

# node™

## AMERICAS



Certified  
Environmental  
Product Declaration  
[www.nsf.org](http://www.nsf.org)



### About this product

Node chairs are highly mobile and support collaboration, transition and movement for all the ways students learn. And with a wide range of base, seat, color and finish options, there's a Node for everybody and every space.

One chair is required to meet the functional unit of seating one individual for a 10-year period.

Date of Issue: September 23, 2024

Date of Expiration: September 23, 2029

### Learn more

- Explore Steelcase environmental philosophy and commitments [overview](#).
- Find product details and sustainability certifications on the [product page](#) and at [steelcase.com](http://steelcase.com).
- See our product [warranty](#).
- Contact [epd@steelcase.com](mailto:epd@steelcase.com) for any EPD-related questions or inquiries.

### About this document

This declaration describes the Life Cycle Assessment of the Node chair produced for the Americas market by Steelcase Inc. in Michigan. The assessment is performed according to the ISO standards 14040 (2006), 14044 (2006) and 14025 (2006), and BIFMA PCR for Seating: UNCPC 3811 (2020) to generate an EPD for business-to-business communication.

## ASSESSMENT OVERVIEW

|  |   |
|--|---|
| <b>EPD commissioner</b>                    | Steelcase® Inc  |
| <b>Corporate Address</b>                   | 901 44th Street SE Grand Rapids, Michigan 49508-7594 United States  |
| <b>Product group</b>                       | Seating   |
| <b>Product name</b>                        | node™   |
| <b>Product intended use</b>                | Office Chair  |
| <b>Product reference service life</b>      | 10 years  |
| <b>Reference standards</b>                 | ISO 14025, ISO 14040, ISO 14044   |
| <b>EPD scope</b>                           | Cradle to grave   |
| <b>EPD number</b>                          | EPD10933  |
| <b>Date of issuance</b>                    | September 23, 2024  |
| <b>Date of expiration</b>                  | September 23, 2029  |
| <b>EPD type</b>                            | Product specific  |
| <b>EPD Product Coverage</b>                | node™ chair made and sold in the Americas   |
| <b>Intended audience</b>                   | Business to business (B2B)  |
| <b>Year of reported manufacturer data</b>  | 2023  |
| <b>Functional unit</b>                     | One unit of seating to seat one individual for a reference service life of 10 years   |
| <b>Applicable markets/regions</b>          | Americas  |
| <b>LCA software and database version</b>   | GaBi 10.6.2.9; GaBi database, 2022.2  |
| <b>LCIA methodology and version number</b> | TRACI 2.1   |
| <b>Program administrator</b>               | NSF Certification LLC 789 N. Dixboro, Ann Arbor, MI 48105 www.nsf.org   |
| <b>Reference PCR and version number</b>    | BIFMA PCR for Seating: UNCPC 3811 (BIFMA PCR, 2020)   |
| <b>PCR reviewer</b>                        | Review Panel Chaired by Dr. Thomas Gloria   |
| <b>EPD reviewer</b>                        | <p>External review conducted by:</p>  <p>Jim Mellentine, Thrive ESG<br/>                     This declaration and its Life Cycle Assessment was independently verified in accordance with ISO standards 14040 (2006), 14044 (2006), 14025 (2006), and BIFMA PCR for Seating UNCPC 3811 (2020).</p>   |
| <b>LCA reviewer</b>                        | <p>External review conducted by:</p>  <p>Jim Mellentine, Thrive ESG<br/>                     The product Life Cycle Assessment was conducted in accordance with ISO 14044 and the reference PCR.</p>   |
| <b>Disclaimer</b>                          | <p>The PCR this EPD was based on was written to determine the potential environmental impacts of a seating product from cradle to grave. It 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.</p> |

## ASSESSMENT PARAMETERS

### Functional unit

One unit of seating to seat one individual for a reference service life of 10 years. One product is required to fulfill the functional unit.

### Product scope

One node™ chair (product numbers 480120 and 480150) consisting of tripod or 5-star base, worksurface, and cupholder. These configurations are the highest selling and therefore were determined to be representative of all configurations produced and sold in the Americas region.

All node™ chairs are manufactured in Michigan and shipped to customers in the Americas.






