

**Declaration Owner****Bay Resource Group, Inc.**

Unit #173-11280 Twigg Place

Richmond, BC V6V 0A6

Canada

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+ 604-324-8819

**Product**

- Vinyl Floor Tiles – 2mm & 3mm
- PVC Loose Lay
- Click Composite Core w/ Cork Backing
- SPC w/ IXPE Backing
- PVC Rigid w/ IXPE Backing

(UNSPSC Class Code 30161707/CSI Code 09 65 00)

**Functional Unit**

The functional unit is one square meter of flooring over a 60-year period.

**EPD Number and Period of Validity**

SCS-EPD-10172

EPD Valid June 4, 2024 through June 3, 2029

**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 Extended 12 months per PCRExt 2023-112, valid through June 30, 2024

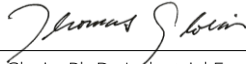
**Program Operator**

SCS Global Services

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|                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------|---|------------------------|---|------------------------|---|---------------------|---|----------------------------|---|-----------------------------------------|---|--------------------|---|------------------------------------|---|---------------------------------------------------------------|---|--------------------------|----|----------------------------------|----|--------------------------------------|----|----------------|----|
| Declaration Owner:                                                                       | Bay Resource Group, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Address:                                                                                 | Unit #173-11280 Twigg Place, Richmond, BC V6V 0A6, Canada                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Declaration Number:                                                                      | SCS-EPD-10172                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Declaration Validity Period:                                                             | EPD Valid June 4, 2024 through June 3, 2029                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Program Operator:                                                                        | SCS Global Services                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Declaration URL Link:                                                                    | <a href="https://www.scsglobalservices.com/certified-green-products-guide">https://www.scsglobalservices.com/certified-green-products-guide</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| LCA Practitioner:                                                                        | Gerard Mansell, Ph.D., SCS Global Services                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| LCA Software and LCI database:                                                           | OpenLCA v1.11 software and the Ecoinvent v3.8 database                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Product RSL:                                                                             | Various                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Markets of Applicability:                                                                | North America                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| EPD Type:                                                                                | Product-Specific                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| EPD Scope:                                                                               | Cradle-to-Grave                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| LCIA Method and Version:                                                                 | CML-IA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071    | <input checked="" type="checkbox"/> internal <input type="checkbox"/> external                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| LCA Reviewer:                                                                            | <br>Beth Cassese, SCS Global Services                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Part A PCR Review conducted by:                                                          | Jack Geibig, EcoForm. <a href="mailto:jgeibig@ecoform.com">jgeibig@ecoform.com</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Independent verification of the declaration and data, according to ISO 14025 and the PCR | <input type="checkbox"/> internal <input checked="" type="checkbox"/> external                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| EPD Verifier:                                                                            | <br>Thomas Gloria, Ph.D., Industrial Ecology Consultants                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| Declaration Contents:                                                                    | <table border="0"> <tr><td>1. Bay Resource Group, Inc.</td><td>2</td></tr> <tr><td>2. Product Description</td><td>2</td></tr> <tr><td>3. Product Application</td><td>2</td></tr> <tr><td>4. Material Content</td><td>2</td></tr> <tr><td>5. Product Characteristics</td><td>4</td></tr> <tr><td>6. Additional Environmental Information</td><td>5</td></tr> <tr><td>8. Functional Unit</td><td>6</td></tr> <tr><td>9. Product Life Cycle Flow Diagram</td><td>7</td></tr> <tr><td>10. Life Cycle Assessment Stages and Reported EPD Information</td><td>9</td></tr> <tr><td>11. Life Cycle Inventory</td><td>11</td></tr> <tr><td>12. Life Cycle Impact Assessment</td><td>12</td></tr> <tr><td>13. Supporting Technical Information</td><td>31</td></tr> <tr><td>14. References</td><td>34</td></tr> </table> |  | 1. Bay Resource Group, Inc. | 2 | 2. Product Description | 2 | 3. Product Application | 2 | 4. Material Content | 2 | 5. Product Characteristics | 4 | 6. Additional Environmental Information | 5 | 8. Functional Unit | 6 | 9. Product Life Cycle Flow Diagram | 7 | 10. Life Cycle Assessment Stages and Reported EPD Information | 9 | 11. Life Cycle Inventory | 11 | 12. Life Cycle Impact Assessment | 12 | 13. Supporting Technical Information | 31 | 14. References | 34 |
| 1. Bay Resource Group, Inc.                                                              | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 2. Product Description                                                                   | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 3. Product Application                                                                   | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 4. Material Content                                                                      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 5. Product Characteristics                                                               | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 6. Additional Environmental Information                                                  | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 8. Functional Unit                                                                       | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 9. Product Life Cycle Flow Diagram                                                       | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 10. Life Cycle Assessment Stages and Reported EPD Information                            | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 11. Life Cycle Inventory                                                                 | 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 12. Life Cycle Impact Assessment                                                         | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 13. Supporting Technical Information                                                     | 31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |
| 14. References                                                                           | 34                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                             |   |                        |   |                        |   |                     |   |                            |   |                                         |   |                    |   |                                    |   |                                                               |   |                          |    |                                  |    |                                      |    |                |    |

**Disclaimers:** This EPD conforms to ISO 14025, 14040, 14044, and 21930:2007.

**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.

## 1. Bay Resource Group, Inc.

Bay Resource Group has been at the leading edge in the development and distribution of niche flooring products for over 20 years. Bay Resource Group is a family run business based in British Columbia and has distribution agreements covering Eastern Canada and the United States. Bay Resource Group sources and develops a leading edge line of luxury vinyl tiles, which launched under the Harbinger™ brand in 1999.

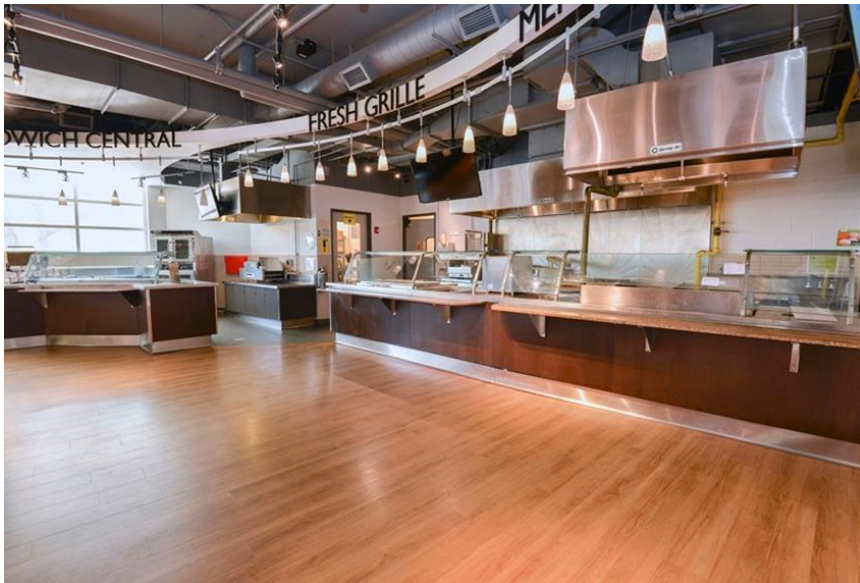
## 2. Product Description

**Table 1.** *Bay Resource Group products included in the assessment.*

| Product Name                         | Representative Thickness (mm) | Description                                                                                                                                                                                                                                                    |
|--------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vinyl Floor Tiles                    | 2.0 mm;<br>3.0 mm             | Harbinger Contract Series 2.0mm glue down vinyl product where durability, style and low maintenance are offered at contractor pricing.                                                                                                                         |
|                                      |                               | Harbinger Essentials and Craftsman Series 3.0mm glue down vinyl, where style, design, performance and price come together in harmony.                                                                                                                          |
| PVC Loose Lay                        | 5.0mm                         | Harbinger loose lay 5.0mm luxury vinyl flooring provides high acoustical values.                                                                                                                                                                               |
| PVC Rigid w/ IXPE Backing            | 4.5mm                         | Harbinger PVC Rigid vinyl product with attached IXPE backing for increased acoustical properties.                                                                                                                                                              |
| Click Composite Core w/ Cork Backing | 10.0 mm                       | Harbinger Acoustic Click is made with a waterproof cork underlay with patented Valinge 5G premium locking system. Installation couldn't be easier. Harbinger luxury vinyl flooring guarantees a product that is 100% pure vinyl.                               |
| SPC w/ IXPE Backing                  | 5.0mm                         | Harbinger Stone Plastic Composite (SPC) flooring is a rigid evolution of traditional luxury vinyl tile. SPC is suitable for all interior application and proven to be stable under severe installation condition such as temperature and humidity fluctuation. |

## 3. Product Application

The products provide the primary function of floor covering in indoor commercial areas.



## 4. Material Content

**Table 2.** Material composition for the Bay Resource Group products by mass in kg/m<sup>2</sup> and as a percentage of total mass.

| Component            | Vinyl Floor Tiles - 2mm | Vinyl Floor Tiles - 3mm | PVC Loose Lay         | Click Composite Core w/ Cork Backing | SPC w/ IXPE Backing | PVC Rigid w/ IXPE Backing |
|----------------------|-------------------------|-------------------------|-----------------------|--------------------------------------|---------------------|---------------------------|
| PVC                  | 1.04                    | 1.34                    | 1.71                  | 7.01                                 | 2.08                | 1.54                      |
|                      | 28%                     | 23%                     | 17%                   | 70%                                  | 24%                 | 27%                       |
| CaCO <sub>3</sub>    | 2.34                    | 3.89                    | 6.69                  | 2.15                                 | 5.91                | 3.58                      |
|                      | 63%                     | 67%                     | 68%                   | 21%                                  | 69%                 | 63%                       |
| Plasticizer          | 0.194                   | 0.299                   | 0.634                 | 0.138                                | 0.00                | 0.278                     |
|                      | 5.2%                    | 5.2%                    | 6.4%                  | 1.4%                                 | 0%                  | 4.9%                      |
| Stabilizer           | 7.16x10 <sup>-3</sup>   | 1.27x10 <sup>-2</sup>   | 2.74x10 <sup>-2</sup> | 1.08x10 <sup>-2</sup>                | 0.282               | 1.16x10 <sup>-2</sup>     |
|                      | 0.19%                   | 0.22%                   | 0.28%                 | 0.11%                                | 3.3%                | 0.2%                      |
| Cork                 | 0.00                    | 0.00                    | 0.00                  | 0.500                                | 0.00                | 0.00                      |
|                      | 0%                      | 0%                      | 0%                    | 5%                                   | 0%                  | 0%                        |
| IXPE                 | 0.00                    | 0.00                    | 0.00                  | 0.00                                 | 0.100               | 0.150                     |
|                      | 0%                      | 0%                      | 0%                    | 0%                                   | 1.2%                | 2.6%                      |
| Other                | 0.163                   | 0.251                   | 0.823                 | 0.221                                | 0.134               | 0.138                     |
|                      | 4.3%                    | 4.3%                    | 8.3%                  | 2.2%                                 | 1.6%                | 2.4%                      |
| <b>Total Product</b> | <b>3.75</b>             | <b>5.80</b>             | <b>9.88</b>           | <b>10.0</b>                          | <b>8.51</b>         | <b>5.70</b>               |
|                      | <b>100%</b>             | <b>100%</b>             | <b>100%</b>           | <b>100%</b>                          | <b>100%</b>         | <b>100%</b>               |

**Table 3.** Origin and availability of material content.

| Material                             | Availability |                  |                                 |                     |
|--------------------------------------|--------------|------------------|---------------------------------|---------------------|
|                                      | Renewable    | Non-renewable    | Recycled (% pre-/post-consumer) | Origin of Materials |
| PVC                                  |              | Fossil limited   |                                 | Asia                |
| Calcium Carbonate                    |              | Mineral abundant |                                 | Asia                |
| Plasticizer                          |              | Fossil limited   |                                 | Asia                |
| Stabilizer                           |              | Fossil limited   |                                 | Asia                |
| Cork                                 | Abundant     |                  |                                 | Asia                |
| IXPE                                 |              | Fossil limited   |                                 | Asia                |
| Other (Adhesive, Coatings, Pigments) |              | Fossil limited   |                                 | Asia                |
| Corrugated board                     | Abundant     |                  |                                 | Asia                |
| Packaging film (LDPE)                |              | Fossil limited   |                                 | Asia                |
| Wood                                 | Abundant     |                  |                                 | Asia                |

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.

