Leverage

Workspace Solutions

Environmental Product Declaration
Date of Issue: 03/15/2019
Date of Expiration: 03/15/2024

PRODUCT CATEGORY RULE
BIFMA PCR for Office Furniture Workspace Products, UNCPC 3814

FUNCTIONAL UNIT
1 m² of workspace, maintained for a 10 year period. A representative configuration was utilized for the purposes of this study and includes fabric panels, glass elements, work surfaces, filing storage, and a lighting solution requiring 0.013 kW per hour.
Program Operator
NSF Certification, LLC
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sustainability@nsf.org

Manufacturer Name and Address
Teknion
100 Roytec Rd, Woodbridge, ON L4L 8A9, Canada

Declaration Number
EPD10186

Declared Product and Functional Unit
1 m² of workspace, maintained for a 10 year period.

Reference PCR and Version Number
BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814

Product’s intended Application and Use
Commercial Furniture

Product RSL
10 year

Markets of Applicability
North America

Date of Issue
03/15/2019

Period of Validity
5 years from date of issue

EPD Type
Product Specific

Range of Dataset Variability
N/A

EPD Scope
Cradle to Grave

Year of reported manufacturer primary data
2017

LCA Software and Version Number
GaBi 8.6.0.20

LCI Database and Version Number
GaBi Database Version 8.7, Service Pack 35

LCIA Methodology and Version Number
TRACI 2.1

The sub-category PCR review was conducted by:
Thomas Gloria, PhD (chair)
Jack Geibig, P.E.
Michael Overcash, PhD

This declaration was independently verified in accordance with ISO 14025: 2006. The BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814 serves as the core PCR.

☐ Internal  ☒ External

Jenny Oorbeck
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This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:

WAP Sustainability Consulting

This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:

Jack Geibig
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Limitations:
Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of products using EPD information shall be based on the product’s use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the building energy use phase as instructed under this PCR. Full conformance with the PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible*. Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.
Company Description

Teknion Corporation designs, manufactures, and markets workplace interiors. Its products include panel systems, desking systems, private office systems/case goods, seating solutions, architectural products, tables and collaborative spaces, storage products, work better tech products (complements), and textiles. The company’s products are used in various applications, including open, collaborative, private, meeting, lounge, learning, next culture, and work couture areas. Teknion Corporation was founded in 1981 and is based in Toronto, Canada.

Product Description

Leverage® systems are customizable workspace solutions containing panels in addition with other office components. A typical workspace configuration was used to showcase a representative setup. The full configuration was studied and the results were then scaled appropriately based on the floor area of the final configuration and the functional unit.

The workspace solution studied can contain panels, worksurfaces, storage solutions, and power cables, depending on the final configuration. Additional details of the product configuration used for this EPD can be found below, but other configurations are possible.

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Panels + other office components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Occupants</td>
<td>1</td>
</tr>
<tr>
<td>Floor Area</td>
<td>10.9 m²</td>
</tr>
<tr>
<td>Components Included</td>
<td>2 Panels, Worksurface, Filing Storage, Lamp</td>
</tr>
<tr>
<td>Defining Features</td>
<td>Worksurface, integrated panels, storage devices, task lighting</td>
</tr>
<tr>
<td>Energy Usage</td>
<td>0.013 kWh/hr</td>
</tr>
<tr>
<td>Recycled Content</td>
<td>24.3% pre-consumer, 34.2% post-consumer</td>
</tr>
</tbody>
</table>
Product Composition

Like many commercial furniture products, Leverage is available in a multitude of configurations. For this particular study, a worst-case scenario, as defined by the ANSI/BIFMA e3-2014e Furniture Sustainability Standard program was used. This composition of the configuration is provided in the table below. The exact configuration purchased may be slightly different, however, because a worst-case scenario was used, this EPD will still be applicable to the purchased configuration.

<table>
<thead>
<tr>
<th>Material</th>
<th>Mass %</th>
<th>Material</th>
<th>Mass %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>68.7%</td>
<td>Fabric</td>
<td>1.0%</td>
</tr>
<tr>
<td>Particle Board</td>
<td>8.2%</td>
<td>Powder Coat</td>
<td>0.7%</td>
</tr>
<tr>
<td>Aluminum</td>
<td>7.6%</td>
<td>HPL</td>
<td>0.4%</td>
</tr>
<tr>
<td>Glass</td>
<td>6.7%</td>
<td>Backer</td>
<td>0.4%</td>
</tr>
<tr>
<td>Electrical</td>
<td>3.2%</td>
<td>Plastic - PVC</td>
<td>0.4%</td>
</tr>
<tr>
<td>White Fiberglass</td>
<td>1.4%</td>
<td>Zinc</td>
<td>0.1%</td>
</tr>
<tr>
<td>Plastic - PP</td>
<td>1.2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Selection of Impact Parameters

