



ENVIRONMENTAL PRODUCT DECLARATION



Karndean Designflooring LLC

1100 Pontiac Court, Bushy Run Corporate Park,
Export, PA 15632 - USA

PRODUCT

LUXURY VINYL TILES

MODEL

The products included in this EPD are Art Select, Da Vinci, Van Gogh, Opus, Knight Tile, Michelangelo, HDC, K-Trade in tile or plank formats. Luxury Vinyl tile is used in both commercial and residential interiors and available in 2.0 mm, 2.5 mm, 3.0 mm, 4.5 mm and 5.0 mm thicknesses.

FUNCTIONAL UNIT:

1 m² of of installed floor covering for use over a specified time of 60 years.

EPD NUMBER AND PERIOD OF VALIDITY:

SCS-EPD-03635 Valid: June 16, 2015 - June 15, 2020

PRODUCT CATEGORY RULE:

Product Category Rule (PCR) for preparing an Environmental Product Declaration (EPD) for Flooring: Carpet, Resilient, Laminate, Ceramic, Wood. NSF International. Version 2. 2014.

PROGRAM OPERATOR:



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Disclaimers: This Environmental Product Declaration (EPD) conforms to ISO 14025, 14040, ISO 14044, and ISO 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 and may include error factors up to a million-fold.

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.

| | |
|---|---|
| PCR review, was conducted by | Jack Geibig, Ecoform |
| Approved: June 16, 2015. Valid until June 15, 2020. | |
| Independent verification of the declaration and data, according to ISO 14025:2006 and ISO 21930:2007. | <input type="checkbox"/> internal <input checked="" type="checkbox"/> external |
| Third party verifier |  Gerard Mansell, SCS Global Services |

ABOUT KARNDEAN DESIGNFLOORING

For over 40 years we have been creating stylish, high quality design flooring for the home and commercial projects. A global leader in flooring with operations in the USA, UK, Australia, Asia and Europe, we pride ourselves on environmental awareness in the supply and maintenance of our products worldwide. As a family-owned business, we remain true to our roots and are fiercely committed to our customers.

PRODUCT DESCRIPTION

The Luxury Vinyl Tile Representative Product covers a range of styles and colors. The actual volume of each product selling in the USA was used proportionately to determine the overall average value of the characteristics of the representative product.

Vinyl tile is made primarily from calcium carbonate (limestone), polyvinyl chloride, plasticizers and additives (i.e., pigments and stabilizers). It is structured with five layers: two PVC backing layers, one high definition photographic layer, one clear PVC embossed wear layer and a top PU protective layer. Post-industrial scrap materials are recycled back into the luxury vinyl tile during production.



Luxury Vinyl Tile is used in both commercial and residential interiors. It is commonly available in 2.0 mm, 2.5 mm, 3.0 mm, 4.5 mm and 5.0 mm thicknesses. The average weight of this representative product is 5,510 g/m².

The manufacturing process produces a product with a multiple layer construction. A decorative film and PVC transparent wear layer are applied as the surface layers with a lacquer used as a protective finish on the wear layer. The products included in this EPD are Art Select, Da Vinci, Van Gogh, Opus, Knight Tile, Michelangelo, HDC, K-Trade in tile or plank formats.

PRODUCT PERFORMANCE

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

- ASTM F 1700 – Standard Specification for Solid Vinyl Floor tiles: Class III, type B
- ISO 10582 – Resilient floor coverings – Heterogeneous polyvinyl chloride floor covering – Specification: The products are classified from 23-31 to 34-43 according the references of the Luxury Vinyl Tile
- FloorScore® - Indoor Air Quality Certified to SCS-EC10.3-2014.

Fire Testing:

- Class 1 when tested in accordance with ASTM E 648/NFPA 253, Standard Test Method for Critical Radiant Flux.
- Meets 450 or less when tested in accordance with ASTM E 662/NFPA 258, Standard Test Method for Smoke Density if applicable.

