODUCT** | | | |
| **Filler** | | | |
| Calcium Carbonate | limestone production, crushed, washed \| limestone, crushed, washed \| Cutoff, S/RoW | EI v3.12 | 2025 |
| Talc | Talcum powder production - LCI/EU27+3 | EI v3.12, LCI | 2025 |
| **Pigment** | | | |
| Carbon Black | carbon black production \| carbon black \| Cutoff, S/GLO | EI v3.12 | 2025 |
| $TiO_2$ | market for titanium dioxide \| titanium dioxide \| Cutoff, S/RoW | EI v3.12 | 2025 |
| **Plastics** | | | |
| PE | polyethylene production, low density, granulate \| polyethylene, low density, granulate \| Cutoff, S/RoW | EI v3.12 | 2025 |
| PP | polypropylene production, granulate \| polypropylene, granulate \| Cutoff, S/RoW | EI v3.12 | 2025 |
| Acrylic dispersion | acrylic dispersion production, with water, in 58% solution state \| acrylic dispersion, with water, in 58% solution state \| Cutoff, S/RoW | EI v3.12 | 2025 |
| **Other** | | | |
| Coating | market for polyurethane, flexible foam \| polyurethane, flexible foam \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | chemical production, inorganic \| chemical, inorganic \| Cutoff, S/GLO | EI v3.12 | 2025 |
| | chemical production, organic \| chemical, organic \| Cutoff, S/GLO | EI v3.12 | 2025 |
| **PACKAGING** | | | |
| Cardboard | corrugated board box production \| corrugated board box \| Cutoff, S/RoW | EI v3.12 | 2025 |
| Wood | EUR-flat pallet production \| EUR-flat pallet \| Cutoff, S/RoW | EI v3.12 | 2025 |
| Plastic | packaging film production, low density polyethylene \| packaging film, low density polyethylene \| Cutoff, S/RoW; | EI v3.12 | 2025 |
| | polyethylene terephthalate production, granulate, amorphous \| polyethylene terephthalate, granulate, amorphous \| Cutoff, S/RoW | EI v3.12 | 2025 |
| **TRANSPORT** | | | |
| Road transport | transport, freight, lorry 16-32 metric ton, EURO4 \| transport, freight, lorry 16-32 metric ton, EURO4 \| Cutoff, S/RoW | EI v3.12 | 2025 |
| Ship transport | transport, freight, sea, container ship \| transport, freight, sea, container ship \| Cutoff, S/GLO | EI v3.12 | 2025 |
| **RESOURCES** | | | |
| Grid electricity | market for electricity, medium voltage \| electricity, medium voltage \| Cutoff, S/KR | EI v3.12 | 2025 |
| Heat – natural gas | market for heat, central or small-scale, natural gas \| heat, central or small-scale, natural gas \| Cutoff, S/RoW | EI v3.12 | 2025 |
| Heat - Heavy fuel oil | heat production, heavy fuel oil, at industrial furnace 1MW \| heat, district or industrial, other than natural gas \| Cutoff, S/RoW | EI v3.12 | 2025 |
| Heat - Light fuel oil | heat production, light fuel oil, at industrial furnace 1MW \| heat, district or industrial, other than natural gas \| Cutoff, S/RoW | EI v3.12 | 2025 |
| Tap Water | tap water production, conventional treatment \| tap water \| Cutoff, S/RoW | EI v3.12 | 2025 |
| Wastewater | treatment of wastewater, average, wastewater treatment \| wastewater, average \| Cutoff, S/RoW | EI v3.12 | 2025 |
| **MAINTENANCE** | | | |
| Neutral cleaner | ethoxylated alcohol (AE7) production, petrochemical \| ethoxylated alcohol (AE7) \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | fatty acid production, from palm oil \| fatty acid \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | market group for tap water \| tap water \| Cutoff, S/GLO | EI v3.12 | 2025 |
| Water | tap water production, conventional treatment \| tap water \| Cutoff, S/RoW | EI v3.12 | 2025 |
| **WASTE DISPOSAL** | | | |
| Landfill | treatment of municipal solid waste, sanitary landfill \| municipal solid waste \| Cutoff, S/RoW | EI v3.12 | 2025 |