Environmental Impacts were calculated using the GaBi software platform. Impact results have been calculated using TRACI 2.1 characterization factors. Results presented in this report are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Parameter</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP</td>
<td>Acidification potential of soil and water</td>
<td>kg N eq.</td>
</tr>
<tr>
<td>EP</td>
<td>Eutrophication potential</td>
<td>kg SO₂ eq.</td>
</tr>
<tr>
<td>GWP</td>
<td>Global warming potential</td>
<td>kg CO₂ eq.</td>
</tr>
<tr>
<td>ODP</td>
<td>Depletion of stratospheric ozone layer</td>
<td>kg CFC 11 eq.</td>
</tr>
<tr>
<td>POCP</td>
<td>Photochemical ozone creation potential</td>
<td>kg O₃ eq.</td>
</tr>
</tbody>
</table>

In addition to the environmental parameters above, the following resource use and waste categories are also disclosed.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Parameter</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>PED</td>
<td>Total use of renewable and non-renewable primary energy resources</td>
<td>MJ, net calorific value</td>
</tr>
<tr>
<td>FW</td>
<td>Net use of fresh water</td>
<td>kg</td>
</tr>
</tbody>
</table>
LCA Results

All results are given per functional unit, which is 1 m² of workspace for a period of 10 years.

TRACI Results

<table>
<thead>
<tr>
<th>Impact Category</th>
<th>Unit</th>
<th>Total</th>
<th>Material Acquisition</th>
<th>Production</th>
<th>Distribution, Storage, and Use</th>
<th>End-of-Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP</td>
<td>kg SO₂-eq</td>
<td>1.91E-01</td>
<td>1.74E-01</td>
<td>1.05E-02</td>
<td>5.84E-03</td>
<td>1.23E-03</td>
</tr>
<tr>
<td>EP</td>
<td>kg N-eq</td>
<td>8.31E-03</td>
<td>7.21E-03</td>
<td>5.32E-04</td>
<td>4.82E-04</td>
<td>8.68E-05</td>
</tr>
<tr>
<td>GWP</td>
<td>kg CO₂-eq</td>
<td>5.40E+01</td>
<td>4.56E+01</td>
<td>5.96E+00</td>
<td>1.35E+00</td>
<td>8.75E-01</td>
</tr>
<tr>
<td>POCP</td>
<td>kg O₃-eq</td>
<td>3.07E-08</td>
<td>3.07E-08</td>
<td>6.96E-12</td>
<td>4.63E-14</td>
<td>2.40E-14</td>
</tr>
<tr>
<td>ODP</td>
<td>kg CFC-11 eq</td>
<td>2.59E+00</td>
<td>2.21E+00</td>
<td>1.52E-01</td>
<td>1.92E-01</td>
<td>3.56E-02</td>
</tr>
</tbody>
</table>

LCI Indicators

<table>
<thead>
<tr>
<th>Impact Category</th>
<th>Unit</th>
<th>Total</th>
<th>Material Acquisition</th>
<th>Production</th>
<th>Distribution, Storage, and Use</th>
<th>End-of-Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>PED</td>
<td>MJ</td>
<td>8.13E+02</td>
<td>6.97E+02</td>
<td>9.26E+01</td>
<td>1.96E+01</td>
<td>3.36E+00</td>
</tr>
<tr>
<td>FW</td>
<td>kg</td>
<td>2.06E+05</td>
<td>1.84E+05</td>
<td>2.14E+04</td>
<td>6.39E+01</td>
<td>4.39E+01</td>
</tr>
</tbody>
</table>

Interpretation

A dominance analysis was performed for all of the products in the LCA to show which of the life cycle stages contributes to the majority of the impacts. Results are shown for the 5 TRACI 2.1 impact categories.

Overall, the dominance analysis shows the vast majority of the impacts are coming from the material acquisition and pre-processing stage. This tracks with the majority of durable goods similar to Leverage workspace solutions.

An additional dominance analysis was performed to determine the relative impacts of the materials used in the production of Leverage. For most of the LCIA indicators, the top material impacts are steel and aluminum, with glass, particle board, and the power cable coming in third, depending on the indicator.
Additional Environmental Information

Teknion is a supporter and/or a participant in the following environmental and sustainability related programs.

- The International Living Future Institute’s Declare program. Products with Declare labels can be found at https://living-future.org/declare/
- ANSI/BIFMA e3-2014e Furniture Sustainability Standard program. Leverage is certified to Level 2.
- Teknion products, including Leverage, comply with SCS’s Indoor Advantage Gold program. Leverage’s certification can be found at this link.
- Teknion participates in mindful Materials. Teknion products that have been listed on mindful Materials are available at this link.
- Teknion has been a member of the USGBC since 2016.

Additionally, Teknion publishes an annual Impact Report which is publicly available at https://www.teknion.com/search-results/our-planet

References


BIFMA PCR for Office Furniture Workspace Products, UNCPC 3814

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