PRODUCT APPLICATIONS

Luxury vinyl flooring is commonly used commercially in educational, healthcare, specialty retail and commercial, light commercial, and residential interiors where long lasting performance is required.

MATERIAL CONTENT

Table 1. Material content for the Karndean Designflooring Luxury Vinyl Tiles.

| Component | Materials | Mass % | Availability | | | Origin of Raw Materials |
|------------------|--------------------|--------|--------------|------------------|--------------|-------------------------|
| | | | Renewable | Non-Renewable | Recycled | |
| Polymer | Polyvinyl chloride | 34.1 | | Fossil limited | | Global |
| Polymer | PVC compound | 1.5 | | | Pre-consumer | Global |
| Binder | DOTP-ESO | 11.7 | | Fossil limited | | Global |
| Filler | Calcium carbonate | 51.0 | | Mineral abundant | | Global |
| Lacquer | Polyurethane | 0.3 | | Fossil limited | | Global |
| Stabilizers | Various | 1.2 | | Fossil limited | | Global |
| Other components | Various | 0.2 | | Fossil limited | | Global |

No undisclosed materials are required to be listed based on the reporting criteria of section 4.1 of the PCR.

PRODUCTION OF MAIN MATERIALS:

Limestone:

Limestone or calcium carbonate is used as an inert filler. It is an abundant mineral found in all parts of the world. It can be ground to varying particle sizes and is widely used as a filler in formulated flooring systems.

Polyvinyl chloride:

Commonly abbreviated PVC and derived from fossil fuel and salt, it is the third-most widely produced polymer, after polyethylene and polypropylene. Petroleum or natural gas is processed to make ethylene. Salt electrolysis produces chlorine. Ethylene and chlorine react together to produce ethylene dichloride, which is further processed at high temperature into vinyl chloride monomer. Polymerization of vinyl chloride monomer converts it into white, fine powder called vinyl resin. Recycled polyvinyl chloride is also used.

Plasticizers:

Plasticizers are colorless and odorless liquids commonly used in vinyl products to make it more flexible and/or durable. DOTP is manufactured from DMT (a common material for producing fizzy drink bottles) and 2-ethylhexanol. ESO is manufactured from soybean oil through an epoxidation process.

Additives:

These products are used to make vinyl resistant to heat and light degradation. The product used is an alkaline earth metal (barium or calcium) combined with zinc salts of fatty acids. It is a viscous liquid.

Coating:

A polyurethane UV cured lacquer is used to give a protective coating.

Ink and Pigment:

Inks are used to print the decorative patterns.



PRODUCT CHARACTERISTICS:

Table 2. Product characteristics for ECO surfaces.

| Characteristics | | Average Value | Unit | Maximum Value | Minimum Value |
|--|--------|-------------------------------------|---|--------------------|---------------------|
| Product Thickness: | | - | mm (inch) | 5.0 (0.40) | 2.0 (0.08) |
| Wear Layer Thickness: | | - | mm (inch) | 0.7 (0.03) | 0.15 (0.006) |
| Product Weight: | | 5.510 (18.03) | kg/m ² (oz/ ft ²) | 5.840 (19.14) | 4.020 (10.52) |
| Product Form: | Tiles | - | mm (inch) | 915x915 (36x36) | 1305x305 (12x12) |
| | Planks | - | mm (inch) | 229x76 (9x3) | 1219x228 48x9 |
| VOC Emissions Test Method | | CDPH/EHLB Standard Method v1.1-2010 | | | |
| Additional Characteristics According to NSF/ANSI 332 | | None | | | |
| Sustainable Certifications: | | FloorScore® IAQ Certification | | | |

The actual volume of each product selling in USA was used proportionately to determine the overall average value of the weight.