| Component | Dataset | Data Source | Publication Date |
|---|---|---|---|
| | treatment of waste wood, untreated, sanitary landfill \| waste wood, untreated \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | treatment of waste polyethylene, sanitary landfill \| waste polyethylene \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | treatment of waste paperboard, sanitary landfill \| waste paperboard \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | treatment of waste plastic, mixture, sanitary landfill \| waste plastic, mixture \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | treatment of waste polyvinylchloride, sanitary landfill \| waste polyvinylchloride \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | treatment of waste wood, untreated, sanitary landfill \| waste wood, untreated \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | treatment of waste polypropylene, sanitary landfill \| waste polypropylene \| Cutoff, S/RoW | EI v3.12 | 2025 |
| Incineration | treatment of waste polyethylene, municipal incineration \| waste polyethylene \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | treatment of waste wood, untreated, municipal incineration \| waste wood, untreated \| Cutoff, S/RoW | EI v3.12 | 2025 |
| | treatment of waste paperboard, municipal incineration \| waste paperboard \| Cutoff, S/RoW | EI v3.12 | 2025 |

### 3.8 DATA QUALITY

The data quality assessment addressed the following parameters: time-related coverage, geographical coverage, technological coverage, precision, completeness, representativeness, consistency, reproducibility, sources of data, and uncertainty.

**Table 8.** *Data quality assessment for the flooring product system.*

| Data Quality Parameter | Data Quality Discussion |
|---|---|
| **Time-Related Coverage:** Age of data and the minimum length of time over which data is collected | The most recent available data are used, based on other considerations such as data quality and similarity to the actual operations. Typically, these data are less than 5 years old. All of the data used represented an average of at least one year's worth of data collection, and up to three years in some cases. Manufacturer-supplied data (primary data) are based on annual production for 2025. |
| **Geographical Coverage:** Geographical area from which data for unit processes is collected to satisfy the goal of the study | The data used in the analysis provide the best possible representation available with current data. Electricity use for product manufacture is modeled using representative data for Asia. Surrogate data used in the assessment are representative of global or European operations. Data representative of European operations are considered sufficiently similar to actual processes. Data representing product disposal are based on regional statistics. |
| **Technology Coverage:** Specific technology or technology mix | For the most part, data are representative of the actual technologies used for processing, transportation, and manufacturing operations. Representative fabrication datasets, specific to the type of material, are used to represent the actual processes, as appropriate. |
| **Precision:** Measure of the variability of the data values for each data expressed | Precision of results are not quantified due to a lack of data. Data collected for operations were typically averaged for one or more years and over multiple operations, which is expected to reduce the variability of results. |
| **Completeness:** Percentage of flow that is measured or estimated | The LCA model included all known mass and energy flows for production of the flooring products. In some instances, surrogate data used to represent upstream and downstream operations may be missing some data which is propagated in the model. No known processes or activities contributing to more than 1% of the total environmental impact for each indicator are excluded. |
| **Representativeness:** Qualitative assessment of the degree to which the data set | Data used in the assessment represent typical or average processes as currently reported from multiple data sources and are therefore generally representative of the range of actual processes and technologies for production of these materials. Considerable deviation may exist among actual processes on a site-specific basis; however, such a determination would require detailed data collection throughout the supply chain back to resource extraction. |

| Data Quality Parameter | Data Quality Discussion |
|---|---|
| reflects the true population of interest | |
| **Consistency:** Qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis | The consistency of the assessment is considered to be high. Data sources of similar quality and age are used; with a bias towards Ecoinvent v3.12 data where available. Different portions of the product life cycle are equally considered. |
| **Reproducibility:** Qualitative assessment of the extent to which information about the methodology and data values would allow an independent practitioner to reproduce the results reported in the study | Based on the description of data and assumptions used, this assessment would be reproducible by other practitioners. All assumptions, models, and data sources are documented. |
| **Sources of the Data:** Description of all primary and secondary data sources | Data representing energy use at the manufacturing facility represents an annual average and are considered of high quality due to the length of time over which these data are collected, as compared to a snapshot that may not accurately reflect fluctuations in production. For secondary LCI data, Ecoinvent v3.12 LCI data are used. |
| **Uncertainty of the Information:** Uncertainty related to data, models, and assumptions | Uncertainty related to materials in the products and packaging is low. Actual supplier data for upstream operations were not available, and the study relied upon the use of existing representative datasets. These datasets contained relatively recent data but lacked geographical representativeness. Uncertainty related to the impact assessment methods used in the study are high. The impact assessment method required by the PCR includes impact potentials, which lack characterization of providing and receiving environments or tipping points. |

### 3.9 PERIOD UNDER REVIEW

The LCA results are based on annualized production data for 2025.

