

Steelcase Series® 1

APAC



About this product

Steelcase Series® 1 delivers on what's important — performance, style and choice. It retains everything that's valued in a chair, while making it attainable for everyone.

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

Date of Issue: October 5, 2026
Date of Expiration: October 5, 2031

Learn more

- Explore Steelcase environmental philosophy and commitments [overview](#).
- Find product details and sustainability certifications on [APAC product page](#) at 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 Series 1 office chair produced for the APAC market by Steelcase Inc. in Malaysia and India. The assessment is performed according to the ISO standards 14040 (2006), 14044 (2006) and 14025 (2006) and BIFMA PCR for Seating: UNCPC 3811 v4 to generate an EPD for business-to-business 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	Series 1
Product intended use	Office chair
Product reference service life	10 years
Reference standards	ISO 14025, ISO 14040, ISO 14044, ISO 21930
EPD scope	Cradle-to-gate A1-A3 with options A4-A5, B1, B4, C1-C4, and optionally D
EPD number	EPD11370
Date of issuance	October 5, 2026
Date of expiration	October 5, 2031
EPD type	Product specific
EPD Product Coverage	Series 1 for the APAC market
Intended audience	Business to business (B2B)
Year of reported manufacturer data	2025
Functional unit	One unit of seating to seat one individual for a reference service life of 10 years
Applicable markets/regions	APAC
LCA software and database version	GaBi 10.6.2.9; GaBi database, 2022.2
LCIA methodology and version number	TRACI 2.2, CML2001, IPCC AR6, ISO 21930
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 v4 (2025)
PCR reviewer	Review Panel Chaired by Dr. Thomas Gloria
EPD reviewer	External review conducted by:  Jim Mellentine, Thrive ESG This declaration and its Life Cycle Assessment was independently verified in accordance with ISO standards 14040 (2006), 14044 (2006), 14025 (2006), BIFMA PCR for Seating UNCPC 3811 v4 (2025), and ISO 21930.
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-gate A1-A3 with options A4-A5, B1, B4, C1-C4, and optionally D. 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 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 is required to fulfill the functional unit.

Product scope

One Series 1 task chair (product number 435A00), with 3D Microknit back, upholstered seat, hard casters, 4D arms and a plastic base was modeled for this EPD. This style number is the top selling product in the region.



One Series 1 stool (product number 435B00), with 3D Microknit back, upholstered seat, hard casters, 4D arms, a headrest, and a polished aluminum base. This style number is considered to have the highest environmental impacts.



<u>Manufacturing location</u>	<u>Product SKUs within the variation allowance</u>	<u>Applicable markets and regions</u>
Puchong, Malaysia Pune, India	Series 1 (435A00, 435B00)	APAC

Assessment goal and scope

The potential environmental impacts of Series 1 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 v4 (2025). Material acquisition and pre-processing (including transportation), production, distribution, use and end-of-life are assessed for the seating product, except the following use stages that are excluded per the PCR: maintenance, repair, refurbishment, and operational energy use and water.

Series 1 seating products are manufactured in multiple production facilities and are supplied through regionally differentiated supply chains. As a result, upstream data inputs such as material sourcing, recycled content availability, transportation distances, and energy grid mixes are modelled using region-specific datasets and primary supplier information where available. Consequently, differences in Life Cycle Inventory inputs arising from regional manufacturing and supply chain conditions lead to variations in environmental impact results.

Assessment boundary

The Life Cycle Assessment considers the full life cycle of the product from cradle to gate A1-A3 with options A4-A5, B1, B4, C1-C4, and optionally D. Life cycle stages included in this assessment follow the BIFMA PCR for Seating: UNCPC 3811 v4 (2025). Life cycle stages and phases are presented according to the PCR for seating.

