

Think[®]

AMERICAS, APAC



About this product

Think's[®] award-winning design re-imagined what an office chair could do, and how sustainable it could be. It's simple, weight activated controls allow anyone, anywhere to get comfortable and get to work.

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

Date of Issue: March 8, 2023
Date of Expiration: March 8, 2028

Learn more

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

About this document

This declaration describes the Life Cycle Assessment of the Think office chair produced for the Americas and APAC markets by Steelcase Inc. in Mexico, China, India, and Malaysia. 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 and business-to-consumer communication.

ASSESSMENT OVERVIEW

EPD commissioner	Steelcase® Inc
Corporate Address	901 44th Street SE Grand Rapids, Michigan 49508-7594 United States
Product group	Seating
Product name	Think
Product intended use	Office chair
Product reference service life	10 years
Reference standards	ISO 14025, ISO 14040, ISO 14044
EPD scope	Cradle to grave
EPD number	EPD10814
Date of issuance	March 8, 2023
Date of expiration	March 8, 2028
EPD type	Product specific
EPD Product Coverage	Think task chair/stool for the Americas and APAC markets, including the following codes: 465A000, 465A300, 465B000, 465B300
Intended audience	Business to business and business to consumer
Year of reported manufacturer data	2021
Functional unit	One unit of seating to seat one individual for a reference service life of 10 years
Applicable markets/regions	Americas, APAC
LCA software and database version	GaBi 10.6.2.9; GaBi database, 2022.2
LCIA methodology and version number	TRACI 2.1 and CML 2001-October 2012
Program administrator	NSF Certification LLC 789 N. Dixboro, Ann Arbor, MI 48105 www.nsf.org
Reference PCR and version number	BIFMA PCR for Seating: UNCPC 3811 (BIFMA PCR, 2020)
PCR reviewer	Review Panel Chaired by Dr. Thomas Gloria
EPD reviewer	External review conducted by: Jack Geibig, jgeibig@ecoform.com  This declaration and its Life Cycle Assessment was independently verified in accordance with ISO standards 14040 (2006), 14044 (2006) and 14025 (2006), and BIFMA PCR for Seating UNCPC 3811 (2020).
LCA reviewer	External review conducted by: Jack Geibig, jgeibig@ecoform.com  The product Life Cycle Assessment was conducted in accordance with ISO 14044, and the reference PCR.
Disclaimer	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.

ASSESSMENT PARAMETERS

Functional unit

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

Product scope

One Think stool, produced in the Americas (product number 465B000), with an aluminum base, upholstered back and seat, hard casters, 4D arms, lumbar assembly, and a headrest was modeled for this EPD. This office chair configuration is determined to be representative of all configurations produced in the Americas and is considered to have the highest impacts of all configurations produced in this region, making this a conservative estimate.

One Think stool, produced in APAC (product number 465B000), with an aluminum base, upholstered back and seat, hard casters, 4D arms, lumbar assembly, and a headrest was modeled for this EPD. This office chair configuration is determined to be representative of all configurations produced in APAC and is considered to have the highest impacts of all configurations produced in this region, making this a conservative estimate.



<u>Manufacturing location</u>	<u>Product SKUs within the variation allowance</u>	<u>Applicable markets and regions</u>
Reynosa, Mexico	465A000, 465A300, 465B000, 465B300	Americas
Dongguan, China Pune, India Kuala Lumpur, Malaysia	465A000, 465A300, 465B000, 465B300	APAC




Assessment goal and scope

The potential environmental impacts of Think 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 included in this assessment follow the BIFMA PCR for Seating: UNCPC 3811 2020. Life cycle stages and phases are presented according to the PCR for seating.

	Stage	Status
 <p>Cradle to inbound gate MATERIALS ACQUISITION</p> <p>Raw material extraction, pre-processing and transportation of materials to suppliers.</p>	A1. Raw material supply	✓
	A2. Transport	✓
 <p>Gate to gate PRODUCTION PROCESS</p> <p>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>Gate to grave DISTRIBUTION, USE AND END OF LIFE</p> <p>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	✓
	Beyond the boundary	D. Reuse/recovery

AMERICAS CONFIGURATION RESULTS

The product composition, packaging composition, recycled content, and recyclability visuals below relate specifically to the configuration with the highest impacts made in the Americas region, consisting of a stool with an aluminum base, upholstered back and seat, hard casters, 4D arms, lumbar assembly, and a headrest.