### 3.10 ALLOCATION

Resource use at the production facility (e.g., water and energy) were allocated to the product based on the product area as a fraction of the total facility production volume (i.e., area-based allocation). Area-based allocation was deemed most appropriate for the flooring products as total facility production was available as total square meters of product produced.

Impacts from transportation, including product distribution to point of sale, were attributed to the products based on the mass of material and distance transported.

### 3.11 COMPARABILITY

The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.

# 4. LCA: Scenarios and Additional Technical Information

**Delivery and Installation stage (A4 - A5)**

Distribution of the flooring products to the point of sale is included, based on data from the manufacturer. Average transport distances for distribution of the products from the manufacturing facilities to distribution centers in North America were provided by the manufacturer. Transport by diesel truck from the distribution centers to the point of installation is also included, based on information provided by the manufacturer. Transportation parameters for modeling product distribution are summarized in Table 9.

**Table 9.** *Product distribution parameters by transport mode.*

| Parameter | Unit | Value | |
|---|---|---|---|
| **Ground transport** | | | |
| Fuel type | - | Diesel | |
| Liters of fuel | L/100km | 18.7 | |
| Vehicle type | - | Diesel truck | |
| Capacity utilization | % | 76 | |
| **Ocean transport** | | | |
| Fuel type | - | Fuel oil | |
| Liters of fuel | g/tkm | 2.52 | |
| Vehicle type | - | Ocean freighter | |
| Capacity utilization | % | 70 | |
| **Product Name** | **Gross mass transported (kg)** | **Transport Distance (km)** | |
| | | Road | Ship |
| 2.5mm PVC Free: En Plein Air | 4.03 | 934 | 11,500 |

Installation of the product is accomplished using hand tools with no associated emissions and negligible impacts. Approximately 4% installation waste is assumed landfilled. The impacts associated with packaging disposal, as well as the production, transport and disposal of installation waste are included with the installation phase as per PCR requirements. Modeling parameters for product installation are summarized in Table 10.

Assumptions for end-of-life for the packaging are based on regional statistics regarding municipal solid waste generation and disposal, including end-of-life recycling rates of packaging and product materials. The packaging materials are recycled based on material recycling rates for North America[1].

**Table 10.** *Installation parameters for the flooring products, per 1 m$^2$.*

| Parameter | | 2.5mm PVC Free: En Plein Air |
|---|---|---|
| Ancillary materials – adhesive (kg) | | $3.00 \times 10^{-2}$ |
| Net freshwater consumption (m$^3$) | | 0.00 |
| Electricity consumption (kWh) | | 0.00 |
| Product loss per functional unit (kg) | | 0.151 |
| Waste materials generated by product installation (kg) | | 0.222 |
| Output materials resulting from on-site waste processing (kg) | | n/a |
| Mass of packaging waste (kg) | Plastic | $2.50 \times 10^{-3}$ |
| | Corrugate | $7.17 \times 10^{-2}$ |
| | Wood | 0.187 |
| Biogenic carbon contained in packaging (kg $CO_2$)[1] | | 0.474 |
| Direct emissions (kg) | | 0.00 |

[1] https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling

[1] Biogenic carbon contained in packaging calculated assuming the carbon content of corrugate and wood is 50% by weight

### Use stage (B1)

No impacts are associated with the use of the product over the Reference Service Lifetime.

### Maintenance stage (B2)

According to the manufacturer, typical maintenance involves regular sweeping and damp mopping, as well as periodic machine cleaning of the vinyl flooring. The present assessment is based on a recommended weekly cleaning schedule including sweeping and mopping with a neutral cleaner and monthly machine cleaning. The parameters used to model the product maintenance are summarized in Table 11.

**Table 11.** *Maintenance parameters for the flooring products, per 1 $m^2$.*

| Parameter | Unit | Value |
|---|---|---|
| Maintenance cycle | Cycles / RSL | 1,144 |
| Maintenance cycle | Cycles / ESL | 3,900 |
| Maintenance process | - | Damp mopping |
| Net freshwater consumption | $m^3/m^2/yr$ | 0.0058 |
| Cleaning agent | $kg/m^2/yr$ | 0.0119 |
| Maintenance process | - | Machine cleaning |
| Electricity | $kWh/m^2/yr$ | 0.022 |
| Further assumptions | - | Moderate traffic; weekly maintenance |

### Repair/Refurbishment stage (B3; B5)

Product repair and refurbishment are not relevant during the lifetime of the product.