	Stage	Status
 Cradle to inbound gate MATERIALS ACQUISITION Raw material extraction and pre-processing.	A1. Raw material supply	✓
	A2. Transport	✓
 Gate to gate PRODUCTION PROCESS External and internal manufacturing of products, ancillary materials, parts, packaging.	A3. Manufacturing	✓
 Gate to grave DISTRIBUTION, USE AND END OF LIFE Distribution of products, installation, use and end of life.	A4. Transport	✓
	A5. Installation	✓
	B1. Use	✓
	B2. Maintenance/cleaning	MND
	B3. Repair	MND
	B4. Replacement	✓
	B5. Refurbishment	MND
	B6. Operational energy use	MND
	B7. Operational water use	MND
	C1. Disassembly	✓
	C2. Transport	✓
	C3. Waste processing	✓
	C4. Disposal	✓
Beyond the boundary	D. Reuse/recovery	MND

TASK CHAIR RESULTS

The product composition, packaging composition, recycled content, and recyclability visuals below relate specifically to the top selling configuration of Series 1 consisting of 3D Microknit back, upholstered seat, hard casters, 4D arms and a plastic base produced in Puchong, Malaysia and Pune, India for the APAC market. Product numbers represented by these results include: 435A00.

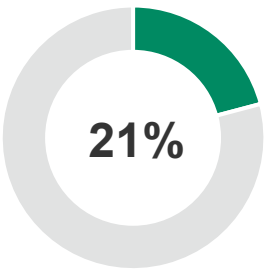
Malaysia Version

Results shown below are for the top selling configuration of one Series 1 chair 435A00, produced in Puchong, Malaysia for the APAC market, consisting of 3D Microknit back, upholstered seat, hard casters, 4D arms and a plastic base.

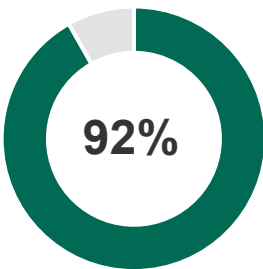
Product composition			Post-consumer		Pre-consumer	
Material	Weight (kg)	Weight (%)	%	Weight (kg)	%	Weight (kg)
Nylon	5.462	43.4%	0	0	30.1%	1.641
Steel	3.273	26.0%	10.3%	0.338	9.6%	0.312
PP	2.122	16.9%	0	0	0	0
PU Foam	0.723	5.8%	0	0	0	0
Aluminum	0.659	5.2%	24%	0.158	27%	0.178
Other plastics	0.243	1.9%	0	0	0	0
Fabric	0.108	0.9%	0	0	0	0
Total	12.588	100%	3.9%	0.496	16.9%	2.131

Packaging composition			Post-consumer		Pre-consumer	
Material	Weight (kg)	Weight (%)	%	Weight (kg)	%	Weight (kg)
Cardboard	4.1	97.16%	40%	1.64	0	0
LDPE	0.12	2.84%	0	0	0	0
Total	4.22	100%	38.9%	1.64	0	0

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. Excluding packaging.

**Recyclability rate is the maximum amount of the product that is recyclable, based on the availability of recycling facilities in the regions and the ability of the product to be disassembled. Per the requirements of the PCR, the end-of-life results presented in this EPD were calculated using the US EPA's Wam Model within the 2020 Municipal Solid Waste Report for parts that can be disassembled. Excludes packaging.