## 5. Product Characteristics

**Table 4.** Product characteristics for the Vinyl Floor Tiles - 2mm (LVT2.0) products.

| Characteristic                          |        |        | Description              |               |               |               |
|-----------------------------------------|--------|--------|--------------------------|---------------|---------------|---------------|
| Sustainable certifications              |        |        | FloorScore® SCS-FS-03863 |               |               |               |
| VOC emissions test method               |        |        | CA 01350                 |               |               |               |
| Characteristic                          |        |        | Average Value            | Unit          | Min Value     | Max Value     |
| Product thickness                       |        |        | 2.00 (0.08)              | mm (in)       | 1.90 (0.07)   | 2.13 (0.08)   |
| Wear layer thickness (where applicable) |        |        | 0.30 (0.01)              | mm (in)       | 0.10 (0.00)   | 0.70 (0.03)   |
| Product weight                          |        |        | 3,700 (12.13)            | g/m² (oz/ft²) | 3,600 (11.80) | 3,800 (12.45) |
| Product Form                            | Planks | Width  | 177.8 (7.00)             | mm (in)       | 101.6 (4.00)  | 457.2 (18.0)  |
|                                         |        | Length | 1,220 (4,003)            | m (ft)        | 914 (3,000)   | 1,524 (5,000) |

**Table 5.** Product characteristics for the Vinyl Floor Tiles - 3mm (LVT3.0) products.

| Characteristic                          |        |        | Description              |               |               |               |
|-----------------------------------------|--------|--------|--------------------------|---------------|---------------|---------------|
| Sustainable certifications              |        |        | FloorScore® SCS-FS-03863 |               |               |               |
| VOC emissions test method               |        |        | CA 01350                 |               |               |               |
| Characteristic                          |        |        | Average Value            | Unit          | Min Value     | Max Value     |
| Product thickness                       |        |        | 3.00 (0.12)              | mm (in)       | 2.90 (0.11)   | 3.13 (0.12)   |
| Wear layer thickness (where applicable) |        |        | 0.55 (0.02)              | mm (in)       | 0.10 (0.00)   | 0.70 (0.03)   |
| Product weight                          |        |        | 5,550 (18.19)            | g/m² (oz/ft²) | 5,400 (17.70) | 5,700 (18.68) |
| Product Form                            | Planks | Width  | 177.8 (7.00)             | mm (in)       | 101.6 (4.00)  | 457.2 (18.0)  |
|                                         |        | Length | 1,220 (4,003)            | m (ft)        | 914 (3,000)   | 1,524 (5,000) |

**Table 6.** Product characteristics for the PVC Loose Lay 5.0mm flooring products.

| Characteristic                          |        |        | Description              |               |               |               |
|-----------------------------------------|--------|--------|--------------------------|---------------|---------------|---------------|
| Sustainable certifications              |        |        | FloorScore® SCS-FS-03863 |               |               |               |
| VOC emissions test method               |        |        | CA 01350                 |               |               |               |
| Characteristic                          |        |        | Average Value            | Unit          | Min Value     | Max Value     |
| Product thickness                       |        |        | 5.00 (0.20)              | mm (in)       | 4.90 (0.19)   | 5.13 (0.20)   |
| Wear layer thickness (where applicable) |        |        | 0.55 (0.02)              | mm (in)       | 0.10 (0.00)   | 0.70 (0.03)   |
| Product weight                          |        |        | 9,250 (30.31)            | g/m² (oz/ft²) | 9,250 (30.31) | 6,480 (21.24) |
| Product Form                            | Planks | Width  | 177.8 (7.00)             | mm (in)       | 101.6 (4.00)  | 457.2 (18.0)  |
|                                         |        | Length | 1,220 (4,003)            | m (ft)        | 914 (3,000)   | 1,524 (5,000) |

**Table 7.** Product characteristics for the PVC with IXPE Backing flooring products.

| Characteristic                          |        |        | Description   |                                        |               |               |
|-----------------------------------------|--------|--------|---------------|----------------------------------------|---------------|---------------|
| Sustainable certifications              |        |        | -             |                                        |               |               |
| VOC emissions test method               |        |        | CA 01350      |                                        |               |               |
| Characteristic                          |        |        | Average Value | Unit                                   | Min Value     | Max Value     |
| Product thickness                       |        |        | 4.50 (0.18)   | mm (in)                                | 4.40 (0.17)   | 4.63 (0.18)   |
| Wear layer thickness (where applicable) |        |        | 0.55 (0.02)   | mm (in)                                | 0.10 (0.00)   | 0.70 (0.03)   |
| Product weight                          |        |        | 5,650 (18.52) | g/m <sup>2</sup> (oz/ft <sup>2</sup> ) | 5,500 (18.02) | 5,800 (19.01) |
| Product Form                            | Planks | Width  | 177.8 (7.00)  | mm (in)                                | 101.6 (4.00)  | 457.2 (18.0)  |
|                                         |        | Length | 1,220 (4,003) | m (ft)                                 | 914 (3,000)   | 1,524 (5,000) |

**Table 8.** Product characteristics for the Click Composite Core w/ Cork Backing flooring products.

| Characteristic                          |        |        | Description              |                                        |               |               |
|-----------------------------------------|--------|--------|--------------------------|----------------------------------------|---------------|---------------|
| Sustainable certifications              |        |        | FloorScore® SCS-FS-03863 |                                        |               |               |
| VOC emissions test method               |        |        | CA 01350                 |                                        |               |               |
| Characteristic                          |        |        | Average Value            | Unit                                   | Min Value     | Max Value     |
| Product thickness                       |        |        | 7.50 (0.30)              | mm (in)                                | 7.50 (0.30)   | 10.00 (0.39)  |
| Wear layer thickness (where applicable) |        |        | 0.55 (0.02)              | mm (in)                                | 0.10 (0.00)   | 0.70 (0.03)   |
| Product weight                          |        |        | 7,350 (24.09)            | g/m <sup>2</sup> (oz/ft <sup>2</sup> ) | 7,350 (24.09) | 9,730 (31.89) |
| Product Form                            | Planks | Width  | 177.8 (7.00)             | mm (in)                                | 101.6 (4.00)  | 457.2 (18.0)  |
|                                         |        | Length | 1,220 (4,003)            | m (ft)                                 | 914 (3,000)   | 1,830 (6,004) |

**Table 9.** Product characteristics for the SPC Rigid w/ IXPE Backing flooring products.

| Characteristic                          |        |        | Description              |                                        |               |               |
|-----------------------------------------|--------|--------|--------------------------|----------------------------------------|---------------|---------------|
| Sustainable certifications              |        |        | FloorScore® SCS-FS-03863 |                                        |               |               |
| VOC emissions test method               |        |        | CA 01350                 |                                        |               |               |
| Characteristic                          |        |        | Average Value            | Unit                                   | Min Value     | Max Value     |
| Product thickness                       |        |        | 5.00 (0.20)              | mm (in)                                | 4.90 (0.19)   | 5.13 (0.20)   |
| Wear layer thickness (where applicable) |        |        | 0.55 (0.02)              | mm (in)                                | 0.70 (0.03)   | 0.10 (0.00)   |
| Product weight                          |        |        | 8,100 (26.54)            | g/m <sup>2</sup> (oz/ft <sup>2</sup> ) | 7,900 (25.89) | 8,360 (27.40) |
| Product Form                            | Planks | Width  | 177.8 (7.00)             | mm (in)                                | 152.4 (6.00)  | 254.0 (10.0)  |
|                                         |        | Length | 1,220 (4,003)            | m (ft)                                 | 914 (3,000)   | 1,524 (5,000) |

## 6. Additional Environmental Information

For additional information regarding the Bay Resource Group's environmental efforts, visit: [www.harbingerfloors.com](http://www.harbingerfloors.com)

## 7. Life Cycle Assessment

A cradle to grave life cycle assessment (LCA) was completed for this product group in accordance with ISO 14040, ISO 14044 and the NSF International Product Category Rule for Environmental Product Declarations for Flooring: Carpet, Resilient, Laminate, Ceramic, Wood (Version 2).



## 8. Functional Unit

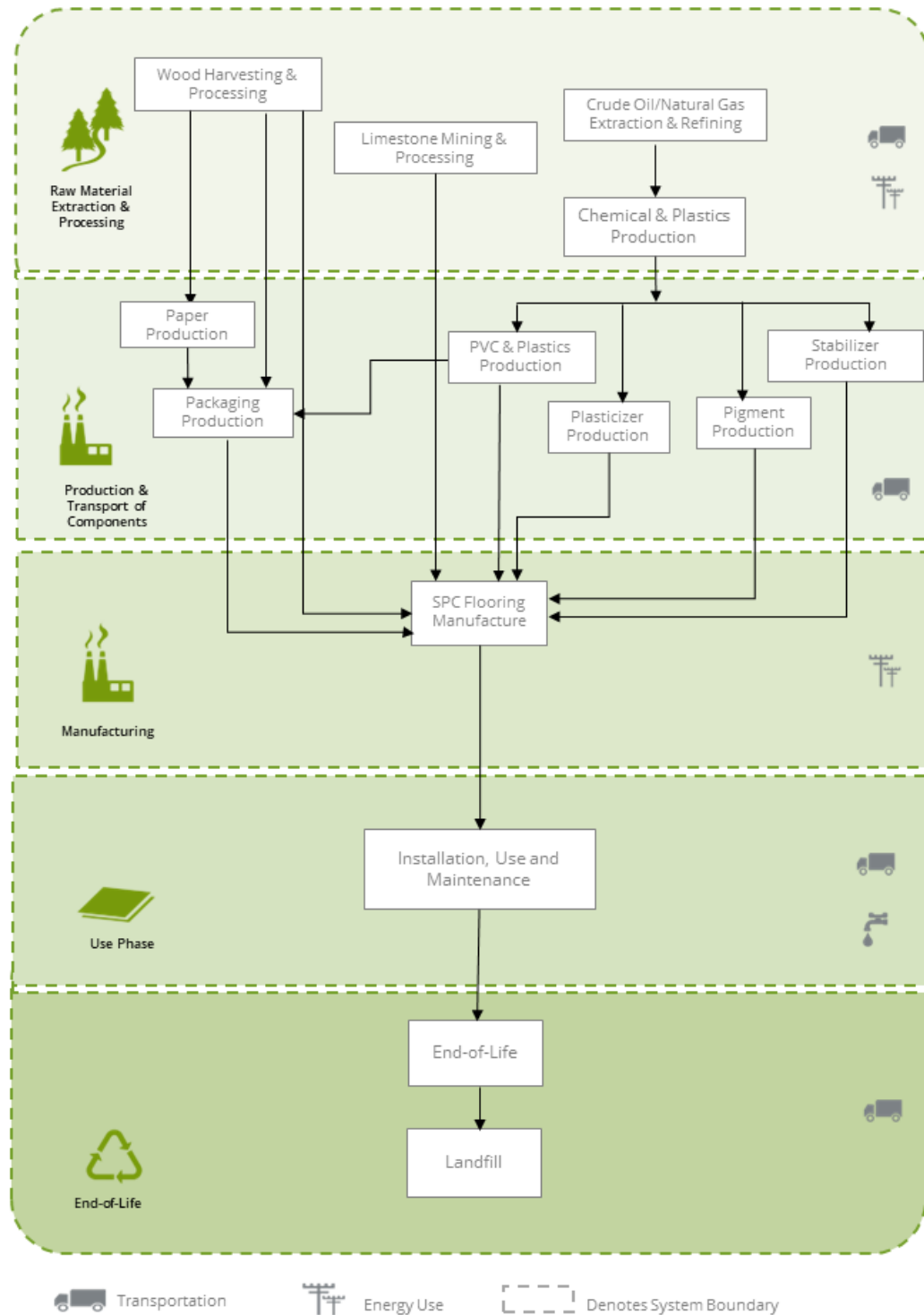
The functional unit is, according to the PCR, the total impact for the expected life of the building (60 years). But the service life is dependent on the product lifetime. The PCR consequently requires separate reporting of LCA results A) for 1 m<sup>2</sup> of floor covering - extraction/processing, manufacturing, delivery and installation and end of life, B) the average 1-year use stage, and C) for the 60 year life of the building as combined using A) and B), calculated from the reference service life (RSL) of the product.