### Replacement stage (B4)

The materials and energy required for replacement of the product over the 75-year estimated service lifetime of the assessment are included in this stage. Modeling parameters for the product replacement stage are summarized in Table 12.

**Table 12.** *Product replacement parameters for the flooring products, per 1 $m^2$.*

| Product | Unit | Value |
|---|---|---|
| Reference service life | Years | 22 |
| Replacement cycle | - | 2.4 |
| Energy input | kWh | |
| Freshwater consumption | $m^3$ | - |
| Ancillary materials | kg | - |
| Replacement parts | kg | 9.67 |
| Direct emissions | kg | - |

### Building operation stage (B6 – B7)

There is no operational energy or water use associated with the use of the product.

### Disposal stage (C1 - C4)

At end-of-life, the product is assumed to be disposed in a landfill per PCR requirements.

Transportation of waste materials at end-of-life (*C2*) assumes a 161 km (~100 miles) average distance to disposal. No recycling of the product materials is assumed at end-of-life. The relevant disposal parameters used for the product system are summarized in Table 13.

**Table 13.** *End-of-life disposal scenario parameters for the flooring product.*

| Parameter | Value |
|---|---|
| Assumptions for scenario development | 100% landfill |
| Collection process | |
| Collected with mixed construction waste (kg) | 3.77 |
| Recovery | n/a |
| Landfill disposal (kg) | 3.77 |
| Removals of biogenic carbon (kg $CO_2$ eq)[1] | n/a |

[1] Excluding packaging

**Biogenic Carbon Emissions and Removals**

The product systems include biogenic material in the packaging components and therefore biogenic carbon emissions and removals are reported in line with the PCR and ISO 21930 standard. Per ISO 21930, biogenic carbon entering the product system is accounted for as a removal and presented as a negative carbon emission. Biogenic carbon leaving the product system as a product, co-products or combustion emissions are accounted for as positive emissions.

Biogenic carbon emissions and removals for the flooring products analyzed are presented in Table 14.
The emissions and removals reported are listed below. Note that only the packaging parameters (BCRK and BCEK) are applicable for the product systems.

- Biogenic carbon associated with the packaging materials (BCRK) is reported in module A3
- Biogenic carbon associated with the disposal of packaging waste materials during installation (BCEK) is reported in module A5

**Table 14.** *Biogenic carbon emissions and removals for the* **2.5mm PVC Free: En Plein Air** *flooring products.*

| Parameter | Unit | A1 | A2 | A3 | A4 | A5 | B2 | B4 | C2 | C4 |
|---|---|---|---|---|---|---|---|---|---|---|
| BCRK | kg $CO_2$ | 0.00 | 0.00 | -0.474 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| BCEK | kg $CO_2$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.474 | 0.00 | 0.00 | 0.00 | 0.00 |

# 5. LCA: Results

Results of the Life Cycle Assessment are presented below. It is noted that LCA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

The following environmental impact category indicators are reported using characterization factors based on the U.S. EPA's Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI 2.2) and The Intergovernmental Panel on Climate Change (IPCC 2021).

| IPCC 2021 Impact Category | Unit |
|---|---|
| Global Warming Potential (GWP) | kg $CO_2$ eq |
| **TRACI 2.2 Impact Category** | **Unit** |
| Global Warming Potential (GWP) | kg $CO_2$ eq |
| Ozone Depletion Potential (ODP) | kg CFC 11 eq |
| Acidification Potential (AP) | kg $SO_2$ eq |
| Eutrophication Potential – freshwater (EP_fw) | kg P eq |
| Eutrophication Potential – marine (EP_marine) | kg N eq |
| Smog Formation Potential (SFP) | kg $O_3$ eq |

These 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.

Note that the TRACI 2.2 global warming calculations are based on the IPCC 2021 characterization factors and do not include biogenic carbon uptake or biomass $CO_2$ emissions. Based on the component materials of the product and production processes, there are no impacts associated with land-use changes, nor are environmental impacts associated with carbonation relevant for the product system.