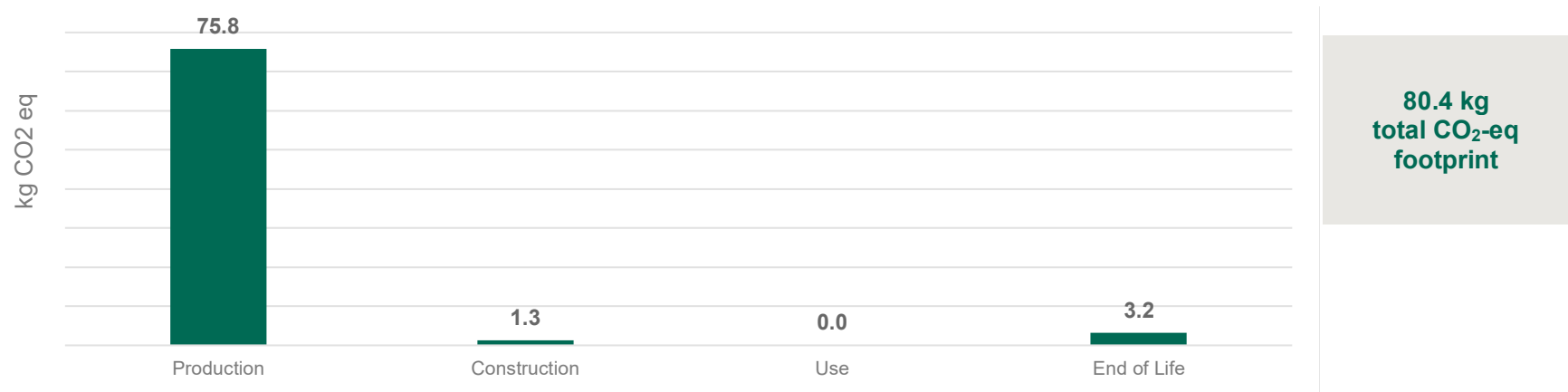
Life cycle impact by category and stage

Environmental impacts were calculated using the GaBi software platform. Impact results according to the BIFMA PCR have been calculated using TRACI 2.2, IPCC AR6 characterization factors, CML 2001, and ISO 21930 for multiple indicators. Results presented in this report are one unit of seating to seat one individual for a reference service life of 10 years. Additionally, the results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks. Use stage modules B2, B3, B5-B7 not declared.