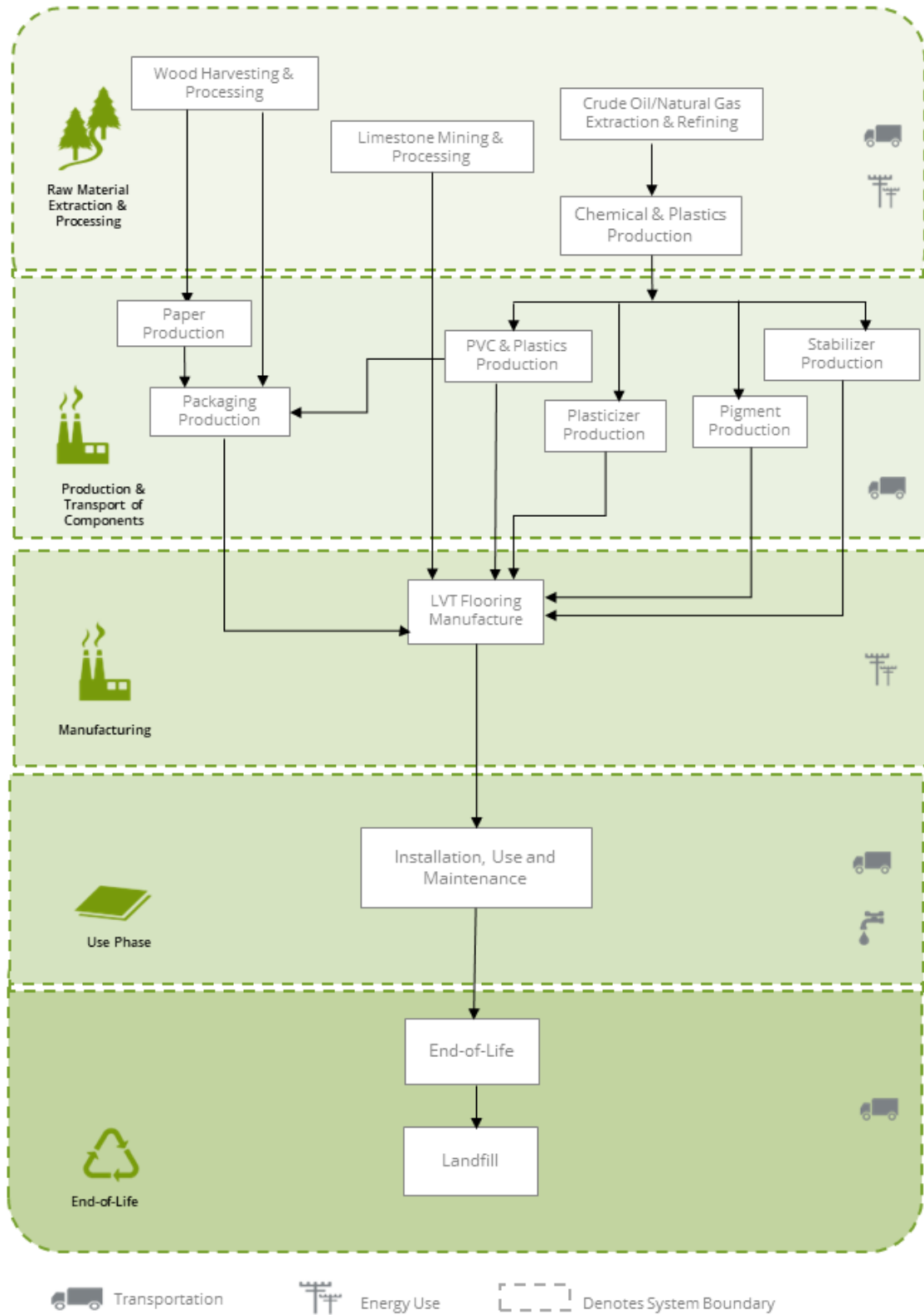
**Table 10.** *Reference Service Life (RSL) and reference flows for the flooring products.*

| Product Name                         | Reference Flow (kg/m <sup>2</sup> ) | Reference Service Life – RSL (years) |
|--------------------------------------|-------------------------------------|--------------------------------------|
| Vinyl Floor Tiles - 2mm              | 3.93                                | 20                                   |
| Vinyl Floor Tiles - 3mm              | 6.20                                | 25                                   |
| PVC Loose Lay                        | 10.3                                | 25                                   |
| PVC Rigid w/ IXPE Backing            | 6.03                                | 25                                   |
| Click Composite Core w/ Cork Backing | 10.6                                | 25                                   |
| SPC w/ IXPE Backing                  | 8.91                                | 25                                   |

## 9. Product Life Cycle Flow Diagram

The diagrams below present a representation of the most significant contributions to the life cycle of the flooring products. This includes resource extraction and processing, product manufacture, use and maintenance, and end-of-life.





## 10. Life Cycle Assessment Stages and Reported EPD Information

### Sourcing/Extraction Stage (raw material acquisition)

This stage includes extraction of virgin materials and reclamation of non-virgin feedstock. Resource use and emissions associated with both extraction of the raw materials and manufacture of flooring components are included.

### Manufacturing Stage

This stage includes all the relevant manufacturing processes and flows, including packaging. Production of capital goods, infrastructure, production of manufacturing equipment, and personnel-related activities are not included.

### Delivery and Installation Stage

#### *Delivery*

This stage includes the delivery of the flooring products to the point of installation. Modeling used in the life cycle assessment assumed an estimated average distribution distance to point of sale of distance of 10,659 km by ocean freighter and 936 km by diesel truck for all products.

#### *Installation*

The impacts associated with the product installation are assumed negligible. Approximately 4% of the product mass is assumed lost as waste during product installation which is landfilled. The VOC emissions associated with the installation, use and maintenance of the products are negligible.

#### *Waste*

Waste generated during product installation is disposed of in a landfill.

#### *Packaging*

**Table 11.** Packaging materials and amounts for the flooring products. Results are shown in kg per 1 m<sup>2</sup> flooring.

| Component              | Vinyl Floor Tiles - 2mm | Vinyl Floor Tiles - 3mm | PVC Loose Lay         | Click Composite Core w/ Cork Backing | SPC w/ IXPE Backing   | PVC Rigid w/ IXPE Backing |
|------------------------|-------------------------|-------------------------|-----------------------|--------------------------------------|-----------------------|---------------------------|
| Corrugated             | 5.57x10 <sup>-2</sup>   | 0.124                   | 0.124                 | 0.165                                | 0.124                 | 9.90x10 <sup>-2</sup>     |
|                        | 31%                     | 31%                     | 31%                   | 31%                                  | 31%                   | 31%                       |
| Plastic                | 2.72x10 <sup>-3</sup>   | 6.04x10 <sup>-3</sup>   | 6.04x10 <sup>-3</sup> | 8.06x10 <sup>-3</sup>                | 6.04x10 <sup>-3</sup> | 4.83x10 <sup>-3</sup>     |
|                        | 1.5%                    | 1.5%                    | 1.5%                  | 1.5%                                 | 1.5%                  | 1.5%                      |
| Wood                   | 0.124                   | 0.275                   | 0.275                 | 0.367                                | 0.275                 | 0.220                     |
|                        | 68%                     | 68%                     | 68%                   | 68%                                  | 68%                   | 68%                       |
| <b>Total Packaging</b> | <b>0.182</b>            | <b>0.405</b>            | <b>0.405</b>          | <b>0.540</b>                         | <b>0.405</b>          | <b>0.324</b>              |
|                        | <b>100%</b>             | <b>100%</b>             | <b>100%</b>           | <b>100%</b>                          | <b>100%</b>           | <b>100%</b>               |

## Use Stage

### *Cleaning and maintenance*

For the purposes of this assessment, average maintenance (moderate traffic levels) is presented based on typical installations as summarized in Table 12.

**Table 12.** *Cleaning and maintenance for flooring products.*

| Cleaning Process | Traffic Level                      |                                     |                                    | Energy & Resource Use         |
|------------------|------------------------------------|-------------------------------------|------------------------------------|-------------------------------|
|                  | Light - 500 traffics or less daily | Moderate - 500-1,000 traffics daily | Heavy – 1,000-2,500 traffics daily |                               |
| Dust mop         | Twice or more each week            | At least once daily                 | Daily                              | None                          |
| Damp mop         | Monthly                            | Weekly                              | Daily                              | Water; neutral cleaning agent |
| Machine cleaning | Monthly                            | Weekly                              | Daily                              | Electricity                   |

The parameters used to model the product maintenance are summarized in Table 13.

**Table 13.** *Maintenance parameters for the flooring products, per 1 m<sup>2</sup>.*

| Parameter                  | Unit                               | Value                                |
|----------------------------|------------------------------------|--------------------------------------|
| Maintenance process        | -                                  | Damp mopping                         |
| Net freshwater consumption | m <sup>3</sup> /m <sup>2</sup> /yr | 0.0058                               |
| Cleaning agent             | kg/m <sup>2</sup> /yr              | 0.0119                               |
| Maintenance process        | -                                  | Machine cleaning                     |
| Electricity                | kWh/m <sup>2</sup> /yr             | 0.022                                |
| Further assumptions        | -                                  | Moderate traffic; weekly maintenance |

## End-of-Life Stage

At end-of-life, the product is assumed to be disposed in a landfill. Additionally, 10% of the packaging materials are recycled at end-of-life while materials not recycled are landfilled.

Transportation for end-of-life scenarios was modeled assuming a distance of 161 km from the point of product use to a landfill, material recovery center, or waste incinerator. Ecoinvent datasets are used to model the impacts associated with incineration and landfilling, which does not include energy recovery from landfill gas.

## 11. Life Cycle Inventory

The following aggregated inventory flows are included in the LCA, in addition to the LCIA and inventory flow requirements specified by the PCR:

- Use of renewable material resources
- Consumption of freshwater
- Hazardous Waste
- Non-hazardous Waste

All results are calculated using the OpenLCA v1.11 model using primary and secondary inventory data. Classification for Use of Renewable Material Resources is based on review of elementary flows and resources considered renewable on a human time scale. Elementary flows related to use of wood, minerals, and land occupation were not included. Water consumption is also not included as this is reported separately. Based on this classification process, no renewable material resources are estimated for the product system under consideration.

**Table 14.** Results for aggregated inventory flows, shown in kg per 1 m<sup>2</sup> of flooring maintained for 60 years.

| Parameter                           | Vinyl Floor Tiles - 2mm | Vinyl Floor Tiles - 3mm | PVC Loose Lay         | Click Composite Core w/ Cork Backing | SPC w/ IXPE Backing   | PVC Rigid w/ IXPE Backing |
|-------------------------------------|-------------------------|-------------------------|-----------------------|--------------------------------------|-----------------------|---------------------------|
| Landfill Avoidance (Recycling) (kg) | 5.47x10 <sup>-2</sup>   | 9.72x10 <sup>-2</sup>   | 9.72x10 <sup>-2</sup> | 0.130                                | 9.72x10 <sup>-2</sup> | 7.77x10 <sup>-2</sup>     |
| Hazardous Waste (kg)                | 1.26x10 <sup>-3</sup>   | 1.47x10 <sup>-3</sup>   | 2.35x10 <sup>-3</sup> | 3.39x10 <sup>-3</sup>                | 1.87x10 <sup>-3</sup> | 1.49x10 <sup>-3</sup>     |
| Non-hazardous Waste (kg)            | 18.9                    | 23.3                    | 38.0                  | 42.9                                 | 33.3                  | 22.9                      |
| Use of renewable materials (kg)     | 0.00                    | 0.00                    | 0.00                  | 0.00                                 | 0.00                  | 0.00                      |

## 12. Life Cycle Impact Assessment

Life cycle impact assessment is the process of converting the life cycle inventory results into a representation of environmental and human health impacts. For example, emissions such as carbon dioxide, methane, and nitrous oxide (inventory) together contribute to climate change (impact assessment). The impact assessment for the EPD is conducted in accordance with requirements of the PCR. Impact category indicators are estimated using the CM-IA characterization method. Aggregated inventory flows for energy use and wastes are also calculated. The LCIA and inventory flow results are calculated using OpenLCA software.