These 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.

The following inventory parameters, specified by the PCR, are also reported.

| Resources | Unit | Waste and Outflows | Unit |
|---|---|---|---|
| $RPR_E$: Renewable primary resources used as energy carrier (fuel) | MJ, LHV | HWD: Hazardous waste disposed | kg |
| $RPR_M$: Renewable primary resources with energy content used as material | MJ, LHV | NHWD: Non-hazardous waste disposed | kg |
| $NRPR_E$: Non-renewable primary resources used as an energy carrier (fuel) | MJ, LHV | HLRW: High-level radioactive waste, conditioned, to final repository | kg |
| $NRPR_M$: Non-renewable primary resources with energy content used as material | MJ, LHV | ILLRW: Intermediate- and low-level radioactive waste, conditioned, to final repository | kg |
| SM: Secondary materials | kg | CRU: Components for re-use | kg |
| RSF: Renewable secondary fuels | MJ, LHV | MR: Materials for recycling | kg |
| NRSF: Non-renewable secondary fuels | MJ, LHV | MER: Materials for energy recovery | kg |
| RE: Recovered energy | MJ, LHV | EE: Recovered energy exported from the product system | MJ, LHV |
| FW: Use of net freshwater resources | $m^3$ | ADPF: Abiotic Depletion | MJ, LHV |

Modules B1, B3, B5, B6, and B7 are not applicable and therefore set to zero. In addition, modules C1 and C3 are likewise not associated with any impact as the products are expected to be manually deconstructed. Except for the packaging, the flooring product systems do not contain bio-based materials. Biogenic carbon emissions and removals are reported for the packaging component materials only (see Section 5.2). Impacts associated with Module D are negligible. In the interest of space and table readability, these modules are not included in the results presented below.

Note that the use of the results of modules A1-A3 without considering the results of module C is discouraged.

**Table 15**. *Life Cycle Impact Assessment results, per 1 m², for the product over a 75-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.* **(2.5mm PVC Free: En Plein Air)**

| Impact Category | Unit | Raw Materials | Upstream Transport | Manufacturing | Downstream Transport | Installation | Maintenance | Replacements | Transport to Disposal | Disposal |
|---|---|---|---|---|---|---|---|---|---|---|
| **TRACI** | | | | | | | | | | |
| Global warming potential | kg CO2 eq | 6.57 | 0.150 | 2.54 | 1.21 | 0.742 | 6.20 | 30.1 | 0.113 | 1.21 |
| | % | 13% | 0.31% | 5.2% | 2.5% | 1.5% | 13% | 62% | 0.23% | 2.5% |
| Ozone depletion potential | kg CFC-11 eq | $1.72 \times 10^{-7}$ | $2.19 \times 10^{-9}$ | $5.36 \times 10^{-8}$ | $1.79 \times 10^{-8}$ | $1.81 \times 10^{-8}$ | $7.21 \times 10^{-8}$ | $6.41 \times 10^{-7}$ | $2.65 \times 10^{-9}$ | $1.12 \times 10^{-9}$ |
| | % | 18% | 0.22% | 5.5% | 1.8% | 1.8% | 7.3% | 65% | 0.27% | 0.11% |
| Acidification potential | kg SO2 eq | $2.98 \times 10^{-2}$ | $5.86 \times 10^{-4}$ | $7.68 \times 10^{-3}$ | $1.47 \times 10^{-2}$ | $3.04 \times 10^{-3}$ | $2.07 \times 10^{-2}$ | 0.136 | $4.20 \times 10^{-4}$ | $4.29 \times 10^{-4}$ |
| | % | 14% | 0.27% | 3.6% | 6.9% | 1.4% | 9.7% | 64% | 0.2% | 0.2% |
| Eutrophication potential: freshwater | kg P eq | $1.57 \times 10^{-3}$ | $1.57 \times 10^{-5}$ | $1.20 \times 10^{-3}$ | $9.33 \times 10^{-5}$ | $1.87 \times 10^{-4}$ | $1.50 \times 10^{-3}$ | $7.77 \times 10^{-3}$ | $7.42 \times 10^{-6}$ | $1.64 \times 10^{-4}$ |
| | % | 13% | 0.13% | 9.6% | 0.75% | 1.5% | 12% | 62% | 0.059% | 1.3% |
| Eutrophication potential: marine | kg N eq | $1.25 \times 10^{-2}$ | $5.92 \times 10^{-4}$ | $6.82 \times 10^{-3}$ | $1.20 \times 10^{-2}$ | $1.93 \times 10^{-3}$ | $1.51 \times 10^{-2}$ | $8.64 \times 10^{-2}$ | $4.53 \times 10^{-4}$ | $1.69 \times 10^{-3}$ |
| | % | 9.1% | 0.43% | 5% | 8.7% | 1.4% | 11% | 63% | 0.33% | 1.2% |
| Smog formation potential | kg O3 eq | 0.300 | $1.45 \times 10^{-2}$ | 0.156 | 0.292 | $4.33 \times 10^{-2}$ | 0.232 | 1.98 | $1.11 \times 10^{-2}$ | $8.20 \times 10^{-3}$ |
| | % | 9.9% | 0.48% | 5.1% | 9.6% | 1.4% | 7.7% | 65% | 0.36% | 0.27% |
| **IPCC 2021** | | | | | | | | | | |
| Global warming | kg CO2 eq | 6.71 | 0.153 | 2.61 | 1.23 | 0.775 | 6.28 | 31.3 | 0.115 | 1.44 |
| | % | 13% | 0.3% | 5.2% | 2.4% | 1.5% | 12% | 62% | 0.23% | 2.9% |