Methods: IPCC AR6, TRACI 2.2, ISO 21930, CML 2001

		Production	Construction	Use		End of life					
Environmental impact indicators	Unit	A1 - A3	A4	A5	B1	B4	C1	C2	C3	C4	Totals
(GWP) Global warming potential 100 years excludes biogenic carbon	kg CO ₂ eq	7.58E+01	2.64E-01	1.08E+00	0	0	0	7.21E-02	2.90E+00	2.53E-01	8.04E+01
(GWP) Global warming potential 100 years includes biogenic carbon	kg CO ₂ eq	6.77E+01	2.65E-01	1.77E+00	0	0	0	7.44E-02	2.90E+00	2.56E-01	7.30E+01
(AP) Acidification potential	kg SO ₂ eq	2.53E-01	1.10E-03	7.15E-04	0	0	0	7.73E-04	3.15E-03	1.19E-03	2.60E-01
(POCP) Photochemical ozone creation (Smog)	kg O ₃ eq	3.67E+00	2.70E-02	1.77E-02	0	0	0	1.94E-02	1.01E-01	2.16E-02	3.86E+00
(EP) Eutrophication - freshwater	kg P eq	3.48E-04	1.62E-07	5.59E-06	0	0	0	9.22E-09	2.08E-08	6.87E-05	4.23E-04
(EP) Eutrophication - marine	kg N eq	1.11E-01	9.77E-04	5.31E-04	0	0	0	7.04E-04	2.84E-03	6.00E-04	1.17E-01
(ODP) Ozone depletion	kg CFC 11-eq	6.66E-08	9.06E-14	5.80E-13	0	0	0	2.06E-13	9.07E-12	6.21E-12	6.66E-08
Carbon emissions and removals											
(BCRP) Biogenic carbon removal from product	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(BCEP) Biogenic carbon emission from product	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(BCRK) Biogenic carbon removal from packaging	kg CO2eq	6.46E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	6.46E+00
(BCEK) Biogenic carbon emission from packaging	kg CO2eq	0.00E+00	0.00E+00	6.46E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	6.46E+00
(BCEW) Biogenic carbon emission from combustion of renewable waste used in production	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(CCE) Calcination carbon emissions	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(CCR) Carbonation carbon removal	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(CWNr) Carbon emission from combustion of non-renewable waste used in production	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Output flows and waste categories											
(HWD) Hazardous waste disposed	kg	3.89E-06	6.99E-10	2.98E-10	0	0	0	5.78E-11	5.61E-10	1.09E-09	3.89E-06
(NHWD) Non-hazardous waste disposed	kg	4.84E+00	3.83E-04	8.80E-01	0	0	0	4.49E-05	9.05E-02	9.47E+00	1.53E+01
(HLRW) High-level radioactive waste, conditioned, to final repository	kg	1.62E-05	1.20E-08	1.47E-08	0	0	0	1.06E-09	4.12E-08	4.15E-08	1.63E-05
(ILLRW) Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	1.39E-02	1.01E-05	1.63E-05	0	0	0	8.90E-07	3.49E-05	3.59E-05	1.40E-02
(CRU) Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(MFR) Materials for recycling	kg	1.17E+00	0.00E+00	2.81E+00	0	0	0	0.00E+00	1.30E+00	0.00E+00	5.28E+00
(MER) Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(EEE) Recovered electrical energy exported from the product system	MJ	4.62E-01	0.00E+00	6.31E-01	0	0	0	0.00E+00	6.78E+00	0.00E+00	7.87E+00
(EET) Recovered thermal energy exported from the product system	MJ	8.22E-01	0.00E+00	1.14E+00	0	0	0	0.00E+00	5.73E+00	0.00E+00	7.69E+00
Resource use indicators											
(RPRr) Renewable primary resources used as energy carrier	MJ	1.52E+02	1.28E-01	1.71E-01	0	0	0	7.77E-03	2.23E-01	5.80E-01	1.53E+02
(RPRm) Renewable primary resources with energy content used as material	MJ	5.74E+01	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	5.74E+01
(NRPRr) Non-renewable primary resources used as energy carrier	MJ	7.28E+02	3.34E+00	1.56E+00	0	0	0	9.64E-01	1.98E+00	3.67E+00	7.40E+02
(NRPRm) Non-renewable primary resources with energy content used as material	MJ	2.42E+02	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	2.42E+02
(SM) Secondary materials	kg	4.82E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	4.82E+00
(RSF) Renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(NRSF) Non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(RE) Recovered energy	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(FW) Use of net freshwater resources including water from electricity generation	m ³	3.78E-01	1.00E-04	1.32E-03	0	0	0	1.08E-05	7.66E-03	9.50E-04	3.88E-01
Primary energy demand (renewable-nonrenewable energy and materials)	MJ	1.18E+03	3.46E+00	1.73E+00	0	0	0	9.72E-01	2.20E+00	4.25E+00	1.19E+03
(ADP) Abiotic depletion potential fossil	MJ	1.17E+03	3.31E+00	1.51E+00	0	0	0	9.62E-01	1.88E+00	3.57E+00	1.18E+03

Global warming potential summary



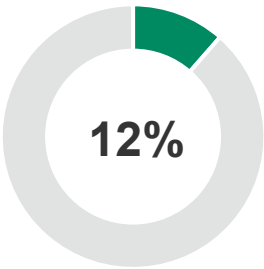
India Version

Results shown below are for the top selling configuration of one Series 1 chair 435A00, produced in Pune, India for the India market, consisting of 3D Microknit back, upholstered seat, hard casters, 4D arms and a plastic base.

Product composition			Post-consumer		Pre-consumer	
Material	Weight (kg)	Weight (%)	%	Weight (kg)	%	Weight (kg)
Nylon	5.462	43.3%	0	0	8.24%	0.450
Steel	3.274	26.0%	10.4%	0.342	9.63%	0.315
PP	2.122	16.8%	0	0	0	0
PU Foam	0.723	5.7%	0	0	0	0
Aluminum	0.659	5.2%	24%	0.158	27%	0.178
Other plastics	0.262	2.1%	0	0	0	0
Fabric	0.108	0.9%	0	0	0	0
Total	12.608	100%	4.0%	0.500	7.5%	0.943

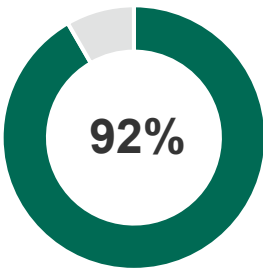
Packaging composition			Post-consumer		Pre-consumer	
Material	Weight (kg)	Weight (%)	%	Weight (kg)	%	Weight (kg)
Cardboard	2.98	93.7%	40%	1.192	0	0
LDPE	0.2	6.3%	0	0	0	0
Total	3.18	100%	37.5%	1.192	0	0

Product recycled content* and recyclability** summary



TOTAL RECYCLED
CONTENT*

*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. Excluding packaging.