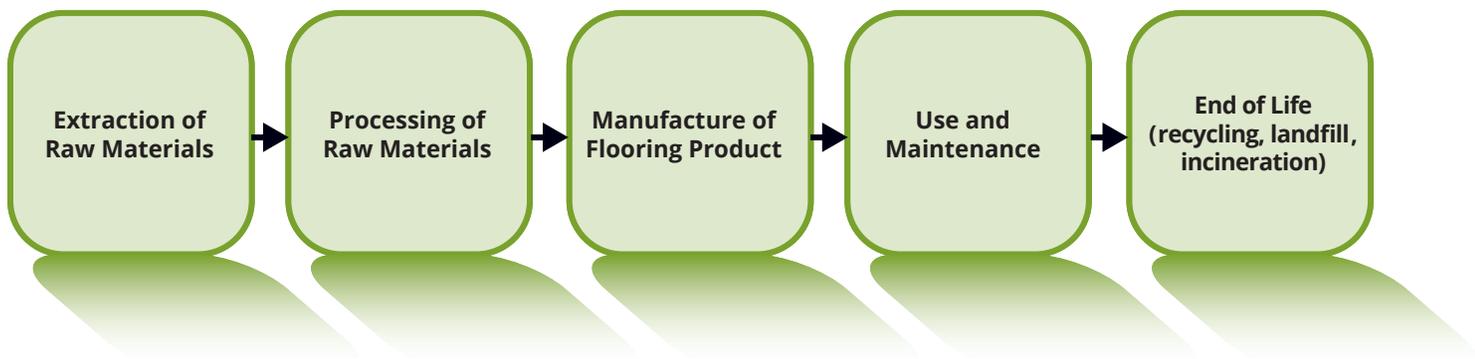


LIFE CYCLE ASSESSMENT

The Life Cycle Inventory (LCI) and Life Cycle Impact Assessment (LCIA) were undertaken in conformance with guidelines from ISO 14040/ISO 14044 with respect to Product Category Rule for Environmental Product Declarations Flooring: Carpet, Resilient, Laminate, Ceramic, Wood (NSF International, 2014).

System boundaries

The system boundaries include sourcing/extraction stage, manufacturing stage, delivery and installation stage, use stage and end of life stage. Primary data are used for the manufacturing, delivery, installation and use stages. Secondary data are used for sourcing/extraction and the end of life stage. Waste for installation and end of life are considered to be disposed of in a landfill.



Description of Functional Unit

This report represents 1 meter square (1 m²) of finished Luxury Vinyl Tile (LVT). The lifetime of the product is assumed to be 30 years, although the actual lifetime of the product may vary due to floor traffic, maintenance program and aesthetics. As required by the Product Category Rules, the time horizon of this assessment is 60 years.

Allocation

There is no allocation in the primary data. The ecoinvent 2.1 database providing secondary data can use allocation in its modelling approach.

Cut-off criteria

Material inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact. Cumulative excluded material inputs and environmental impacts are less than 5%, based on weight of the functional unit.

SUPPORTING TECHNICAL INFORMATION:

Data Sources:

Unit processes were developed with an Excel spreadsheet developed for this purpose, drawing upon data from multiple sources. Primary data were provided by Karndean Designflooring, llc. The primary sources of secondary LCI data were: Ecoinvent Centre ecoinvent data from v2.1. Swiss Center for Life Cycle Inventories, Dübendorf, 2010.