**Table 16**. *Resource use, per 1 m², for the product over a 75-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.* **(2.5mm PVC Free: En Plein Air)**

| Parameter | Unit | Raw Materials | Upstream Transport | Manufacturing | Downstream Transport | Installation | Maintenance | Replacements | Transport to Disposal | Disposal |
|---|---|---|---|---|---|---|---|---|---|---|
| **Resources** | | | | | | | | | | |
| Use of renewable primary energy resources used as energy carrier (PERE) | MJ | 4.31 | $2.95 \times 10^{-2}$ | 1.56 | 0.190 | 0.420 | 67.0 | 15.7 | $2.66 \times 10^{-2}$ | $1.84 \times 10^{-2}$ |
| | % | 4.8% | 0.033% | 1.7% | 0.21% | 0.47% | 75% | 18% | 0.03% | 0.021% |
| Use of renewable primary energy resources used as raw materials (PERM) | MJ | 0.00 | 0.00 | 4.76 | 0.00 | 0.214 | 0.00 | 11.9 | 0.00 | 0.00 |
| | % | 0% | 0% | 28% | 0% | 1.3% | 0% | 71% | 0% | 0% |
| Total use of renewable primary energy resources (PERT) | MJ | 4.31 | $2.95 \times 10^{-2}$ | 6.31 | 0.190 | 0.634 | 67.0 | 27.6 | $2.66 \times 10^{-2}$ | $1.84 \times 10^{-2}$ |
| | % | 4.1% | 0.028% | 5.9% | 0.18% | 0.6% | 63% | 26% | 0.025% | 0.017% |
| Use of nonrenewable primary energy resources used as energy carrier (PENRE) | MJ | 81.2 | 2.11 | 38.2 | 16.2 | 12.0 | 86.3 | 365 | 1.62 | 0.979 |
| | % | 13% | 0.35% | 6.3% | 2.7% | 2% | 14% | 60% | 0.27% | 0.16% |
| Use of nonrenewable primary energy resources used as raw materials (PENRM) | MJ | 62.5 | 0.00 | $2.41 \times 10^{-2}$ | 0.00 | $1.08 \times 10^{-3}$ | 0.00 | 150 | 0.00 | 0.00 |
| | % | 29% | 0% | 0.011% | 0% | 0.00051% | 0% | 71% | 0% | 0% |
| Total use of nonrenewable primary energy resources (PENRT) | MJ | 144 | 2.11 | 38.2 | 16.2 | 12.0 | 86.3 | 515 | 1.62 | 0.979 |
| | % | 18% | 0.26% | 4.7% | 2% | 1.5% | 11% | 63% | 0.2% | 0.12% |
| Use of secondary materials (SM) | kg | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Use of renewable secondary fuels (RSF) | MJ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Use of nonrenewable secondary fuels (NRSF) | MJ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Recovered energy (RE) | m3 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Abiotic depletion potential for fossil resources (ADPF) | MJ | 142 | 2.10 | 27.9 | 16.1 | 11.3 | 79.0 | 485 | 1.60 | 0.968 |
| | % | 19% | 0.27% | 3.6% | 2.1% | 1.5% | 10% | 63% | 0.21% | 0.13% |
| Use of net fresh water (FW) | m3 | $6.35 \times 10^{-2}$ | $2.90 \times 10^{-4}$ | $1.04 \times 10^{-2}$ | $1.82 \times 10^{-3}$ | $3.35 \times 10^{-3}$ | 0.517 | 0.157 | $1.98 \times 10^{-4}$ | $-1.41 \times 10^{-2}$ |
| | % | 8.6% | 0.039% | 1.4% | 0.25% | 0.45% | 70% | 21% | 0.027% | -1.9% |