**Table 15.** Table A: Cradle-to-install and end-of-life. Results reported in MJ are calculated using lower heating values. (Vinyl Floor Tiles - 2mm)

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 5.15                  | 0.852                 | 1.63                      | 2.61                  | 10.2                  |
|                                             | 50%                   | 8.3%                  | 16%                       | 25%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 1.97x10 <sup>-2</sup> | 4.04x10 <sup>-4</sup> | 1.40x10 <sup>-2</sup>     | 3.72x10 <sup>-3</sup> | 3.78x10 <sup>-2</sup> |
|                                             | 52%                   | 1.1%                  | 37%                       | 9.9%                  | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 6.51x10 <sup>-3</sup> | 2.29x10 <sup>-3</sup> | 3.00x10 <sup>-3</sup>     | 1.07x10 <sup>-2</sup> | 2.25x10 <sup>-2</sup> |
|                                             | 29%                   | 10%                   | 13%                       | 47%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 2.07x10 <sup>-3</sup> | 1.42x10 <sup>-4</sup> | 5.37x10 <sup>-4</sup>     | 5.24x10 <sup>-4</sup> | 3.27x10 <sup>-3</sup> |
|                                             | 63%                   | 4.3%                  | 16%                       | 16%                   | 100%                  |
| ODP (kg CFC-11 eq)                          | 3.13x10 <sup>-6</sup> | 5.74x10 <sup>-9</sup> | 1.41x10 <sup>-7</sup>     | 1.15x10 <sup>-8</sup> | 3.29x10 <sup>-6</sup> |
|                                             | 95%                   | 0.17%                 | 4.3%                      | 0.35%                 | 100%                  |
| ADPF (MJ eq)                                | 105                   | 4.77                  | 20.6                      | 11.9                  | 143                   |
|                                             | 74%                   | 3.3%                  | 14%                       | 8.4%                  | 100%                  |
| ADPE (kg Sb eq)                             | 5.02x10 <sup>-5</sup> | 3.69x10 <sup>-7</sup> | 4.84x10 <sup>-6</sup>     | 7.33x10 <sup>-7</sup> | 5.61x10 <sup>-5</sup> |
|                                             | 89%                   | 0.66%                 | 8.6%                      | 1.3%                  | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |
| PED, non-renewable (MJ eq)                  | 112                   | 4.82                  | 21.1                      | 12.0                  | 150                   |
|                                             | 75%                   | 3.2%                  | 14%                       | 8%                    | 100%                  |
| PED, renewable (MJ eq)                      | 8.49                  | 5.26x10 <sup>-2</sup> | 0.518                     | 9.14x10 <sup>-2</sup> | 9.15                  |
|                                             | 93%                   | 0.57%                 | 5.7%                      | 1%                    | 100%                  |
| Water Use (m <sup>3</sup> )                 | 0.345                 | 2.57x10 <sup>-3</sup> | 2.44x10 <sup>-2</sup>     | 6.23x10 <sup>-3</sup> | 0.379                 |
|                                             | 91%                   | 0.68%                 | 6.4%                      | 1.6%                  | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 1.82x10 <sup>-2</sup>     | 0.00                  | 1.82x10 <sup>-2</sup> |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 1.94x10 <sup>-4</sup> | 2.30x10 <sup>-5</sup> | 1.07x10 <sup>-4</sup>     | 8.07x10 <sup>-5</sup> | 4.05x10 <sup>-4</sup> |
|                                             | 48%                   | 5.7%                  | 26%                       | 20%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 0.672                 | 0.845                 | 0.894                     | 3.82                  | 6.23                  |
|                                             | 11%                   | 14%                   | 14%                       | 61%                   | 100%                  |

**Table 16.** Table B: Use phase (1-year average). Results reported in MJ are calculated using lower heating values. (Vinyl Floor Tiles - 2mm)

| Impact Category                             | Use                    |
|---------------------------------------------|------------------------|
| <b>CML</b>                                  |                        |
| GWP (kg CO <sub>2</sub> eq)                 | 4.03x10 <sup>-2</sup>  |
| AP (kg SO <sub>2</sub> eq)                  | 1.72x10 <sup>-4</sup>  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 6.01x10 <sup>-5</sup>  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 9.54x10 <sup>-6</sup>  |
| ODP (kg CFC-11 eq)                          | 2.95x10 <sup>-10</sup> |
| ADPF (MJ eq)                                | 0.892                  |
| ADPE (kg Sb eq)                             | 3.45x10 <sup>-7</sup>  |
| <b>Resources</b>                            |                        |
| PED, non-renewable (MJ eq)                  | 1.01                   |
| PED, renewable (MJ eq)                      | 6.26x10 <sup>-2</sup>  |
| Water Use (m <sup>3</sup> )                 | 9.14x10 <sup>-3</sup>  |
| Use of renewable materials (kg)             | 0.00                   |
| <b>Wastes</b>                               |                        |
| Landfill Avoidance (Recycling) (kg)         | 0.00                   |
| Hazardous Waste (kg)                        | 8.45x10 <sup>-7</sup>  |
| Non-hazardous Waste (kg)                    | 2.99x10 <sup>-3</sup>  |

**Table 17. Table C: Cradle-to-grave. Results reported in MJ are calculated using lower heating values. (Vinyl Floor Tiles - 2mm)**

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | Use                   | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 15.4                  | 2.56                  | 4.89                      | 2.42                  | 7.83                  | 33.1                  |
|                                             | 47%                   | 7.7%                  | 15%                       | 7.3%                  | 24%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 5.92x10 <sup>-2</sup> | 1.21x10 <sup>-3</sup> | 4.19x10 <sup>-2</sup>     | 1.03x10 <sup>-2</sup> | 1.12x10 <sup>-2</sup> | 0.124                 |
|                                             | 48%                   | 0.98%                 | 34%                       | 8.4%                  | 9%                    | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 1.95x10 <sup>-2</sup> | 6.86x10 <sup>-3</sup> | 8.99x10 <sup>-3</sup>     | 3.61x10 <sup>-3</sup> | 3.20x10 <sup>-2</sup> | 7.10x10 <sup>-2</sup> |
|                                             | 28%                   | 9.7%                  | 13%                       | 5.1%                  | 45%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 6.22x10 <sup>-3</sup> | 4.26x10 <sup>-4</sup> | 1.61x10 <sup>-3</sup>     | 5.72x10 <sup>-4</sup> | 1.57x10 <sup>-3</sup> | 1.04x10 <sup>-2</sup> |
|                                             | 60%                   | 4.1%                  | 15%                       | 5.5%                  | 15%                   | 100%                  |
| ODP (kg CFC-11 eq)                          | 9.40x10 <sup>-6</sup> | 1.72x10 <sup>-8</sup> | 4.24x10 <sup>-7</sup>     | 1.77x10 <sup>-8</sup> | 3.46x10 <sup>-8</sup> | 9.89x10 <sup>-6</sup> |
|                                             | 95%                   | 0.17%                 | 4.3%                      | 0.18%                 | 0.35%                 | 100%                  |
| ADPF (MJ eq)                                | 316                   | 14.3                  | 61.9                      | 53.5                  | 35.8                  | 481                   |
|                                             | 66%                   | 3%                    | 13%                       | 11%                   | 7.4%                  | 100%                  |
| ADPE (kg Sb eq)                             | 1.51x10 <sup>-4</sup> | 1.11x10 <sup>-6</sup> | 1.45x10 <sup>-5</sup>     | 2.07x10 <sup>-5</sup> | 2.20x10 <sup>-6</sup> | 1.89x10 <sup>-4</sup> |
|                                             | 80%                   | 0.58%                 | 7.7%                      | 11%                   | 1.2%                  | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |                       |
| PED, non-renewable (MJ eq)                  | 336                   | 14.5                  | 63.3                      | 60.7                  | 36.1                  | 511                   |
|                                             | 66%                   | 2.8%                  | 12%                       | 12%                   | 7.1%                  | 100%                  |
| PED, renewable (MJ eq)                      | 25.5                  | 0.158                 | 1.55                      | 3.76                  | 0.274                 | 31.2                  |
|                                             | 82%                   | 0.51%                 | 5%                        | 12%                   | 0.88%                 | 100%                  |
| Water Use (m <sup>3</sup> )                 | 1.04                  | 7.72x10 <sup>-3</sup> | 7.32x10 <sup>-2</sup>     | 0.549                 | 1.87x10 <sup>-2</sup> | 1.68                  |
|                                             | 62%                   | 0.46%                 | 4.3%                      | 33%                   | 1.1%                  | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 5.47x10 <sup>-2</sup>     | 0.00                  | 0.00                  | 5.47x10 <sup>-2</sup> |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 5.82x10 <sup>-4</sup> | 6.90x10 <sup>-5</sup> | 3.20x10 <sup>-4</sup>     | 5.07x10 <sup>-5</sup> | 2.42x10 <sup>-4</sup> | 1.26x10 <sup>-3</sup> |
|                                             | 46%                   | 5.5%                  | 25%                       | 4%                    | 19%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 2.02                  | 2.53                  | 2.68                      | 0.180                 | 11.5                  | 18.9                  |
|                                             | 11%                   | 13%                   | 14%                       | 0.95%                 | 61%                   | 100%                  |

**Table 18.** Table A: Cradle-to-install and end-of-life. Results reported in MJ are calculated using lower heating values. (Vinyl Floor Tiles - 3mm)

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 7.06                  | 1.12                  | 2.60                      | 4.18                  | 15.0                  |
|                                             | 47%                   | 7.5%                  | 17%                       | 28%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 2.69x10 <sup>-2</sup> | 4.63x10 <sup>-4</sup> | 2.19x10 <sup>-2</sup>     | 5.77x10 <sup>-3</sup> | 5.51x10 <sup>-2</sup> |
|                                             | 49%                   | 0.84%                 | 40%                       | 10%                   | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 8.98x10 <sup>-3</sup> | 3.40x10 <sup>-3</sup> | 4.96x10 <sup>-3</sup>     | 1.64x10 <sup>-2</sup> | 3.37x10 <sup>-2</sup> |
|                                             | 27%                   | 10%                   | 15%                       | 49%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 2.88x10 <sup>-3</sup> | 2.01x10 <sup>-4</sup> | 8.46x10 <sup>-4</sup>     | 8.42x10 <sup>-4</sup> | 4.77x10 <sup>-3</sup> |
|                                             | 60%                   | 4.2%                  | 18%                       | 18%                   | 100%                  |
| ODP (kg CFC-11 eq)                          | 4.22x10 <sup>-6</sup> | 5.87x10 <sup>-9</sup> | 1.94x10 <sup>-7</sup>     | 1.78x10 <sup>-8</sup> | 4.44x10 <sup>-6</sup> |
|                                             | 95%                   | 0.13%                 | 4.4%                      | 0.4%                  | 100%                  |
| ADPF (MJ eq)                                | 145                   | 4.90                  | 31.9                      | 18.5                  | 200                   |
|                                             | 72%                   | 2.5%                  | 16%                       | 9.2%                  | 100%                  |
| ADPE (kg Sb eq)                             | 6.62x10 <sup>-5</sup> | 3.96x10 <sup>-7</sup> | 7.14x10 <sup>-6</sup>     | 1.14x10 <sup>-6</sup> | 7.49x10 <sup>-5</sup> |
|                                             | 88%                   | 0.53%                 | 9.5%                      | 1.5%                  | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |
| PED, non-renewable (MJ eq)                  | 154                   | 4.97                  | 32.6                      | 18.6                  | 210                   |
|                                             | 73%                   | 2.4%                  | 16%                       | 8.9%                  | 100%                  |
| PED, renewable (MJ eq)                      | 15.2                  | 5.95x10 <sup>-2</sup> | 0.890                     | 0.144                 | 16.3                  |
|                                             | 93%                   | 0.37%                 | 5.5%                      | 0.89%                 | 100%                  |
| Water Use (m <sup>3</sup> )                 | 0.467                 | 2.91x10 <sup>-3</sup> | 3.55x10 <sup>-2</sup>     | 9.76x10 <sup>-3</sup> | 0.515                 |
|                                             | 91%                   | 0.56%                 | 6.9%                      | 1.9%                  | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 4.05x10 <sup>-2</sup>     | 0.00                  | 4.05x10 <sup>-2</sup> |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 2.72x10 <sup>-4</sup> | 2.39x10 <sup>-5</sup> | 1.69x10 <sup>-4</sup>     | 1.25x10 <sup>-4</sup> | 5.90x10 <sup>-4</sup> |
|                                             | 46%                   | 4.1%                  | 29%                       | 21%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 0.941                 | 1.28                  | 1.51                      | 5.90                  | 9.63                  |
|                                             | 9.8%                  | 13%                   | 16%                       | 61%                   | 100%                  |