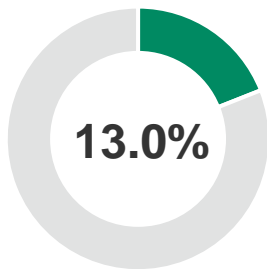
Product composition

Material	Weight (kg)	Weight (%)	Resource Type
Steel	7.909	35.60%	Recycled, virgin non-renewable
Nylon (PA6 and PA66)	6.177	27.84%	Virgin non-renewable
Aluminum	3.637	16.40%	Recycled, virgin non-renewable
Polypropylene (PP)	1.729	7.80%	Virgin non-renewable
Polyurethane (PU)	1.264	5.70%	Virgin non-renewable
Polyoxymethylene (POM)	0.275	1.20%	Virgin non-renewable
Polyester Fabric	0.253	1.10%	Virgin non-renewable
Other	0.946	4.30%	Virgin non-renewable
Total	22.191	100%	

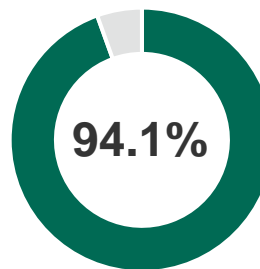
Product packaging composition

Material	Weight (kg)	Weight (%)	Resource Type
Cardboard	4.233	70.69%	Renewable
Paper	1.112	18.58%	Renewable
LDPE	0.568	9.48%	Non-renewable
Fiberboard	0.073	1.21%	Renewable
PE	0.002	0.03%	Non-renewable
HDPE	0.000	0.01%	Non-renewable
Total	5.988	100.00%	

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.

**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.

Results for the configuration with the highest impacts produced in the Americas consisting of a stool with an aluminum base, upholstered back and seat, hard casters, 4D arms, lumbar assembly, and a headrest are shown below.

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	
*Global warming potential (100 years) Warming of the atmosphere caused by the global release of greenhouse gases.	kg CO2 eq	1.08E+02	2.50E+01	7.66E+00	6.17E+00	1.47E+02
*Acidification Emissions that increase the acidity of the environment due to various chemical reactions and/or biological activity, or by natural circumstances.	kg SO2 eq	3.09E-01	1.41E-01	4.88E-02	8.42E-03	5.07E-01
*Photochemical ozone creation (Smog) Through various chemical reactions, which occur between nitrogen oxides (NOx) and volatile organic compounds (VOCs) in sunlight.	kg O3 eq	4.33E+00	2.33E+00	1.08E+00	8.52E-02	7.83E+00
*Eutrophication Enrichment of an aquatic ecosystem with nutrients (nitrates, phosphates) that accelerate biological productivity and an undesirable accumulation of algal biomass.	kg N eq	6.72E+00	5.71E+00	5.99E-01	3.98E-01	1.34E+01
*Ozone depletion Reduction of the stratospheric ozone layer due to anthropogenic emissions of ozone depleting substances.	kg CFC-11 eq	1.90E-10	7.43E-10	1.43E-14	3.57E-14	9.34E-10
Primary energy demand Energy consumption at the source.	MJ	2.02E+03	7.25E+02	1.11E+02	1.80E+01	2.88E+03
Net freshwater usage Freshwater used and otherwise not recoverable.	kg	8.00E+02	2.16E+02	1.42E+01	1.29E+01	1.04E+03

t | *Methods: TRACI 2.1

Global warming potential summary



APAC CONFIGURATION RESULTS

The product composition, packaging composition, recycled content, and recyclability visuals below relate specifically to the configuration with the highest impacts made in APAC, consisting of a stool with an aluminum base, upholstered back and seat, hard casters, 4D arms, lumbar assembly, and a headrest.