Table 3. Background data sources table.

| Material | Data Source | Flow Name | Date |
|-------------------|---------------|---|------|
| Polymer | Ecoinvent | polyvinylchloride, suspension polymerised, at plant, RER | 2005 |
| Filler | Ecoinvent | limestone, milled, loose, at plant, CH | 2007 |
| Binder | VFCconsultant | plasticiser production, UE | 2007 |
| Binder | VFCconsultant | Epoxydized soybean oil, GLO | 2007 |
| Stabilizers | VFCconsultant | Ca/Zn STABILIZER, GLO | 2007 |
| Stabilizers | VFCconsultant | Ba/Zn stabilizer, GLO | 2007 |
| Dye | Ecoinvent | carbon black, at plant, GLO | 2004 |
| Lacquer | Ecoinvent | acrylic varnish, 87.5% in H2O, at plant, RER | 2007 |
| Dye | Ecoinvent | printing colour, offset, 47.5% solvent, at plant | 2007 |
| Stabilizers | Ecoinvent | RER | 2007 |
| Polymer | VFCconsultant | UV stabilizer, GLO | 2007 |
| Stabilizers | VFCconsultant | Acrylic polymer, GLO | 2007 |
| Packaging | Ecoinvent | Ba stearate, GLO | 2005 |
| Packaging | Ecoinvent | packaging film, LDPE, at plant, RER | 2006 |
| Packaging | Ecoinvent | corrugated board base paper, kraftliner, at plant, RER | 2006 |
| Energy production | Ecoinvent | paper, newsprint, at plant, CH | 2007 |
| Energy production | Ecoinvent | electricity, medium voltage, at grid, CN | 2007 |
| Transport | Ecoinvent | diesel, burned in diesel-electric generating set, GLO | 2007 |
| Transport | Ecoinvent | transport, lorry >32t, EURO3, RER | 2004 |
| Adhesive | Ecoinvent | acrylic dispersion, 65% in H2O, at plant, RER | 2007 |
| Use stage | RFCI | LVT use stage, USA | 2012 |
| End of life stage | Ecoinvent | USAdisposal, building, PVC products, to final disposal, GLO | 2007 |

Data Quality:

Table 4. Data Quality of Life Cycle Inventory Table.

| Data Quality Parameter | Data Quality Discussion |
|--|--|
| <p>Time-Related Coverage: Age of data and the minimum length of time over which data is collected.</p> | <p>Primary data for manufacturing were collected for the year 2012 Transport primary data were collected from April 2011 to March 2012 Almost all secondary data come from Ecoinvent data centre v2.1 (2010) and are representative of the years 2004/2005. The representativeness of the data is considered to be fair.</p> |
| <p>Geographical Coverage: Geographical area from which data for unit processes is collected.</p> | <p>All primary and secondary data referring to energy supply were collected specific to the countries/regions under study. Where countries/regions specific data are unavailable, proxy data are used. The representativeness of the data is considered to be fair.</p> |
| <p>Technology Coverage: Specific technology or technology mix.</p> | <p>All primary and secondary data were modelled to be specific to the technology or technology mixes under study. Where technologic-specific data were unavailable, proxy data are used. The representativeness of the data is considered to be good.</p> |
| <p>Precision: Measure of the variability of the data values for each data expressed.</p> | <p>Primary data for manufacturing and transport have a good precision. Secondary data have a fair to good precision.</p> |
| <p>Completeness: Percentage of flow that is measured or estimated.</p> | <p>All relevant process steps were considered and modelled. Neglected materials and energy flows do not exceed the cut-off criteria specified by the PCR (<5%). The completeness is considered to be good.</p> |
| <p>Representativeness: Qualitative assessment of the degree to which the data set reflects the true population of interest.</p> | <p>The technology, geographical and time related coverage and the precision are from fair to good. The representativeness of the data is good. The representativeness is considered to be good.</p> |
| <p>Consistency: Qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis.</p> | <p>The requirements of the standards (ISO 14040/14044, ISO 21930) and of the PCR are applied uniformly to the various components of the analysis.</p> |
| <p>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.</p> | <p>The availability and representativeness of the primary and secondary data allow the reproducibility of the results of the study.</p> |
| <p>Sources of the data: Description of primary and secondary data sources.</p> | <p>Primary data were provided by Karndean Designflooring LLC. The primary sources of secondary LCI data were: Ecoinvent Centre (2010) ecoinvent data from v2.1. Swiss Center for Life Cycle Inventories, Dübendorf, 2010. Some secondary background data have been based on literature.</p> |
| <p>Uncertainty of the information: E.g. data, models, and assumptions.</p> | <p>Primary data may have +/- 10% annual variation. The uncertainties of the secondary data are not known but are above 5% cut-off rules</p> |