**Table 19.** Table B: Use phase (1-year average). Results reported in MJ are calculated using lower heating values. (Vinyl Floor Tiles - 3mm)

| Impact Category                             | Use                    |
|---------------------------------------------|------------------------|
| <b>CML</b>                                  |                        |
| GWP (kg CO <sub>2</sub> eq)                 | 4.03x10 <sup>-2</sup>  |
| AP (kg SO <sub>2</sub> eq)                  | 1.72x10 <sup>-4</sup>  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 6.01x10 <sup>-5</sup>  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 9.54x10 <sup>-6</sup>  |
| ODP (kg CFC-11 eq)                          | 2.95x10 <sup>-10</sup> |
| ADPF (MJ eq)                                | 0.892                  |
| ADPE (kg Sb eq)                             | 3.45x10 <sup>-7</sup>  |
| <b>Resources</b>                            |                        |
| PED, non-renewable (MJ eq)                  | 1.01                   |
| PED, renewable (MJ eq)                      | 6.26x10 <sup>-2</sup>  |
| Water Use (m <sup>3</sup> )                 | 9.14x10 <sup>-3</sup>  |
| Use of renewable materials (kg)             | 0.00                   |
| <b>Wastes</b>                               |                        |
| Landfill Avoidance (Recycling) (kg)         | 0.00                   |
| Hazardous Waste (kg)                        | 8.45x10 <sup>-7</sup>  |
| Non-hazardous Waste (kg)                    | 2.99x10 <sup>-3</sup>  |

**Table 20.** Table C: Cradle-to-grave. Results reported in MJ are calculated using lower heating values. **(Vinyl Floor Tiles - 3mm)**

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | Use                   | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 17.0                  | 2.70                  | 6.24                      | 2.42                  | 10.0                  | 38.3                  |
|                                             | 44%                   | 7%                    | 16%                       | 6.3%                  | 26%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 6.46x10 <sup>-2</sup> | 1.11x10 <sup>-3</sup> | 5.27x10 <sup>-2</sup>     | 1.03x10 <sup>-2</sup> | 1.39x10 <sup>-2</sup> | 0.143                 |
|                                             | 45%                   | 0.78%                 | 37%                       | 7.3%                  | 9.7%                  | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 2.16x10 <sup>-2</sup> | 8.15x10 <sup>-3</sup> | 1.19x10 <sup>-2</sup>     | 3.61x10 <sup>-3</sup> | 3.93x10 <sup>-2</sup> | 8.46x10 <sup>-2</sup> |
|                                             | 25%                   | 9.6%                  | 14%                       | 4.3%                  | 47%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 6.90x10 <sup>-3</sup> | 4.81x10 <sup>-4</sup> | 2.03x10 <sup>-3</sup>     | 5.72x10 <sup>-4</sup> | 2.02x10 <sup>-3</sup> | 1.20x10 <sup>-2</sup> |
|                                             | 57%                   | 4%                    | 17%                       | 4.8%                  | 17%                   | 100%                  |
| ODP (kg CFC-11 eq)                          | 1.01x10 <sup>-5</sup> | 1.41x10 <sup>-8</sup> | 4.66x10 <sup>-7</sup>     | 1.77x10 <sup>-8</sup> | 4.28x10 <sup>-8</sup> | 1.07x10 <sup>-5</sup> |
|                                             | 95%                   | 0.13%                 | 4.4%                      | 0.17%                 | 0.4%                  | 100%                  |
| ADPF (MJ eq)                                | 347                   | 11.8                  | 76.7                      | 53.5                  | 44.3                  | 533                   |
|                                             | 65%                   | 2.2%                  | 14%                       | 10%                   | 8.3%                  | 100%                  |
| ADPE (kg Sb eq)                             | 1.59x10 <sup>-4</sup> | 9.50x10 <sup>-7</sup> | 1.71x10 <sup>-5</sup>     | 2.07x10 <sup>-5</sup> | 2.74x10 <sup>-6</sup> | 2.01x10 <sup>-4</sup> |
|                                             | 79%                   | 0.47%                 | 8.5%                      | 10%                   | 1.4%                  | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |                       |
| PED, non-renewable (MJ eq)                  | 369                   | 11.9                  | 78.3                      | 60.7                  | 44.7                  | 564                   |
|                                             | 65%                   | 2.1%                  | 14%                       | 11%                   | 7.9%                  | 100%                  |
| PED, renewable (MJ eq)                      | 36.5                  | 0.143                 | 2.14                      | 3.76                  | 0.346                 | 42.9                  |
|                                             | 85%                   | 0.33%                 | 5%                        | 8.8%                  | 0.81%                 | 100%                  |
| Water Use (m <sup>3</sup> )                 | 1.12                  | 6.98x10 <sup>-3</sup> | 8.53x10 <sup>-2</sup>     | 0.549                 | 2.34x10 <sup>-2</sup> | 1.79                  |
|                                             | 63%                   | 0.39%                 | 4.8%                      | 31%                   | 1.3%                  | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 9.72x10 <sup>-2</sup>     | 0.00                  | 0.00                  | 9.72x10 <sup>-2</sup> |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 6.54x10 <sup>-4</sup> | 5.74x10 <sup>-5</sup> | 4.05x10 <sup>-4</sup>     | 5.07x10 <sup>-5</sup> | 3.00x10 <sup>-4</sup> | 1.47x10 <sup>-3</sup> |
|                                             | 45%                   | 3.9%                  | 28%                       | 3.5%                  | 20%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 2.26                  | 3.07                  | 3.61                      | 0.180                 | 14.2                  | 23.3                  |
|                                             | 9.7%                  | 13%                   | 16%                       | 0.77%                 | 61%                   | 100%                  |

**Table 21.** Table A: Cradle-to-install and end-of-life. Results reported in MJ are calculated using lower heating values. (PVC Loose Lay)

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 11.3                  | 1.59                  | 4.10                      | 7.46                  | 24.5                  |
|                                             | 46%                   | 6.5%                  | 17%                       | 30%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 4.26x10 <sup>-2</sup> | 5.64x10 <sup>-4</sup> | 3.60x10 <sup>-2</sup>     | 9.88x10 <sup>-3</sup> | 8.91x10 <sup>-2</sup> |
|                                             | 48%                   | 0.63%                 | 40%                       | 11%                   | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 1.39x10 <sup>-2</sup> | 5.30x10 <sup>-3</sup> | 7.51x10 <sup>-3</sup>     | 2.78x10 <sup>-2</sup> | 5.45x10 <sup>-2</sup> |
|                                             | 26%                   | 9.7%                  | 14%                       | 51%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 5.22x10 <sup>-3</sup> | 3.01x10 <sup>-4</sup> | 1.38x10 <sup>-3</sup>     | 1.51x10 <sup>-3</sup> | 8.41x10 <sup>-3</sup> |
|                                             | 62%                   | 3.6%                  | 16%                       | 18%                   | 100%                  |
| ODP (kg CFC-11 eq)                          | 7.17x10 <sup>-6</sup> | 6.09x10 <sup>-9</sup> | 3.28x10 <sup>-7</sup>     | 3.05x10 <sup>-8</sup> | 7.54x10 <sup>-6</sup> |
|                                             | 95%                   | 0.081%                | 4.4%                      | 0.4%                  | 100%                  |
| ADPF (MJ eq)                                | 240                   | 5.14                  | 52.0                      | 31.5                  | 329                   |
|                                             | 73%                   | 1.6%                  | 16%                       | 9.6%                  | 100%                  |
| ADPE (kg Sb eq)                             | 1.01x10 <sup>-4</sup> | 4.43x10 <sup>-7</sup> | 1.14x10 <sup>-5</sup>     | 1.97x10 <sup>-6</sup> | 1.15x10 <sup>-4</sup> |
|                                             | 88%                   | 0.38%                 | 9.9%                      | 1.7%                  | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |
| PED, non-renewable (MJ eq)                  | 255                   | 5.23                  | 53.1                      | 31.8                  | 345                   |
|                                             | 74%                   | 1.5%                  | 15%                       | 9.2%                  | 100%                  |
| PED, renewable (MJ eq)                      | 18.4                  | 7.16x10 <sup>-2</sup> | 1.20                      | 0.253                 | 19.9                  |
|                                             | 92%                   | 0.36%                 | 6%                        | 1.3%                  | 100%                  |
| Water Use (m <sup>3</sup> )                 | 0.724                 | 3.48x10 <sup>-3</sup> | 5.64x10 <sup>-2</sup>     | 1.69x10 <sup>-2</sup> | 0.801                 |
|                                             | 90%                   | 0.43%                 | 7%                        | 2.1%                  | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 4.05x10 <sup>-2</sup>     | 0.00                  | 4.05x10 <sup>-2</sup> |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 4.44x10 <sup>-4</sup> | 2.55x10 <sup>-5</sup> | 2.73x10 <sup>-4</sup>     | 2.13x10 <sup>-4</sup> | 9.56x10 <sup>-4</sup> |
|                                             | 46%                   | 2.7%                  | 29%                       | 22%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 1.43                  | 2.02                  | 2.25                      | 10.1                  | 15.8                  |
|                                             | 9.1%                  | 13%                   | 14%                       | 64%                   | 100%                  |

**Table 22.** Table B: Use phase (1-year average). Results reported in MJ are calculated using lower heating values. (PVC Loose Lay)

| Impact Category                             | Use                    |
|---------------------------------------------|------------------------|
| <b>CML</b>                                  |                        |
| GWP (kg CO <sub>2</sub> eq)                 | 4.03x10 <sup>-2</sup>  |
| AP (kg SO <sub>2</sub> eq)                  | 1.72x10 <sup>-4</sup>  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 6.01x10 <sup>-5</sup>  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 9.54x10 <sup>-6</sup>  |
| ODP (kg CFC-11 eq)                          | 2.95x10 <sup>-10</sup> |
| ADPF (MJ eq)                                | 0.892                  |
| ADPE (kg Sb eq)                             | 3.45x10 <sup>-7</sup>  |
| <b>Resources</b>                            |                        |
| PED, non-renewable (MJ eq)                  | 1.01                   |
| PED, renewable (MJ eq)                      | 6.26x10 <sup>-2</sup>  |
| Water Use (m <sup>3</sup> )                 | 9.14x10 <sup>-3</sup>  |
| Use of renewable materials (kg)             | 0.00                   |
| <b>Wastes</b>                               |                        |
| Landfill Avoidance (Recycling) (kg)         | 0.00                   |
| Hazardous Waste (kg)                        | 8.45x10 <sup>-7</sup>  |
| Non-hazardous Waste (kg)                    | 2.99x10 <sup>-3</sup>  |

**Table 23.** Table C: Cradle-to-grave. Results reported in MJ are calculated using lower heating values. **(PVC Loose Lay)**

| Impact Category                             | Sourcing/<br>Extraction | Manufacturing         | Delivery and<br>Installation | Use                   | End of Life           | Total                 |
|---------------------------------------------|-------------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                         |                       |                              |                       |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 27.2                    | 3.82                  | 9.85                         | 2.42                  | 17.9                  | 61.1                  |
|                                             | 44%                     | 6.2%                  | 16%                          | 4%                    | 29%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 0.102                   | 1.35x10 <sup>-3</sup> | 8.65x10 <sup>-2</sup>        | 1.03x10 <sup>-2</sup> | 2.37x10 <sup>-2</sup> | 0.224                 |
|                                             | 46%                     | 0.6%                  | 39%                          | 4.6%                  | 11%                   | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 3.34x10 <sup>-2</sup>   | 1.27x10 <sup>-2</sup> | 1.80x10 <sup>-2</sup>        | 3.61x10 <sup>-3</sup> | 6.66x10 <sup>-2</sup> | 0.134                 |
|                                             | 25%                     | 9.5%                  | 13%                          | 2.7%                  | 50%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 1.25x10 <sup>-2</sup>   | 7.23x10 <sup>-4</sup> | 3.32x10 <sup>-3</sup>        | 5.72x10 <sup>-4</sup> | 3.62x10 <sup>-3</sup> | 2.08x10 <sup>-2</sup> |
|                                             | 60%                     | 3.5%                  | 16%                          | 2.8%                  | 17%                   | 100%                  |
| ODP (kg CFC-11 eq)                          | 1.72x10 <sup>-5</sup>   | 1.46x10 <sup>-8</sup> | 7.87x10 <sup>-7</sup>        | 1.77x10 <sup>-8</sup> | 7.31x10 <sup>-8</sup> | 1.81x10 <sup>-5</sup> |
|                                             | 95%                     | 0.081%                | 4.3%                         | 0.098%                | 0.4%                  | 100%                  |
| ADPF (MJ eq)                                | 576                     | 12.3                  | 125                          | 53.5                  | 75.6                  | 842                   |
|                                             | 68%                     | 1.5%                  | 15%                          | 6.4%                  | 9%                    | 100%                  |
| ADPE (kg Sb eq)                             | 2.43x10 <sup>-4</sup>   | 1.06x10 <sup>-6</sup> | 2.74x10 <sup>-5</sup>        | 2.07x10 <sup>-5</sup> | 4.73x10 <sup>-6</sup> | 2.97x10 <sup>-4</sup> |
|                                             | 82%                     | 0.36%                 | 9.2%                         | 7%                    | 1.6%                  | 100%                  |
| <b>Resources</b>                            |                         |                       |                              |                       |                       |                       |
| PED, non-renewable (MJ eq)                  | 611                     | 12.5                  | 127                          | 60.7                  | 76.4                  | 888                   |
|                                             | 69%                     | 1.4%                  | 14%                          | 6.8%                  | 8.6%                  | 100%                  |
| PED, renewable (MJ eq)                      | 44.1                    | 0.172                 | 2.87                         | 3.76                  | 0.606                 | 51.5                  |
|                                             | 86%                     | 0.33%                 | 5.6%                         | 7.3%                  | 1.2%                  | 100%                  |
| Water Use (m <sup>3</sup> )                 | 1.74                    | 8.34x10 <sup>-3</sup> | 0.135                        | 0.549                 | 4.06x10 <sup>-2</sup> | 2.47                  |
|                                             | 70%                     | 0.34%                 | 5.5%                         | 22%                   | 1.6%                  | 100%                  |
| Use of renewable materials (kg)             | 0.00                    | 0.00                  | 0.00                         | 0.00                  | 0.00                  | 0.00                  |
|                                             | 0%                      | 0%                    | 0%                           | 0%                    | 0%                    | 0%                    |
| <b>Wastes</b>                               |                         |                       |                              |                       |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                    | 0.00                  | 9.72x10 <sup>-2</sup>        | 0.00                  | 0.00                  | 9.72x10 <sup>-2</sup> |
|                                             | 0%                      | 0%                    | 100%                         | 0%                    | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 1.07x10 <sup>-3</sup>   | 6.12x10 <sup>-5</sup> | 6.56x10 <sup>-4</sup>        | 5.07x10 <sup>-5</sup> | 5.12x10 <sup>-4</sup> | 2.35x10 <sup>-3</sup> |
|                                             | 45%                     | 2.6%                  | 28%                          | 2.2%                  | 22%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 3.43                    | 4.86                  | 5.41                         | 0.180                 | 24.1                  | 38.0                  |
|                                             | 9%                      | 13%                   | 14%                          | 0.47%                 | 63%                   | 100%                  |