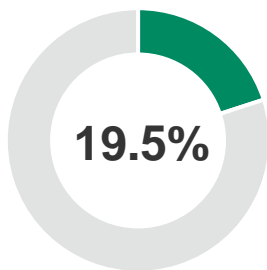
Product composition

Material	Weight (kg)	Weight (%)	Resource Type
Nylon (PA6 and PA66)	6.844	31.61%	Virgin non-renewable
Steel	5.696	26.31%	Recycled, virgin non-renewable
Aluminum	5.547	25.62%	Recycled, non-renewable
Polypropylene (PP)	1.490	6.88%	Virgin non-renewable
Polyurethane (PU)	0.811	3.75%	Virgin non-renewable
Polyoxymethylene (POM)	0.754	3.48%	Virgin non-renewable
Polyester Fabric	0.272	1.26%	Virgin non-renewable
Other	0.235	1.08%	Virgin non-renewable
Total	21.649	100%	

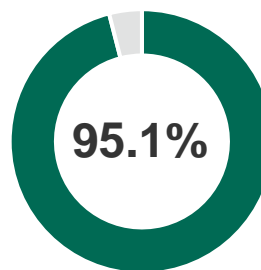
Product packaging composition

Material	Weight (kg)	Weight (%)	Resource Type
Cardboard	3.370	90.72%	Renewable
Polythylene (PE)	0.294	7.91%	Non-renewable
Paper	0.051	1.36%	Renewable
Total	3.715	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.

**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.

Results for the configuration with the highest impacts produced in the APAC consisting of a stool with an aluminum base, upholstered back and seat, hard casters, 4D arms, lumbar assembly, and a headrest are shown below.

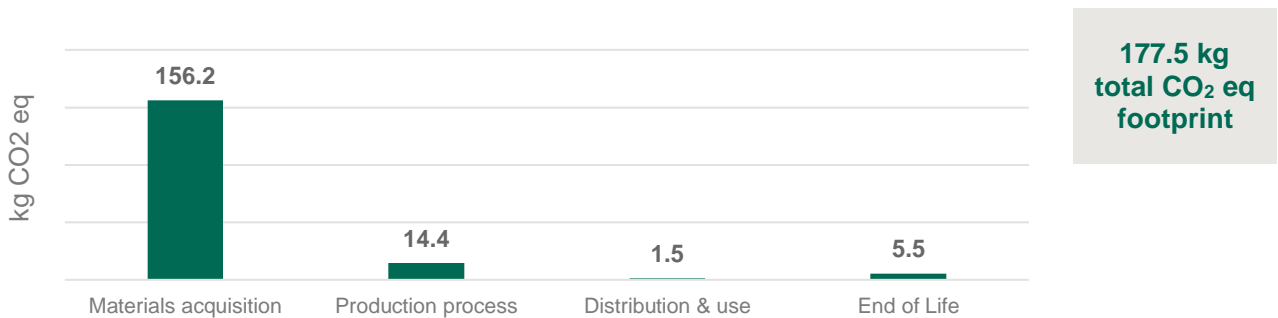
Life cycle impact by category and stage

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	
*Global warming potential (100 years) Warming of the atmosphere caused by the global release of greenhouse gases.	kg CO2 eq	1.56E+02	1.44E+01	1.51E+00	5.46E+00	1.77E+02
*Acidification Emissions that increase the acidity of the environment due to various chemical reactions and/or biological activity, or by natural circumstances.	kg SO2 eq	5.66E-01	7.58E-02	1.79E-02	7.74E-03	6.67E-01
*Photochemical ozone creation (Smog) Through various chemical reactions, which occur between nitrogen oxides (NOx) and volatile organic compounds (VOCs) in sunlight.	kg O3 eq	7.69E+00	1.10E+00	3.98E-01	9.31E-02	9.28E+00
*Eutrophication Enrichment of an aquatic ecosystem with nutrients (nitrates, phosphates) that accelerate biological productivity and an undesirable accumulation of algal biomass.	kg N eq	1.42E+01	1.71E+00	1.60E-01	4.10E-01	1.65E+01
*Ozone depletion Reduction of the stratospheric ozone layer due to anthropogenic emissions of ozone depleting substances.	kg CFC-11 eq	9.06E-11	3.34E-10	2.94E-15	4.08E-14	4.24E-10
Primary energy demand Energy consumption at the source.	MJ	2.36E+03	4.17E+02	2.06E+01	1.79E+01	2.81E+03
Net freshwater usage Freshwater used and otherwise not recoverable.	kg	7.02E+02	5.83E+01	3.18E-01	1.28E+01	7.74E+02

*Methods: TRACI 2.1

Global warming potential summary



REFERENCES

Life Cycle Assessment, LCA Report for Steelcase. WAP Sustainability Consulting. November 2022.

NSF BIFMA Product Category Rule (PCR) for Seating: UNCPC 3811, Version 3. September 2020.

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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