LIFE CYCLE ASSESSMENT STAGES AND REPORTED EPD INFORMATION:

Raw Material Extraction and Processing Stage:

The Sourcing/Extraction stage includes raw materials extraction and processing and the transport to the manufacturer. Packaging materials are also considered in this stage. This stage also includes provision of all materials, products and energy, as well as emissions to air and water and waste processing up to the end-of waste state or disposal of final residues during the product stage. The data collection questionnaire included a request for information for the transport distances.

The product composition is declared specifically for the products of this study. The software model considers 24 life cycle inventories of components used in the declared recipes. For all components used, transport distances are provided and integrated in the calculation (truck: diesel driven, Euro 3, 34 - 40t gross weight, 27t payload capacity; Container ship heavy fuel oil driven, 27500 dwt payload capacity, ocean going).

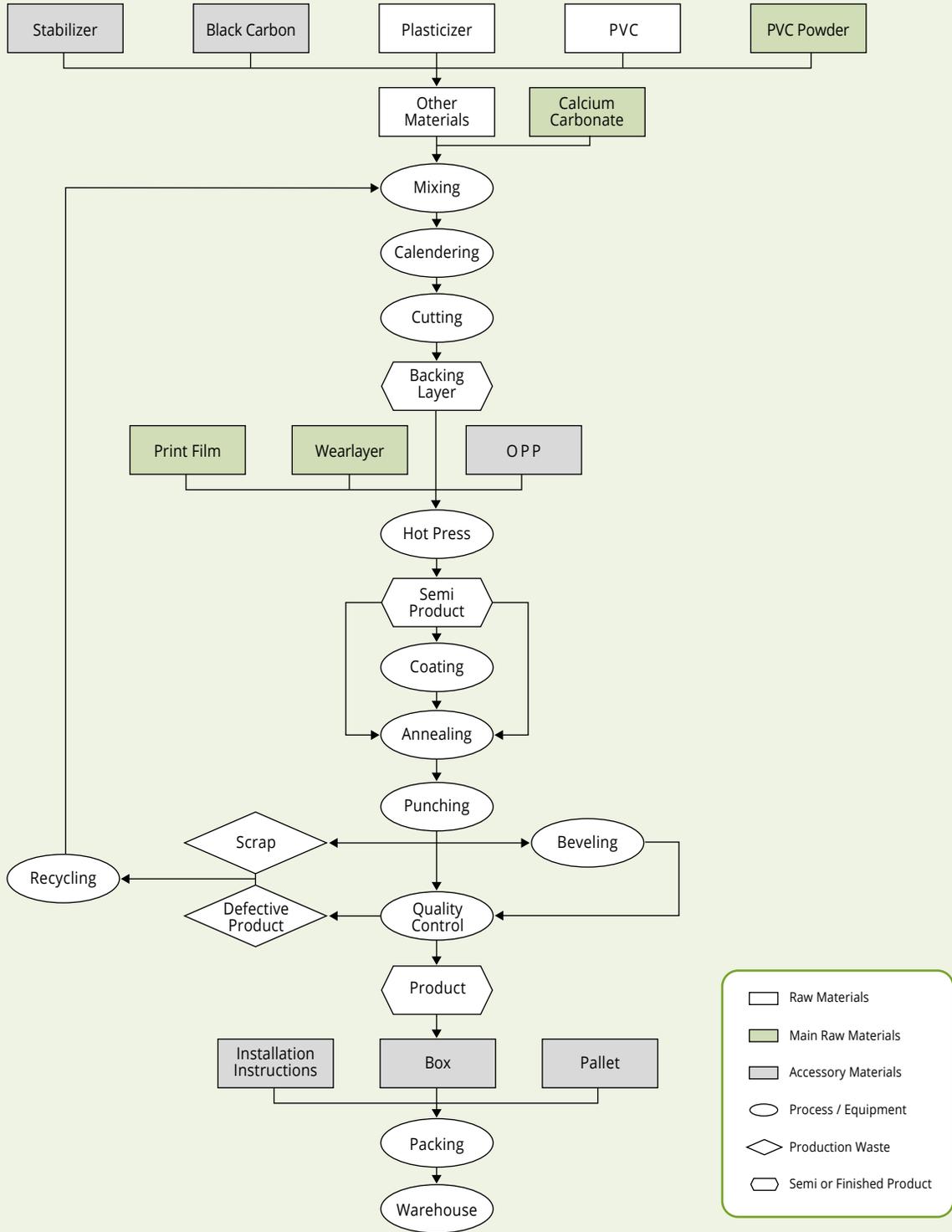
Manufacturing Stage:

This mandatory stage includes manufacturing of the floor covering with the sourced raw materials. This includes provision of all materials, products and energy, as well as emissions to air and water and waste processing up to the end-of waste state or disposal of final residues during the product stage. Overhead and personnel related issues are not considered in this study.

In the first step, the raw materials are mixed and heated. The mixture is calendered in sheet form to make the backing or transparent PVC layers. The sheets are cut and laminated with a printed film. The partially manufactured product is coated with a lacquer and annealed. Finally, the product is cut into tiles or planks and packaged. Quality control checks are made at each step of production. The production process for the manufacture of the LVT is displayed schematically on page 11.



PRODUCTION PROCESS



Delivery and Installation Stage:

Delivery

The delivery includes shipping from Asia to the USA by transoceanic freight ship of the manufactured products and transport from port to warehouse, then to the construction site by truck with an average distance of 2,000 km.

Installation requires adhesive: 250 grams are used for the installation of 1 m². Water based acrylic adhesive is recommended. During installation, 5% of the total material is cut off as waste. In this report the scrap is taken as being disposed of in landfill.

Waste

During installation, 5% of the total material is cut off as waste. In this EPD the scrap is disposed of in landfill. The packaging wastes are also sent to landfill (even if some materials could be recycled in local programs). All emissions are allocated to installation.

Packaging

Table 5. Packaging Material for Karndean Designflooring Luxury Vinyl Tiles.

| Material | Category |
|-------------|-----------------------|
| Wood | Pallets |
| Paperboard | Box |
| Shrink Warp | PE film |
| Paper | Label and instruction |

Use Stage:

The reference service life (RSL) is 10 years for this EPD. This means that the product will meet all requirements for an average of 10 years before being replaced. Karndean Designflooring provides warranties with the period dependent on the product range. See Karndean website: <http://www.karndean.com/en/floors>.

The EPD presents results for both a one year average use and sixty year period; impacts are calculated for both time periods. The EPD assumes that the life of a building is sixty years.

- The one year average use phase impacts are based on the initial installation of one square meter of flooring (transport, installation). Use phase impacts are based on annual cleaning and maintenance guidelines.
- The sixty year impacts are based on six replacements (occurring once every 10 years) of one square meter of flooring (production, transport, installation, end-of-life) and the use phase impacts for 60 years of total floor maintenance.

Impacts for the use phase are primarily due to cleaning and periodic maintenance.

Cleaning and maintenance

As maintenance is dependent on the place where the floor is installed, we take an average maintenance based on typical installation. The average cleaning process is used by both commercial and residential premises.