**Table 24.** Table A: Cradle-to-install and end-of-life. Results reported in MJ are calculated using lower heating values. **(Click Composite Core w/ Cork Backing)**

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 24.1                  | 1.64                  | 4.80                      | 4.62                  | 35.1                  |
|                                             | 69%                   | 4.7%                  | 14%                       | 13%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 9.21x10 <sup>-2</sup> | 5.74x10 <sup>-4</sup> | 3.91x10 <sup>-2</sup>     | 9.66x10 <sup>-3</sup> | 0.141                 |
|                                             | 65%                   | 0.41%                 | 28%                       | 6.8%                  | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 3.15x10 <sup>-2</sup> | 5.48x10 <sup>-3</sup> | 8.72x10 <sup>-3</sup>     | 2.98x10 <sup>-2</sup> | 7.55x10 <sup>-2</sup> |
|                                             | 42%                   | 7.3%                  | 12%                       | 39%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 6.59x10 <sup>-3</sup> | 3.11x10 <sup>-4</sup> | 1.49x10 <sup>-3</sup>     | 8.86x10 <sup>-4</sup> | 9.28x10 <sup>-3</sup> |
|                                             | 71%                   | 3.4%                  | 16%                       | 9.5%                  | 100%                  |
| ODP (kg CFC-11 eq)                          | 1.06x10 <sup>-5</sup> | 6.11x10 <sup>-9</sup> | 4.68x10 <sup>-7</sup>     | 3.05x10 <sup>-8</sup> | 1.11x10 <sup>-5</sup> |
|                                             | 95%                   | 0.055%                | 4.2%                      | 0.27%                 | 100%                  |
| ADPF (MJ eq)                                | 481                   | 5.17                  | 63.2                      | 31.6                  | 581                   |
|                                             | 83%                   | 0.89%                 | 11%                       | 5.4%                  | 100%                  |
| ADPE (kg Sb eq)                             | 2.26x10 <sup>-4</sup> | 4.47x10 <sup>-7</sup> | 1.67x10 <sup>-5</sup>     | 1.80x10 <sup>-6</sup> | 2.45x10 <sup>-4</sup> |
|                                             | 92%                   | 0.18%                 | 6.8%                      | 0.73%                 | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |
| PED, non-renewable (MJ eq)                  | 515                   | 5.25                  | 65.1                      | 31.8                  | 618                   |
|                                             | 83%                   | 0.85%                 | 11%                       | 5.2%                  | 100%                  |
| PED, renewable (MJ eq)                      | 109                   | 7.27x10 <sup>-2</sup> | 4.85                      | 0.196                 | 115                   |
|                                             | 96%                   | 0.063%                | 4.2%                      | 0.17%                 | 100%                  |
| Water Use (m <sup>3</sup> )                 | 1.79                  | 3.53x10 <sup>-3</sup> | 0.100                     | 1.46x10 <sup>-2</sup> | 1.91                  |
|                                             | 94%                   | 0.18%                 | 5.2%                      | 0.76%                 | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 5.40x10 <sup>-2</sup>     | 0.00                  | 5.40x10 <sup>-2</sup> |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 8.55x10 <sup>-4</sup> | 2.57x10 <sup>-5</sup> | 3.00x10 <sup>-4</sup>     | 2.12x10 <sup>-4</sup> | 1.39x10 <sup>-3</sup> |
|                                             | 61%                   | 1.8%                  | 22%                       | 15%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 3.00                  | 2.10                  | 2.49                      | 10.2                  | 17.8                  |
|                                             | 17%                   | 12%                   | 14%                       | 57%                   | 100%                  |

**Table 25.** Table B: Use phase (1-year average). Results reported in MJ are calculated using lower heating values. **(Click Composite Core w/ Cork Backing)**

| Impact Category                             | Use                    |
|---------------------------------------------|------------------------|
| <b>CML</b>                                  |                        |
| GWP (kg CO <sub>2</sub> eq)                 | 4.03x10 <sup>-2</sup>  |
| AP (kg SO <sub>2</sub> eq)                  | 1.72x10 <sup>-4</sup>  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 6.01x10 <sup>-5</sup>  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 9.54x10 <sup>-6</sup>  |
| ODP (kg CFC-11 eq)                          | 2.95x10 <sup>-10</sup> |
| ADPF (MJ eq)                                | 0.892                  |
| ADPE (kg Sb eq)                             | 3.45x10 <sup>-7</sup>  |
| <b>Resources</b>                            |                        |
| PED, non-renewable (MJ eq)                  | 1.01                   |
| PED, renewable (MJ eq)                      | 6.26x10 <sup>-2</sup>  |
| Water Use (m <sup>3</sup> )                 | 9.14x10 <sup>-3</sup>  |
| Use of renewable materials (kg)             | 0.00                   |
| <b>Wastes</b>                               |                        |
| Landfill Avoidance (Recycling) (kg)         | 0.00                   |
| Hazardous Waste (kg)                        | 8.45x10 <sup>-7</sup>  |
| Non-hazardous Waste (kg)                    | 2.99x10 <sup>-3</sup>  |

**Table 26.** Table C: Cradle-to-grave. Results reported in MJ are calculated using lower heating values. **(Click Composite Core w/ Cork Backing)**

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | Use                   | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 57.7                  | 3.93                  | 11.5                      | 2.42                  | 11.1                  | 86.7                  |
|                                             | 67%                   | 4.5%                  | 13%                       | 2.8%                  | 13%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 0.221                 | 1.38x10 <sup>-3</sup> | 9.38x10 <sup>-2</sup>     | 1.03x10 <sup>-2</sup> | 2.32x10 <sup>-2</sup> | 0.350                 |
|                                             | 63%                   | 0.39%                 | 27%                       | 3%                    | 6.6%                  | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 7.57x10 <sup>-2</sup> | 1.32x10 <sup>-2</sup> | 2.09x10 <sup>-2</sup>     | 3.61x10 <sup>-3</sup> | 7.14x10 <sup>-2</sup> | 0.185                 |
|                                             | 41%                   | 7.1%                  | 11%                       | 2%                    | 39%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 1.58x10 <sup>-2</sup> | 7.47x10 <sup>-4</sup> | 3.57x10 <sup>-3</sup>     | 5.72x10 <sup>-4</sup> | 2.13x10 <sup>-3</sup> | 2.28x10 <sup>-2</sup> |
|                                             | 69%                   | 3.3%                  | 16%                       | 2.5%                  | 9.3%                  | 100%                  |
| ODP (kg CFC-11 eq)                          | 2.55x10 <sup>-5</sup> | 1.47x10 <sup>-8</sup> | 1.12x10 <sup>-6</sup>     | 1.77x10 <sup>-8</sup> | 7.33x10 <sup>-8</sup> | 2.68x10 <sup>-5</sup> |
|                                             | 95%                   | 0.055%                | 4.2%                      | 0.066%                | 0.27%                 | 100%                  |
| ADPF (MJ eq)                                | 1,160                 | 12.4                  | 152                       | 53.5                  | 75.8                  | 1,450                 |
|                                             | 80%                   | 0.86%                 | 10%                       | 3.7%                  | 5.2%                  | 100%                  |
| ADPE (kg Sb eq)                             | 5.43x10 <sup>-4</sup> | 1.07x10 <sup>-6</sup> | 4.00x10 <sup>-5</sup>     | 2.07x10 <sup>-5</sup> | 4.32x10 <sup>-6</sup> | 6.09x10 <sup>-4</sup> |
|                                             | 89%                   | 0.18%                 | 6.6%                      | 3.4%                  | 0.71%                 | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |                       |
| PED, non-renewable (MJ eq)                  | 1,240                 | 12.6                  | 156                       | 60.7                  | 76.4                  | 1,540                 |
|                                             | 80%                   | 0.82%                 | 10%                       | 3.9%                  | 5%                    | 100%                  |
| PED, renewable (MJ eq)                      | 263                   | 0.175                 | 11.7                      | 3.76                  | 0.469                 | 279                   |
|                                             | 94%                   | 0.063%                | 4.2%                      | 1.3%                  | 0.17%                 | 100%                  |
| Water Use (m <sup>3</sup> )                 | 4.30                  | 8.48x10 <sup>-3</sup> | 0.240                     | 0.549                 | 3.49x10 <sup>-2</sup> | 5.14                  |
|                                             | 84%                   | 0.17%                 | 4.7%                      | 11%                   | 0.68%                 | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 0.130                     | 0.00                  | 0.00                  | 0.130                 |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 2.05x10 <sup>-3</sup> | 6.16x10 <sup>-5</sup> | 7.19x10 <sup>-4</sup>     | 5.07x10 <sup>-5</sup> | 5.09x10 <sup>-4</sup> | 3.39x10 <sup>-3</sup> |
|                                             | 60%                   | 1.8%                  | 21%                       | 1.5%                  | 15%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 7.20                  | 5.03                  | 5.97                      | 0.180                 | 24.5                  | 42.9                  |
|                                             | 17%                   | 12%                   | 14%                       | 0.42%                 | 57%                   | 100%                  |

**Table 27. Table A: Cradle-to-install and end-of-life. Results reported in MJ are calculated using lower heating values. (SPC w/ IXPE Backing)**