RECYCLABILITY
BY WEIGHT**

**Recyclability rate is the maximum amount of the product that is recyclable, based on the availability of recycling facilities in the regions and the ability of the product to be disassembled. Per the requirements of the PCR, the end-of-life results presented in this EPD were calculated using the US EPA’s Warm Model within the 2020 Municipal Solid Waste Report for parts that can be disassembled. Excludes packaging.

Environmental Product Declaration

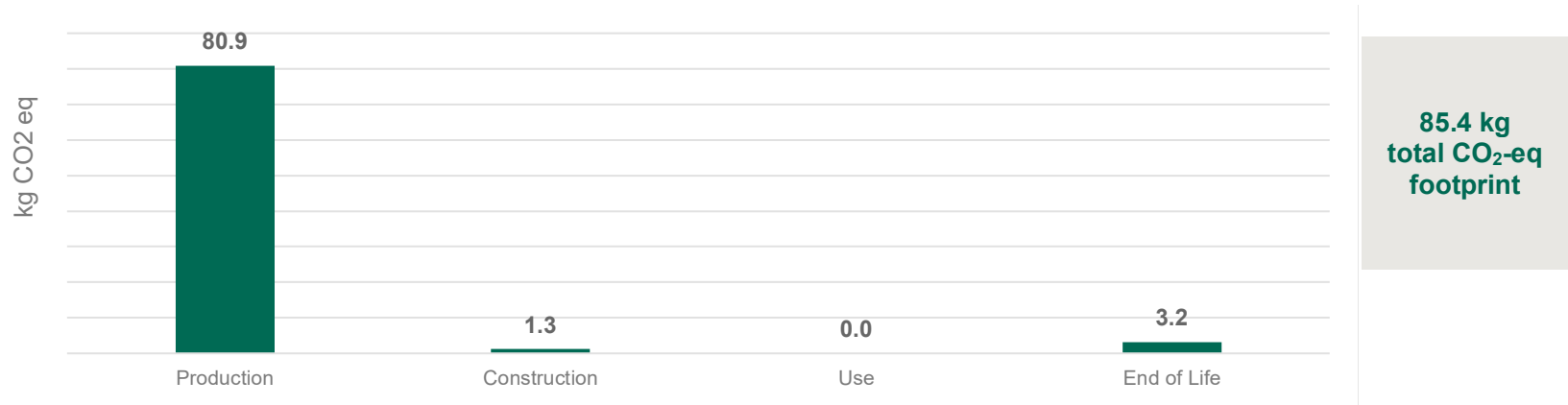


Environmental impacts were calculated using the GaBi software platform. Impact results according to the BIFMA PCR have been calculated using TRACI 2.2, IPCC AR6 characterization factors, CML 2001, and ISO 21930 for multiple indicators. Results presented in this report are one unit of seating to seat one individual for a reference service life of 10 years. Additionally, the results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks. Use stage modules B2, B3, B5-B7 not declared.