Table 6. Cleaning and Maintenance assumptions for Karndean Designflooring Luxury Vinyl Tiles

| Maintenance Activity | Cleaning process | Cleaning frequency | Consumption of energy and resources |
|---------------------------|-----------------------|--------------------|-------------------------------------|
| Residential or commercial | Dust Mop | Daily | none |
| | Damp mop / cleaner | Weekly | Hot water / neutral detergent |
| | Spray buff / restorer | Monthly | Floor finish / Electricity |

The cleaning and maintenance of the floors can be found on:
<http://www.karndean.com/en-gb/floors/guides-and-resources/resources/cleaning-and-maintenance?link=mm>

End-of-Life Stage:

Recycling, reuse, or repurpose

For the purpose of the LCA, all flooring waste is assumed to be sent to landfill.

Disposal

For this EPD, the floor covering removal is considered disposed of in landfill. For the transport of resilient floor covering waste to disposal an average distance of 30 km per truck (diesel powered refuse truck) has been assumed.

The fact that there is no recycling facility for this product and also that incineration is not commonly used as waste processing in the USA leads to landfilling as the best assumption.



LIFE CYCLE INVENTORY

The following flows are to be disclosed per the requirements of ISO 21930.

Table 7. Karndean Designflooring Luxury Vinyl Tiles: Aggregated life cycle inventory for an average building life of 60 years.

| Category | Sourcing & Extraction | Manufacturing | Delivery & Installation | Use | End of Life | Total |
|--|-----------------------|---------------|-------------------------|-----|-------------|-------|
| Use of renewable material resources (kg) | 0.95 | - | - | - | - | 0.95 |
| Consumption of freshwater (L) | 30 | 210 | 15 | 350 | - | 600 |
| Hazardous waste (kg) | 5.3 | 0.38 | 0.21 | - | - | 5.8 |
| Non-hazardous waste (kg) | 17 | 6.3 | 2.2 | 6.2 | 35 | 67 |

LIFE CYCLE IMPACT ASSESSMENT

All results presented below have been calculated using the CML 2001 Nov 2013 characterization method.

Impact declaration and use stage normalization

Table 8. Cradle to install and end of life for an average 1 m² Karndean Designflooring Luxury Vinyl Tiles.

| Impact Category | Units | Sourcing & Extraction | Manufacturing | Delivery & Installation | Disposal | Total |
|--|-------------------------------------|-----------------------|----------------------|-------------------------|----------------------|----------------------|
| Global warming potential 100 year time horizon | kg CO ₂ eq | 5.9 | 3.6 | 2.3 | 0.36 | 12 |
| Acidification | kg SO ₂ eq | 1.0x10 ⁻² | 3.4x10 ⁻³ | 3.0x10 ⁻² | 4.4x10 ⁻⁴ | 4.5x10 ⁻² |
| Ozone depletion potential | kg CFC-11 eq | 4.8x10 ⁻⁸ | 1.1x10 ⁻⁸ | 4.7x10 ⁻⁸ | 1.5x10 ⁻⁸ | 1.1x10 ⁻⁷ |
| Photochemical oxidation | Kg C ₂ H ₄ | 8.6x10 ⁻³ | 1.2x10 ⁻³ | 4.8x10 ⁻³ | 7.6x10 ⁻⁵ | 1.5x10 ⁻² |
| Eutrophication | kg PO ₄ ³⁻ eq | 3.2x10 ⁻³ | 7.2x10 ⁻⁵ | 5.2x10 ⁻³ | 5.4x10 ⁻⁴ | 9.8x10 ⁻³ |
| Abiotic depletion, elements | kg Sb eq | 6.8x10 ⁻⁶ | 7.4x10 ⁻⁷ | 7.7x10 ⁻⁶ | 1.3x10 ⁻⁷ | 1.5x10 ⁻⁵ |
| Abiotic depletion, fossil fuels | MJ | 150 | 45 | 47 | 1.4 | 200 |
| Renewable Energy | MJ eq | 11 | 2.4 | 0.79 | 9.0x10 ⁻² | 14 |
| Non-renewable Energy | MJ eq | 150 | 45 | 48 | 1.5 | 250 |