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 8.99                  | 1.48                  | 3.56                      | 6.08                  | 20.1                  |
|                                             | 45%                   | 7.4%                  | 18%                       | 30%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 3.41x10 <sup>-2</sup> | 5.40x10 <sup>-4</sup> | 3.12x10 <sup>-2</sup>     | 8.46x10 <sup>-3</sup> | 7.43x10 <sup>-2</sup> |
|                                             | 46%                   | 0.73%                 | 42%                       | 11%                   | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 1.23x10 <sup>-2</sup> | 4.85x10 <sup>-3</sup> | 6.66x10 <sup>-3</sup>     | 2.41x10 <sup>-2</sup> | 4.79x10 <sup>-2</sup> |
|                                             | 26%                   | 10%                   | 14%                       | 50%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 2.51x10 <sup>-3</sup> | 2.78x10 <sup>-4</sup> | 1.13x10 <sup>-3</sup>     | 1.22x10 <sup>-3</sup> | 5.14x10 <sup>-3</sup> |
|                                             | 49%                   | 5.4%                  | 22%                       | 24%                   | 100%                  |
| ODP (kg CFC-11 eq)                          | 4.05x10 <sup>-6</sup> | 6.04x10 <sup>-9</sup> | 1.98x10 <sup>-7</sup>     | 2.62x10 <sup>-8</sup> | 4.28x10 <sup>-6</sup> |
|                                             | 95%                   | 0.14%                 | 4.6%                      | 0.61%                 | 100%                  |
| ADPF (MJ eq)                                | 179                   | 5.09                  | 44.1                      | 27.1                  | 255                   |
|                                             | 70%                   | 2%                    | 17%                       | 11%                   | 100%                  |
| ADPE (kg Sb eq)                             | 8.31x10 <sup>-5</sup> | 4.32x10 <sup>-7</sup> | 9.73x10 <sup>-6</sup>     | 1.67x10 <sup>-6</sup> | 9.49x10 <sup>-5</sup> |
|                                             | 88%                   | 0.45%                 | 10%                       | 1.8%                  | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |
| PED, non-renewable (MJ eq)                  | 191                   | 5.17                  | 45.0                      | 27.3                  | 268                   |
|                                             | 71%                   | 1.9%                  | 17%                       | 10%                   | 100%                  |
| PED, renewable (MJ eq)                      | 16.6                  | 6.87x10 <sup>-2</sup> | 1.06                      | 0.210                 | 17.9                  |
|                                             | 92%                   | 0.38%                 | 5.9%                      | 1.2%                  | 100%                  |
| Water Use (m <sup>3</sup> )                 | 0.612                 | 3.34x10 <sup>-3</sup> | 4.84x10 <sup>-2</sup>     | 1.43x10 <sup>-2</sup> | 0.678                 |
|                                             | 90%                   | 0.49%                 | 7.1%                      | 2.1%                  | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 4.05x10 <sup>-2</sup>     | 0.00                  | 4.05x10 <sup>-2</sup> |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 3.14x10 <sup>-4</sup> | 2.51x10 <sup>-5</sup> | 2.35x10 <sup>-4</sup>     | 1.83x10 <sup>-4</sup> | 7.58x10 <sup>-4</sup> |
|                                             | 41%                   | 3.3%                  | 31%                       | 24%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 1.27                  | 1.85                  | 2.01                      | 8.66                  | 13.8                  |
|                                             | 9.2%                  | 13%                   | 15%                       | 63%                   | 100%                  |

**Table 28.** Table B: Use phase (1-year average). Results reported in MJ are calculated using lower heating values. (SPC w/ IXPE Backing)

| Impact Category                             | Use                    |
|---------------------------------------------|------------------------|
| <b>CML</b>                                  |                        |
| GWP (kg CO <sub>2</sub> eq)                 | 4.03x10 <sup>-2</sup>  |
| AP (kg SO <sub>2</sub> eq)                  | 1.72x10 <sup>-4</sup>  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 6.01x10 <sup>-5</sup>  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 9.54x10 <sup>-6</sup>  |
| ODP (kg CFC-11 eq)                          | 2.95x10 <sup>-10</sup> |
| ADPF (MJ eq)                                | 0.892                  |
| ADPE (kg Sb eq)                             | 3.45x10 <sup>-7</sup>  |
| <b>Resources</b>                            |                        |
| PED, non-renewable (MJ eq)                  | 1.01                   |
| PED, renewable (MJ eq)                      | 6.26x10 <sup>-2</sup>  |
| Water Use (m <sup>3</sup> )                 | 9.14x10 <sup>-3</sup>  |
| Use of renewable materials (kg)             | 0.00                   |
| <b>Wastes</b>                               |                        |
| Landfill Avoidance (Recycling) (kg)         | 0.00                   |
| Hazardous Waste (kg)                        | 8.45x10 <sup>-7</sup>  |
| Non-hazardous Waste (kg)                    | 2.99x10 <sup>-3</sup>  |

**Table 29.** Table C: Cradle-to-grave. Results reported in MJ are calculated using lower heating values. **(SPC w/ IXPE Backing)**

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | Use                   | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 21.6                  | 3.56                  | 8.55                      | 2.42                  | 14.6                  | 50.7                  |
|                                             | 43%                   | 7%                    | 17%                       | 4.8%                  | 29%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 8.19x10 <sup>-2</sup> | 1.30x10 <sup>-3</sup> | 7.48x10 <sup>-2</sup>     | 1.03x10 <sup>-2</sup> | 2.03x10 <sup>-2</sup> | 0.189                 |
|                                             | 43%                   | 0.69%                 | 40%                       | 5.5%                  | 11%                   | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 2.95x10 <sup>-2</sup> | 1.16x10 <sup>-2</sup> | 1.60x10 <sup>-2</sup>     | 3.61x10 <sup>-3</sup> | 5.78x10 <sup>-2</sup> | 0.119                 |
|                                             | 25%                   | 9.8%                  | 13%                       | 3%                    | 49%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 6.03x10 <sup>-3</sup> | 6.66x10 <sup>-4</sup> | 2.70x10 <sup>-3</sup>     | 5.72x10 <sup>-4</sup> | 2.93x10 <sup>-3</sup> | 1.29x10 <sup>-2</sup> |
|                                             | 47%                   | 5.2%                  | 21%                       | 4.4%                  | 23%                   | 100%                  |
| ODP (kg CFC-11 eq)                          | 9.71x10 <sup>-6</sup> | 1.45x10 <sup>-8</sup> | 4.74x10 <sup>-7</sup>     | 1.77x10 <sup>-8</sup> | 6.28x10 <sup>-8</sup> | 1.03x10 <sup>-5</sup> |
|                                             | 94%                   | 0.14%                 | 4.6%                      | 0.17%                 | 0.61%                 | 100%                  |
| ADPF (MJ eq)                                | 430                   | 12.2                  | 106                       | 53.5                  | 65.0                  | 667                   |
|                                             | 65%                   | 1.8%                  | 16%                       | 8%                    | 9.7%                  | 100%                  |
| ADPE (kg Sb eq)                             | 1.99x10 <sup>-4</sup> | 1.04x10 <sup>-6</sup> | 2.34x10 <sup>-5</sup>     | 2.07x10 <sup>-5</sup> | 4.02x10 <sup>-6</sup> | 2.49x10 <sup>-4</sup> |
|                                             | 80%                   | 0.42%                 | 9.4%                      | 8.3%                  | 1.6%                  | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |                       |
| PED, non-renewable (MJ eq)                  | 457                   | 12.4                  | 108                       | 60.7                  | 65.6                  | 704                   |
|                                             | 65%                   | 1.8%                  | 15%                       | 8.6%                  | 9.3%                  | 100%                  |
| PED, renewable (MJ eq)                      | 39.8                  | 0.165                 | 2.55                      | 3.76                  | 0.505                 | 46.7                  |
|                                             | 85%                   | 0.35%                 | 5.5%                      | 8%                    | 1.1%                  | 100%                  |
| Water Use (m <sup>3</sup> )                 | 1.47                  | 8.02x10 <sup>-3</sup> | 0.116                     | 0.549                 | 3.42x10 <sup>-2</sup> | 2.18                  |
|                                             | 68%                   | 0.37%                 | 5.3%                      | 25%                   | 1.6%                  | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 9.72x10 <sup>-2</sup>     | 0.00                  | 0.00                  | 9.72x10 <sup>-2</sup> |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 7.55x10 <sup>-4</sup> | 6.04x10 <sup>-5</sup> | 5.65x10 <sup>-4</sup>     | 5.07x10 <sup>-5</sup> | 4.39x10 <sup>-4</sup> | 1.87x10 <sup>-3</sup> |
|                                             | 40%                   | 3.2%                  | 30%                       | 2.7%                  | 24%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 3.05                  | 4.44                  | 4.81                      | 0.180                 | 20.8                  | 33.3                  |
|                                             | 9.2%                  | 13%                   | 14%                       | 0.54%                 | 62%                   | 100%                  |

**Table 30.** Table A: Cradle-to-install and end-of-life. Results reported in MJ are calculated using lower heating values. *(PVC Rigid w/ IXPE Backing)*

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 7.79                  | 1.10                  | 2.52                      | 3.99                  | 15.4                  |
|                                             | 51%                   | 7.1%                  | 16%                       | 26%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 3.00x10 <sup>-2</sup> | 4.57x10 <sup>-4</sup> | 2.14x10 <sup>-2</sup>     | 5.66x10 <sup>-3</sup> | 5.75x10 <sup>-2</sup> |
|                                             | 52%                   | 0.79%                 | 37%                       | 9.9%                  | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 1.00x10 <sup>-2</sup> | 3.28x10 <sup>-3</sup> | 4.70x10 <sup>-3</sup>     | 1.62x10 <sup>-2</sup> | 3.42x10 <sup>-2</sup> |
|                                             | 29%                   | 9.6%                  | 14%                       | 47%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 3.27x10 <sup>-3</sup> | 1.95x10 <sup>-4</sup> | 8.32x10 <sup>-4</sup>     | 8.02x10 <sup>-4</sup> | 5.10x10 <sup>-3</sup> |
|                                             | 64%                   | 3.8%                  | 16%                       | 16%                   | 100%                  |
| ODP (kg CFC-11 eq)                          | 4.61x10 <sup>-6</sup> | 5.85x10 <sup>-9</sup> | 2.09x10 <sup>-7</sup>     | 1.75x10 <sup>-8</sup> | 4.84x10 <sup>-6</sup> |
|                                             | 95%                   | 0.12%                 | 4.3%                      | 0.36%                 | 100%                  |
| ADPF (MJ eq)                                | 160                   | 4.89                  | 31.6                      | 18.1                  | 214                   |
|                                             | 75%                   | 2.3%                  | 15%                       | 8.5%                  | 100%                  |
| ADPE (kg Sb eq)                             | 8.04x10 <sup>-5</sup> | 3.93x10 <sup>-7</sup> | 7.56x10 <sup>-6</sup>     | 1.12x10 <sup>-6</sup> | 8.95x10 <sup>-5</sup> |
|                                             | 90%                   | 0.44%                 | 8.5%                      | 1.2%                  | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |
| PED, non-renewable (MJ eq)                  | 170                   | 4.96                  | 32.3                      | 18.3                  | 226                   |
|                                             | 75%                   | 2.2%                  | 14%                       | 8.1%                  | 100%                  |
| PED, renewable (MJ eq)                      | 14.0                  | 5.88x10 <sup>-2</sup> | 0.834                     | 0.139                 | 15.1                  |
|                                             | 93%                   | 0.39%                 | 5.5%                      | 0.93%                 | 100%                  |
| Water Use (m <sup>3</sup> )                 | 0.519                 | 2.87x10 <sup>-3</sup> | 3.70x10 <sup>-2</sup>     | 9.49x10 <sup>-3</sup> | 0.568                 |
|                                             | 91%                   | 0.51%                 | 6.5%                      | 1.7%                  | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 3.24x10 <sup>-2</sup>     | 0.00                  | 3.24x10 <sup>-2</sup> |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 2.88x10 <sup>-4</sup> | 2.38x10 <sup>-5</sup> | 1.64x10 <sup>-4</sup>     | 1.23x10 <sup>-4</sup> | 5.98x10 <sup>-4</sup> |
|                                             | 48%                   | 4%                    | 27%                       | 21%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 1.02                  | 1.23                  | 1.41                      | 5.80                  | 9.46                  |
|                                             | 11%                   | 13%                   | 15%                       | 61%                   | 100%                  |

**Table 31.** Table B: Use phase (1-year average). Results reported in MJ are calculated using lower heating values. (PVC Rigid w/ IXPE Backing)

| Impact Category                             | Use                    |
|---------------------------------------------|------------------------|
| <b>CML</b>                                  |                        |
| GWP (kg CO <sub>2</sub> eq)                 | 4.03x10 <sup>-2</sup>  |
| AP (kg SO <sub>2</sub> eq)                  | 1.72x10 <sup>-4</sup>  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 6.01x10 <sup>-5</sup>  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 9.54x10 <sup>-6</sup>  |
| ODP (kg CFC-11 eq)                          | 2.95x10 <sup>-10</sup> |
| ADPF (MJ eq)                                | 0.892                  |
| ADPE (kg Sb eq)                             | 3.45x10 <sup>-7</sup>  |
| <b>Resources</b>                            |                        |
| PED, non-renewable (MJ eq)                  | 1.01                   |
| PED, renewable (MJ eq)                      | 6.26x10 <sup>-2</sup>  |
| Water Use (m <sup>3</sup> )                 | 9.14x10 <sup>-3</sup>  |
| Use of renewable materials (kg)             | 0.00                   |
| <b>Wastes</b>                               |                        |
| Landfill Avoidance (Recycling) (kg)         | 0.00                   |
| Hazardous Waste (kg)                        | 8.45x10 <sup>-7</sup>  |
| Non-hazardous Waste (kg)                    | 2.99x10 <sup>-3</sup>  |