Methods: IPCC AR6, TRACI 2.2, ISO 21930, CML 2001

		Production	Construction	Use		End of life					
Environmental impact indicators	Unit	A1 - A3	A4	A5	B1	B4	C1	C2	C3	C4	Totals
(GWP) Global warming potential 100 years excludes biogenic carbon	kg CO ₂ eq	8.09E+01	4.65E-01	8.32E-01	0	0	0	7.22E-02	2.88E+00	2.57E-01	8.54E+01
(GWP) Global warming potential 100 years includes biogenic carbon	kg CO ₂ eq	7.50E+01	4.67E-01	1.33E+00	0	0	0	7.45E-02	2.88E+00	2.59E-01	8.00E+01
(AP) Acidification potential	kg SO ₂ eq	3.02E-01	1.74E-03	5.48E-04	0	0	0	7.74E-04	3.10E-03	1.20E-03	3.10E-01
(POCP) Photochemical ozone creation (Smog)	kg O ₃ eq	4.13E+00	4.13E-02	1.33E-02	0	0	0	1.94E-02	9.90E-02	2.18E-02	4.32E+00
(EP) Eutrophication - freshwater	kg P eq	2.59E-04	2.94E-07	4.84E-06	0	0	0	9.24E-09	2.37E-08	6.80E-05	3.32E-04
(EP) Eutrophication - marine	kg N eq	1.25E-01	1.57E-03	3.98E-04	0	0	0	7.05E-04	2.79E-03	6.05E-04	1.31E-01
(ODP) Ozone depletion	kg CFC 11-eq	6.79E-08	1.61E-13	4.63E-13	0	0	0	2.06E-13	9.07E-12	6.50E-12	6.79E-08
Carbon emissions and removals											
(BCRP) Biogenic carbon removal from product	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(BCEP) Biogenic carbon emission from product	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(BCRK) Biogenic carbon removal from packaging	kg CO2eq	4.70E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	4.70E+00
(BCEK) Biogenic carbon emission from packaging	kg CO2eq	0.00E+00	0.00E+00	4.70E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	4.70E+00
(BCEW) Biogenic carbon emission from combustion of renewable waste used in production	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(CCE) Calcination carbon emissions	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(CCR) Carbonation carbon removal	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(CWNR) Carbon emission from combustion of non-renewable waste used in production	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Output flows and waste categories											
(HWD) Hazardous waste disposed	kg	3.78E-06	1.24E-09	2.40E-10	0	0	0	5.79E-11	5.59E-10	1.10E-09	3.78E-06
(NHWD) Non-hazardous waste disposed	kg	4.54E+00	6.85E-04	7.28E-01	0	0	0	4.50E-05	9.10E-02	9.50E+00	1.49E+01
(HLRW) High-level radioactive waste, conditioned, to final repository	kg	1.72E-05	2.13E-08	1.16E-08	0	0	0	1.06E-09	4.09E-08	4.22E-08	1.73E-05
(ILLRW) Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	1.46E-02	1.79E-05	1.28E-05	0	0	0	8.91E-07	3.47E-05	3.65E-05	1.47E-02
(CRU) Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(MFR) Materials for recycling	kg	1.21E+00	0.00E+00	2.05E+00	0	0	0	0.00E+00	1.29E+00	0.00E+00	4.55E+00
(MER) Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(EEE) Recovered electrical energy exported from the product system	MJ	4.64E-01	0.00E+00	5.40E-01	0	0	0	0.00E+00	6.72E+00	0.00E+00	7.72E+00
(EET) Recovered thermal energy exported from the product system	MJ	8.27E-01	0.00E+00	9.75E-01	0	0	0	0.00E+00	5.69E+00	0.00E+00	7.49E+00
Resource use indicators											
(RPRr) Renewable primary resources used as energy carrier	MJ	1.47E+02	2.32E-01	1.37E-01	0	0	0	7.78E-03	2.22E-01	5.87E-01	1.48E+02
(RPRm) Renewable primary resources with energy content used as material	MJ	4.17E+01	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	4.17E+01
(NRPRr) Non-renewable primary resources used as energy carrier	MJ	7.62E+02	5.90E+00	1.20E+00	0	0	0	9.66E-01	1.97E+00	3.71E+00	7.76E+02
(NRPRm) Non-renewable primary resources with energy content used as material	MJ	2.75E+02	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	2.75E+02
(SM) Secondary materials	kg	3.34E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	3.34E+00
(RSF) Renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(NRSF) Non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(RE) Recovered energy	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(FW) Use of net freshwater resources including water from electricity generation	m ³	3.73E-01	1.80E-04	1.07E-03	0	0	0	1.08E-05	7.59E-03	9.84E-04	3.83E-01
Primary energy demand (renewable-nonrenewable energy and materials)	MJ	1.23E+03	6.13E+00	1.34E+00	0	0	0	9.73E-01	2.19E+00	4.30E+00	1.24E+03
(ADP) Abiotic depletion potential fossil	MJ	1.27E+03	5.85E+00	1.16E+00	0	0	0	9.63E-01	1.87E+00	3.61E+00	1.28E+03