### Assessment goal and scope

The potential environmental impacts of node™ and its packaging throughout its entire life cycle – including raw materials extraction, production, transport, use, and end of life – were assessed. In the absence of primary information, the GaBi database was used for secondary data.

The life cycle stages included in this assessment follow the BIFMA PCR for Seating: UNCPC 3811 V3. Material acquisition and pre-processing (including transportation), production, distribution, use and end-of-life are assessed for the seating product.

### Assessment boundary

The Life Cycle Assessment considers the full life cycle of the product as described here, cradle to grave. Life cycle stages and phase included in this assessment follow the BIFMA PCR for Seating and are presented in the following table.

|  | Stage                      | Status |
|--|----------------------------|--------|
|  <p><b>Cradle to inbound gate</b><br/><b>MATERIALS ACQUISITION</b><br/>Raw material extraction, pre-processing and transportation of materials to suppliers.</p>  | A1. Raw material supply    | ✓      |
|  | A2. Transport              | ✓      |
|  <p><b>Gate to gate</b><br/><b>PRODUCTION PROCESS</b><br/>Transportation of furniture components and materials from Tier 1 suppliers to Steelcase final manufacturing facility. External and internal production.</p> | A3. Manufacturing          | ✓      |
|  | A4. Transport              | ✓      |
|  <p><b>Gate to grave</b><br/><b>DISTRIBUTION, USE AND END OF LIFE</b><br/>Distribution of products, installation, use and end of life.</p>  | A5. Installation           | ✓      |
|  | B1. Use                    | ✓      |
|  | B2. Maintenance/cleaning   | ✓      |
|  | B3. Repair                 | ✓      |
|  | B4. Replacement            | ✓      |
|  | B5. Refurbishment          | ✓      |
|  | B6. Operational energy use | ✓      |
|  | B7. Operational water use  | ✓      |
|  | C1. Disassembly            | ✓      |
|  | C2. Transport              | ✓      |
| C3. Waste processing   | ✓                          |        |
| C4. Disposal   | ✓                          |        |
| <b>Beyond the boundary</b>   | D. Reuse/recovery          | ✓      |

## RESULTS

The product composition, packaging composition, recycled content, and recyclability visuals below relate specifically to the configuration listed above.

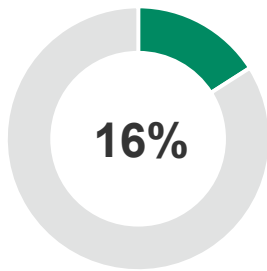
### Product composition

| Material             | Weight (kg) | Weight (%) | Resource Type                  |
|----------------------|-------------|------------|--------------------------------|
| Nylon (PA6 and PA66) | 3.659       | 24.69%     | Virgin non-renewable           |
| Aluminum             | 1.467       | 9.90%      | Recycled, Virgin non-renewable |
| Steel                | 1.607       | 10.85%     | Recycled, Virgin non-renewable |
| Polypropylene (PP)   | 7.207       | 48.63%     | Virgin non-renewable           |
| Polycarbonate        | 0.580       | 3.91%      | Virgin non-renewable           |
| Polyurethane foam    | 0.210       | 1.42%      | Virgin non-renewable           |
| POM                  | 0.079       | 0.54%      | Virgin non-renewable           |
| Polyester Fabric     | 0.010       | 0.07%      | Virgin non-renewable           |
| Total                | 14.819      | 100%       |                                |

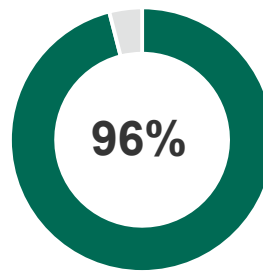
### Product packaging composition

| Material                                | Weight (kg) | Weight (%) | Resource Type |
|---|-------------|------------|---------------|
| Cardboard                               | 4.17        | 83.4%      | Renewable     |
| Linear low-density polyethylene (LLDPE) | 0.83        | 16.6%      | Non-renewable |
| Total                                   | 5.00        | 100%       |               |

### Product recycled content\* and recyclability\*\* summary



TOTAL RECYCLED CONTENT\*



RECYCLABILITY BY WEIGHT\*\*

\*Total recycled content based on supplier's data. The source of recycled content of various materials could be either post-industrial or post-consumer based on market availability. Packaging excluded.