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**Table 17.** *Waste and outflows, per 1 m², for the product over a 75-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits*. **(2.5mm PVC Free: En Plein Air)**

| Parameter | Unit | Raw Materials | Upstream Transport | Manufacturing | Downstream Transport | Installation | Maintenance | Replacements | Transport to Disposal | Disposal |
|---|---|---|---|---|---|---|---|---|---|---|
| **Wastes** | | | | | | | | | | |
| Hazardous waste disposed (HWD) | kg | 0.402 | $3.56 \times 10^{-3}$ | 0.106 | $2.39 \times 10^{-2}$ | $3.26 \times 10^{-2}$ | 0.422 | 1.37 | $1.66 \times 10^{-3}$ | $1.42 \times 10^{-3}$ |
| | % | 17% | 0.15% | 4.5% | 1% | 1.4% | 18% | 58% | 0.07% | 0.06% |
| Nonhazardous waste disposed (NHWD) | kg | 17.7 | $2.05 \times 10^{-2}$ | 1.47 | 0.145 | 2.46 | 8.57 | 76.5 | $1.78 \times 10^{-2}$ | 10.1 |
| | % | 15% | 0.018% | 1.3% | 0.12% | 2.1% | 7.3% | 65% | 0.015% | 8.6% |
| High-level radioactive waste (HLRWD) | kg | $1.75 \times 10^{-5}$ | $1.23 \times 10^{-7}$ | $6.13 \times 10^{-5}$ | $7.89 \times 10^{-7}$ | $4.21 \times 10^{-6}$ | $2.41 \times 10^{-5}$ | $2.02 \times 10^{-4}$ | $1.19 \times 10^{-7}$ | $8.37 \times 10^{-8}$ |
| | % | 5.6% | 0.04% | 20% | 0.25% | 1.4% | 7.8% | 65% | 0.038% | 0.027% |
| Low-level Radioactive waste (ILLRWD) | kg | $4.24 \times 10^{-5}$ | $2.96 \times 10^{-7}$ | $1.05 \times 10^{-4}$ | $1.89 \times 10^{-6}$ | $8.45 \times 10^{-6}$ | $7.46 \times 10^{-5}$ | $3.80 \times 10^{-4}$ | $3.63 \times 10^{-7}$ | $2.02 \times 10^{-7}$ |
| | % | 6.9% | 0.048% | 17% | 0.31% | 1.4% | 12% | 62% | 0.059% | 0.033% |
| Components for re-use (CRU) | kg | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Materials for recycling (MFR) | kg | 0.00 | 0.00 | 0.00 | 0.00 | $5.75 \times 10^{-2}$ | 0.00 | 0.138 | 0.00 | 0.00 |
| | % | 0% | 0% | 0% | 0% | 29% | 0% | 71% | 0% | 0% |
| Materials for energy recovery (MER) | kg | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Exported electrical energy (EEE) | MJ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Exported thermal energy (EET) | MJ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

## 6. LCA: Interpretation

Category indicator results for the flooring products are summarized by life cycle phase above. A review of the results shows that, with the exception of Eutrophication-marine, Acidification and Smog Formation Potential indicators, impacts over a single product life cycle are dominated by the production stages (A1-A3) followed by product maintenance (B2) and product disposal (C4). Impacts related to phase A1 are associated primarily with the extraction and processing of plastics and plasticizers, while manufacturing impacts (A3) are dominated by electricity consumption at the production facility.

Contributions to the Eutrophication, Acidification and Smog Formation Potential indicators are dominated by impacts associated with product distribution followed by extraction and processing of plastic component materials and the product disposal stages.

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