Global warming potential summary



TECHNICAL INFORMATION AND SCENARIOS FOR MODULES BEYOND THE FACTORY GATE

A4: Transport to the installation site

Parameter	Malaysia		India	
	Value per product	Value per product	Value per product	Value per product
Transportation type	Truck trailer	Ship	Truck trailer	Ship
Fuel consumption (l/km)	0.42 diesel	130 heavy fuel oil	0.42 diesel	130 heavy fuel oil
Distance*	107 km	3,866 km	208 km	3 km

*Weighted average distance per product market share

A5: Installation in the building

Parameter	Malaysia	India
	Value per functional unit	Value per functional unit
Installation Assumptions	No product waste Installed with hand tools	No product waste Installed with hand tools
Energy use for installation	0 kWh	0 kWh
Transportation type for installation waste	Truck	Truck
Fuel consumption (l/km)	0.42 diesel	0.42 diesel
Distance	32.2 km	32.2 km
Packaging to recycling	2.81 kg	2.06 kg
Packaging to energy recovery	0.28 kg	0.22 kg
Packaging to landfill	1.13 kg	0.9 kg

C1- C4: End-of-life

Parameter	Malaysia	India
	Value per functional unit	Value per functional unit
Method of deconstruction	Hand tools	Hand tools
Method of recycling	Mechanical recycling	Mechanical recycling
Method of energy recovery	Incineration	Incineration
Final disposal of remaining parts	Landfilling	Landfilling
Transportation type	Truck	Truck
Fuel consumption (l/km)	0.42 diesel	0.42 diesel
Distance to waste processing site	32.2 km	32.2 km
Weight to recycling	1.96 kg	1.96 kg
Weight to energy recovery	2.13 kg	2.13 kg
Weight to landfill	8.51 kg	8.52 kg

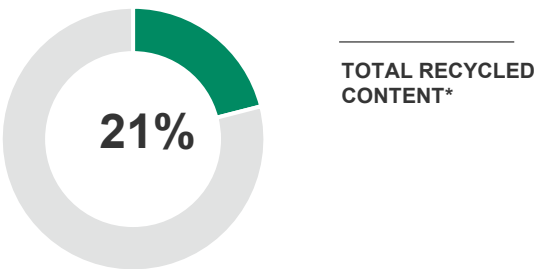
STOOL RESULTS

Results for the alternative configuration of one Series 1 chair, consisting of 3D Microknit back, upholstered seat, hard casters, 4D arms, a headrest, and a polished aluminum base. This style number is considered to have the highest environmental impacts. Product numbers represented by these results include: 435B00.

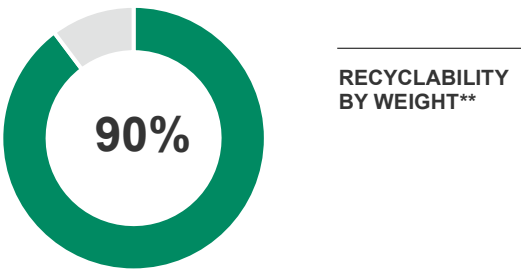
Product composition			Post-consumer		Pre-consumer	
Material	Weight (kg)	Weight (%)	%	Weight (kg)	%	Weight (kg)
Nylon	4.512	25.9%	0	0	10.0%	0.450
Steel	4.474	25.7%	11.1%	0.496	10.2%	0.458
Aluminum	4.415	25.4%	23.6%	1.039	27%	1.192
PP	2.167	12.5%	0	0	0	0
PU Foam	1.390	8.0%	0	0	0	0
Other plastics	0.285	1.6%	0	0	0	0
Fabric	0.157	0.9%	0	0	0	0
Total	17.398	100%	8.8%	1.535	12.1%	2.100