\*\*Recyclability: this recyclability rate is the maximum amount of the product that is recyclable, based on the availability of recycling facilities in the specified regions and the ability of the product to be disassembled. Note that, per the requirements of the PCR, the end-of-life results presented in this EPD were calculated using the US EPA's recycling rates within the 2020 Municipal Solid Waste Report for parts that can be disassembled. Packaging excluded.

## RESULTS

Results for one node™ chair with tripod or 5-star base, worksurface, and cupholder are shown on the subsequent pages.

### Life cycle impact by category and stage

Environmental impacts were calculated using the GaBi software platform. Impact results according to the BIFMA PCR have been calculated using TRACI 2.1 characterization factors, as well as LCI indicators for primary energy and water usage. Results presented in this report are for one seat maintained for one individual for 10 years. Additionally, the results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks.

|  | Unit         | Life cycle stages     |                    |                    |             | Totals   |
|--|--------------|-----------------------|--------------------|--------------------|-------------|----------|
|  |              | Materials acquisition | Production process | Distribution & Use | End of life |          |
| <b>*Global warming potential</b><br>(100 years) Warming of the atmosphere caused by the global release of greenhouse gases.  | kg CO2 eq    | 7.85E+01              | 2.38E+01           | 4.44E+00           | 5.16E+00    | 1.12E+02 |
| <b>*Acidification</b><br>Emissions that increase the acidity of the environment due to various chemical reactions and/or biological activity, or by natural circumstances.                   | kg SO2 eq    | 2.44E-01              | 7.58E-02           | 2.89E-02           | 4.78E-03    | 3.53E-01 |
| <b>*Photochemical ozone creation (Smog)</b> Through various chemical reactions, which occur between nitrogen oxides (NOx) and volatile organic compounds (VOCs) in sunlight.                 | kg O3 eq     | 3.74E+00              | 1.12E+00           | 5.71E-01           | 1.09E-01    | 5.54E+00 |
| <b>*Eutrophication</b><br>Enrichment of an aquatic ecosystem with nutrients (nitrates, phosphates) that accelerate biological productivity and an undesirable accumulation of algal biomass. | kg N eq      | 1.32E-02              | 1.03E-02           | 2.15E-03           | 1.63E-03    | 2.73E-02 |
| <b>*Ozone depletion</b><br>Reduction of the stratospheric ozone layer due to anthropogenic emissions of ozone depleting substances.  | kg CFC-11 eq | 2.56E-08              | 2.24E-11           | 1.44E-14           | 1.04E-12    | 2.56E-08 |
| <b>Primary energy demand</b><br>Energy consumption at the source.  | MJ           | 1.75E+03              | 5.17E+02           | 5.32E+01           | 9.16E+00    | 2.33E+03 |
| <b>Net freshwater usage</b><br>Freshwater used and otherwise not recoverable.  | kg           | 1.10E+03              | 1.69E+02           | 7.95E+00           | 1.30E+01    | 1.29E+03 |

\*Methods: TRACI 2.1

### Global warming potential summary



## ADDITIONAL ENVIRONMENTAL INFORMATION

**Indoor air:** Steelcase seating products are certified with SCS's Indoor Advantage Gold™ program, conforming to the ANSI/BIFMA Furniture Emissions Standard (M7.1/X7.1-2011 R2021) and CDPH/EHLB Standard Method (CA 01350) v1.2-2017 for seating. The certification can be found [here](#).

## REFERENCES

Life Cycle Assessment, LCA Report for Steelcase. WAP Sustainability Consulting. August 2023.

NSF Certification Policies for Environmental Product Declarations (EPD). November 1, 2022.

ISO 14025:2006 Environmental Labels and Declarations – Type III Environmental Declarations – Principles and Procedures.

ISO 14040:2006 Environmental Management – Life Cycle Assessment – Principles and Framework, Requirements and Guidelines.

ISO 14044:2006 Environmental Management – Life cycle assessment – Requirements and Guidelines.

ISO 14044: 2006/ Amd 1:2017 Environmental Management – Life cycle assessment – Requirements and Guidelines – Amendment 1.

Product Category Rule for Environmental Product Declarations, BIFMA PCR for Seating: UNCPC 3811 (ext. 2020-111)

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