**Table 32.** Table C: Table C: Cradle-to-grave. Results reported in MJ are calculated using lower heating values. (PVC Rigid w/ IXPE Backing)

| Impact Category                             | Sourcing/Extraction   | Manufacturing         | Delivery and Installation | Use                   | End of Life           | Total                 |
|---------------------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|-----------------------|
| <b>CML</b>                                  |                       |                       |                           |                       |                       |                       |
| GWP (kg CO <sub>2</sub> eq)                 | 18.7                  | 2.63                  | 6.04                      | 2.42                  | 9.58                  | 39.4                  |
|                                             | 48%                   | 6.7%                  | 15%                       | 6.1%                  | 24%                   | 100%                  |
| AP (kg SO <sub>2</sub> eq)                  | 7.20x10 <sup>-2</sup> | 1.10x10 <sup>-3</sup> | 5.14x10 <sup>-2</sup>     | 1.03x10 <sup>-2</sup> | 1.36x10 <sup>-2</sup> | 0.148                 |
|                                             | 48%                   | 0.74%                 | 35%                       | 7%                    | 9.2%                  | 100%                  |
| EP (kg (PO <sub>4</sub> ) <sup>3-</sup> eq) | 2.40x10 <sup>-2</sup> | 7.87x10 <sup>-3</sup> | 1.13x10 <sup>-2</sup>     | 3.61x10 <sup>-3</sup> | 3.89x10 <sup>-2</sup> | 8.56x10 <sup>-2</sup> |
|                                             | 28%                   | 9.2%                  | 13%                       | 4.2%                  | 45%                   | 100%                  |
| POCP (kg C <sub>2</sub> H <sub>4</sub> eq)  | 7.84x10 <sup>-3</sup> | 4.67x10 <sup>-4</sup> | 2.00x10 <sup>-3</sup>     | 5.72x10 <sup>-4</sup> | 1.92x10 <sup>-3</sup> | 1.28x10 <sup>-2</sup> |
|                                             | 61%                   | 3.6%                  | 16%                       | 4.5%                  | 15%                   | 100%                  |
| ODP (kg CFC-11 eq)                          | 1.11x10 <sup>-5</sup> | 1.40x10 <sup>-8</sup> | 5.01x10 <sup>-7</sup>     | 1.77x10 <sup>-8</sup> | 4.21x10 <sup>-8</sup> | 1.16x10 <sup>-5</sup> |
|                                             | 95%                   | 0.12%                 | 4.3%                      | 0.15%                 | 0.36%                 | 100%                  |
| ADPF (MJ eq)                                | 383                   | 11.7                  | 75.8                      | 53.5                  | 43.5                  | 568                   |
|                                             | 67%                   | 2.1%                  | 13%                       | 9.4%                  | 7.7%                  | 100%                  |
| ADPE (kg Sb eq)                             | 1.93x10 <sup>-4</sup> | 9.43x10 <sup>-7</sup> | 1.82x10 <sup>-5</sup>     | 2.07x10 <sup>-5</sup> | 2.68x10 <sup>-6</sup> | 2.36x10 <sup>-4</sup> |
|                                             | 82%                   | 0.4%                  | 7.7%                      | 8.8%                  | 1.1%                  | 100%                  |
| <b>Resources</b>                            |                       |                       |                           |                       |                       |                       |
| PED, non-renewable (MJ eq)                  | 408                   | 11.9                  | 77.5                      | 60.7                  | 44.0                  | 602                   |
|                                             | 68%                   | 2%                    | 13%                       | 10%                   | 7.3%                  | 100%                  |
| PED, renewable (MJ eq)                      | 33.7                  | 0.141                 | 2.00                      | 3.76                  | 0.335                 | 39.9                  |
|                                             | 84%                   | 0.35%                 | 5%                        | 9.4%                  | 0.84%                 | 100%                  |
| Water Use (m <sup>3</sup> )                 | 1.25                  | 6.89x10 <sup>-3</sup> | 8.88x10 <sup>-2</sup>     | 0.549                 | 2.28x10 <sup>-2</sup> | 1.91                  |
|                                             | 65%                   | 0.36%                 | 4.6%                      | 29%                   | 1.2%                  | 100%                  |
| Use of renewable materials (kg)             | 0.00                  | 0.00                  | 0.00                      | 0.00                  | 0.00                  | 0.00                  |
|                                             | 0%                    | 0%                    | 0%                        | 0%                    | 0%                    | 0%                    |
| <b>Wastes</b>                               |                       |                       |                           |                       |                       |                       |
| Landfill Avoidance (Recycling) (kg)         | 0.00                  | 0.00                  | 7.77x10 <sup>-2</sup>     | 0.00                  | 0.00                  | 7.77x10 <sup>-2</sup> |
|                                             | 0%                    | 0%                    | 100%                      | 0%                    | 0%                    | 100%                  |
| Hazardous Waste (kg)                        | 6.91x10 <sup>-4</sup> | 5.72x10 <sup>-5</sup> | 3.93x10 <sup>-4</sup>     | 5.07x10 <sup>-5</sup> | 2.94x10 <sup>-4</sup> | 1.49x10 <sup>-3</sup> |
|                                             | 46%                   | 3.9%                  | 26%                       | 3.4%                  | 20%                   | 100%                  |
| Non-hazardous Waste (kg)                    | 2.45                  | 2.96                  | 3.38                      | 0.180                 | 13.9                  | 22.9                  |
|                                             | 11%                   | 13%                   | 15%                       | 0.78%                 | 61%                   | 100%                  |

## 13. Supporting Technical Information

### Data Sources

Unit processes are developed with OpenLCA software, drawing upon data from multiple sources. Primary data were provided by Bay Resource Group for their manufacturing processes. The primary sources of secondary LCI data are from Ecoinvent Database.

**Table 33.** *Data sources used for the LCA.*

| Component             | Dataset                                                                                                                           | Data Source | Publication Date |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------|------------------|
| <b>PRODUCT</b>        |                                                                                                                                   |             |                  |
| <b>PVC</b>            |                                                                                                                                   |             |                  |
| Polyvinyl Chloride    | polyvinylchloride production, bulk polymerisation   polyvinylchloride, bulk polymerised   Cutoff, S/RoW                           | EI v3.9     | 2022             |
| <b>Filler</b>         |                                                                                                                                   |             |                  |
| Calcium Carbonate     | limestone production, crushed, washed   limestone, crushed, washed   Cutoff, S/RoW                                                | EI v3.9     | 2022             |
| <b>Plasticizer</b>    |                                                                                                                                   |             |                  |
| PVC Plasticizer       | diethyl terephthalate production   diethyl terephthalate   Cutoff, S/GLO                                                          | EI v3.9     | 2022             |
| <b>Stabilizer</b>     |                                                                                                                                   |             |                  |
| Stabilizer            | Ca-Zn stabilizer:                                                                                                                 |             |                  |
|                       | chemical production, organic   chemical, organic   Cutoff, S/GLO                                                                  | EI v3.9     | 2022             |
|                       | chemical production, inorganic   chemical, inorganic   Cutoff, S/GLO                                                              | EI v3.9     | 2022             |
|                       | limestone production, crushed, washed   limestone, crushed, washed   Cutoff, S/RoW                                                | EI v3.9     | 2022             |
|                       | zinc oxide production   zinc oxide   Cutoff, S/RoW                                                                                | EI v3.9     | 2022             |
| <b>Pigment</b>        |                                                                                                                                   |             |                  |
| Carbon Black          | carbon black production   carbon black   Cutoff, S/GLO                                                                            | EI v3.9     | 2022             |
| <b>Plastics</b>       |                                                                                                                                   |             |                  |
| IXPE                  | polyethylene production, low density, granulate   steam, in chemical industry   Cutoff, S/RoW                                     | EI v3.9     | 2022             |
| <b>Other</b>          |                                                                                                                                   |             |                  |
| Organic chemicals     | chemical production, organic   chemical, organic   Cutoff, S/GLO                                                                  | EI v3.9     | 2022             |
| Adhesive              | polyurethane adhesive production   polyurethane adhesive   Cutoff, S/GLO                                                          | EI v3.9     | 2022             |
| Cork                  | cork slab production   cork slab   Cutoff, S/RER                                                                                  | EI v3.9     | 2022             |
| <b>PACKAGING</b>      |                                                                                                                                   |             |                  |
| Cardboard             | corrugated board box production   corrugated board box   Cutoff, S/RoW                                                            | EI v3.9     | 2022             |
| Wood                  | EUR-flat pallet production   EUR-flat pallet   Cutoff, S/RoW                                                                      | EI v3.9     | 2022             |
| Plastic               | packaging film production, low density polyethylene   packaging film, low density polyethylene   Cutoff, S/RoW;                   | EI v3.9     | 2022             |
|                       | polyethylene terephthalate production, granulate, amorphous   polyethylene terephthalate, granulate, amorphous   Cutoff, S/RoW    | EI v3.9     | 2022             |
| <b>TRANSPORT</b>      |                                                                                                                                   |             |                  |
| Road transport        | transport, freight, lorry 16-32 metric ton, EURO4   transport, freight, lorry 16-32 metric ton, EURO4   Cutoff, S/RoW             | EI v3.9     | 2022             |
| Ship transport        | transport, freight, sea, container ship   transport, freight, sea, container ship   Cutoff, S/GLO                                 | EI v3.9     | 2022             |
| <b>RESOURCES</b>      |                                                                                                                                   |             |                  |
| Grid electricity      | market group for electricity, medium voltage   electricity, medium voltage   Cutoff, S/CN                                         | EI v3.9     | 2022             |
| 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 v3.9     | 2022             |
| 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 v3.9     | 2022             |

## Data Quality

**Table 34.** *Data quality assessment of Life Cycle Inventory.*

| Data Quality Parameter                                                                                                                                                                                            | Data Quality Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Time-Related Coverage:</b><br>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 2022.                                                                                                                                                                 |
| <b>Geographical Coverage:</b><br>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 is considered sufficiently similar to actual processes. Data representing product disposal are based on regional statistics.                                                                                                              |
| <b>Technology Coverage:</b><br>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.                                                                                                                                                                                                                                                                                                |
| <b>Precision:</b><br>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.                                                                                                                                                                                                                                                                                                                                           |
| <b>Completeness:</b><br>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.                                                                                                                                                                                         |
| <b>Representativeness:</b><br>Qualitative assessment of the degree to which the data set reflects the true population of interest                                                                                 | 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.                                                                                                        |
| <b>Consistency:</b><br>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 v3.9 data where available. Different portions of the product life cycle are equally considered.                                                                                                                                                                                                                                                                                                                                |
| <b>Reproducibility:</b><br>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.                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Sources of the Data:</b><br>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 v3.9 LCI data are used.                                                                                                                                                                                                                                  |
| <b>Uncertainty of the Information:</b><br>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 (<10 years) 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. |

## Allocation

This study follows the allocation guidelines of ISO 14044 and sought to minimize the use of allocation wherever possible. The PCR requires primary data for allocation based on physical relationships (e.g., volume, energy content, or mass-based relationships). Alternatively, economic allocation may be applied. The secondary databases used for the product system (discussed below) apply allocation based primarily on physical relationships.

Resource use (e.g., water and energy) at the Bay Resource Group facility in China was allocated to the product based on the product area as a fraction of the total facility production volume (i.e., area-based allocation). Electricity use at the manufacturing facility was modeled using ecoinvent inventory datasets for the country-specific electrical grid.

Impacts from transportation were attributed to the product based on the mass of material and distance transported.

## System boundaries

The system boundaries of the life cycle assessment are cradle to grave. A description of the system boundaries for this study are as follows:

- **Sourcing/extraction stage** – This stage includes extraction of virgin materials and reclamation of non-virgin feedstock. Resource use and emissions associated with both extraction of the raw material component manufacturing are included. Upstream transportation is also included.
- **Manufacturing stage** – This stage includes all the relevant manufacturing processes and flows, including packaging. Production of capital goods, infrastructure, production of manufacturing equipment, and personnel-related activities are not included.
- **Delivery and installation stage** – This stage includes the delivery of the flooring products to the point of installation.
- **Use stage** – The use stage includes the cleaning and maintenance of the flooring during its lifetime, as well as extraction, manufacturing and transport of all sundry material for maintenance and cleaning.
- **End of life stage** – The end of life stage includes the transport of the floor covering to end of life processes including landfill, incineration, and recycling.

## Cut-off criteria

According to the PCR, processes contributing greater than 1% of the total environmental impact indicator for each impact must be included in the inventory. In the present study, except as noted, all known materials and processes were included in the life cycle inventory.

## 14. References

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