Table 9. Average 1 year use stage impacts for an average 1 m² Karndean Designflooring Luxury Vinyl Tiles.

| Impact Category | Units | Use & Maintenance |
|--|-------------------------------------|----------------------|
| Global warming potential 100 year time horizon | kg CO ₂ eq | 0.11 |
| Acidification | kg SO ₂ eq | 2.8x10 ⁻⁴ |
| Ozone depletion potential | kg CFC-11 eq | 1.0x10 ⁻⁹ |
| Photochemical oxidation | Kg C ₂ H ₄ | 4.5x10 ⁻⁵ |
| Eutrophication | kg PO ₄ ³⁻ eq | 6.7x10 ⁻⁵ |
| Abiotic depletion, elements | kg Sb eq | 6.9x10 ⁻⁸ |
| Abiotic depletion, fossil fuels | MJ | 1.4 |
| Renewable Energy | MJ eq | 4.2x10 ⁻² |
| Non-renewable Energy | MJ eq | 1.5 |

Table 10. Frequency of Maintenance Activities over the RSL of the Luxury Vinyl Tiles

| Maintenance Activity | Frequency over user defined RSL of product |
|-----------------------|--|
| Dust mop | 2,600 times over 10 years |
| Damp mop / cleaner | 520 times over 10 years |
| Spray buff / restorer | 120 times over 10 years |

Table 11. Karndean Designflooring Luxury Vinyl Tiles: Life cycle stage impacts for an average building life of 60 years

| Impact Category | Units | Sourcing & Extraction | Manufacturing | Delivery & Installation | Use | End of Life | Total |
|--|-------------------------------------|-----------------------|----------------------|-------------------------|----------------------|----------------------|----------------------|
| Global warming potential 100 year time horizon | kg CO ₂ eq | 35 | 21 | 14 | 6.5 | 2.1 | 79 |
| Acidification | kg SO ₂ eq | 6.2x10 ⁻² | 2.0x10 ⁻² | 0.18 | 1.7x10 ⁻² | 2.6x10 ⁻³ | 0.28 |
| Ozone depletion potential | kg CFC-11 eq | 2.9x10 ⁻⁷ | 6.7x10 ⁻⁸ | 2.8x10 ⁻⁷ | 6.1x10 ⁻⁸ | 9.2x10 ⁻⁸ | 7.9x10 ⁻⁷ |
| Photochemical oxidation | Kg C ₂ H ₄ | 5.2x10 ⁻² | 7.4x10 ⁻³ | 2.9x10 ⁻² | 2.7x10 ⁻³ | 4.6x10 ⁻⁴ | 9.1x10 ⁻² |
| Eutrophication | kg PO ₄ ³⁻ eq | 1.9x10 ⁻² | 4.3x10 ⁻⁴ | 3.1x10 ⁻² | 4.0x10 ⁻³ | 3.2x10 ⁻³ | 5.8x10 ⁻² |
| Abiotic depletion, elements | kg Sb eq | 4.1x10 ⁻⁵ | 4.5x10 ⁻⁶ | 4.6x10 ⁻⁵ | 4.2x10 ⁻⁶ | 4.2x10 ⁻⁷ | 9.6x10 ⁻⁵ |
| Abiotic depletion, fossil fuels | MJ | 890 | 270 | 280 | 84 | 8.6 | 1,560 |
| Renewable Energy | MJ eq | 65 | 14 | 4.8 | 2.5 | 0.54 | 87 |
| Non-renewable Energy | MJ eq | 920 | 270 | 290 | 92 | 8.9 | 1,570 |



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11. SO 10582 – Resilient floor coverings – Heterogeneous polyvinyl chloride floor covering – Specification
12. ASTM E 648/NFPA 253, Standard Test Method for Critical Radiant Flux.
13. ASTM E 662/NFPA 258, Standard Test Method for Smoke Density



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