Packaging composition			Post-consumer		Pre-consumer	
Material	Weight (kg)	Weight (%)	%	Weight (kg)	%	Weight (kg)
Cardboard	4.68	97.5%	40%	1.872	0	0
LDPE	0.12	2.5%	0	0	0	0
Total	4.8	100%	39%	1.872	0	0

Product recycled content* and recyclability** summary



*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. Per the requirements of the PCR, the end-of-life results presented in this EPD were calculated using the US EPA's Warm Model within the 2020 Municipal Solid Waste Report for parts that can be disassembled. Excludes packaging.

Environmental Product Declaration

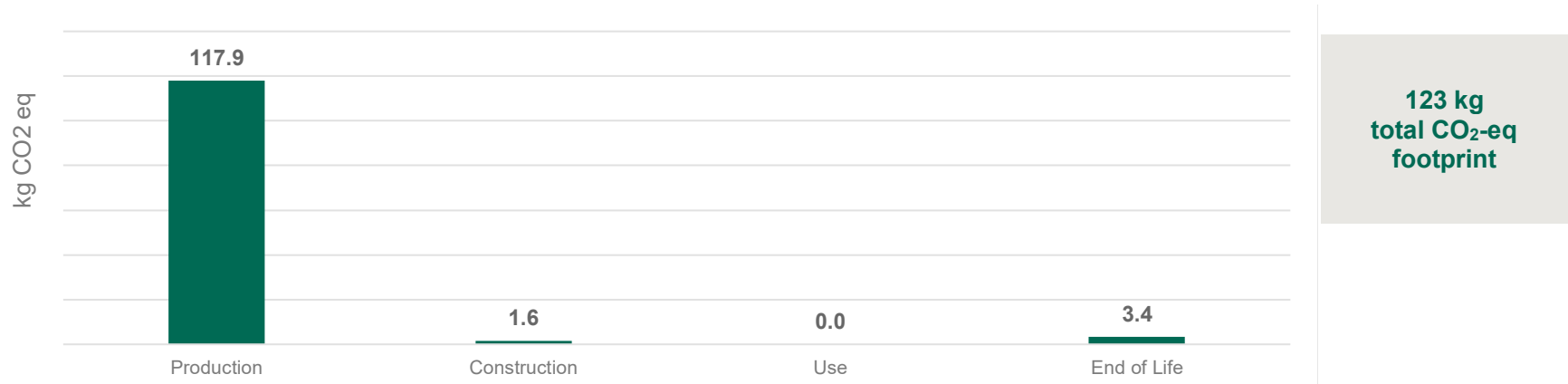


Environmental impacts were calculated using the GaBi software platform. Impact results according to the BIFMA PCR have been calculated using TRACI 2.2, IPCC AR6 characterization factors, CML 2001, and ISO 21930 for multiple indicators. Results presented in this report are one unit of seating to seat one individual for a reference service life of 10 years. Additionally, the results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks. Use stage modules B2, B3, B5-B7 not declared.

Methods: IPCC AR6, TRACI 2.2, ISO 21930, CML 2001

		Production	Construction	Use		End of life					
Environmental impact indicators	Unit	A1 - A3	A4	A5	B1	B4	C1	C2	C3	C4	Totals
(GWP) Global warming potential 100 years excludes biogenic carbon	kg CO ₂ eq	1.18E+02	3.49E-01	1.23E+00	0	0	0	9.95E-02	2.97E+00	3.19E-01	1.23E+02
(GWP) Global warming potential 100 years includes biogenic carbon	kg CO ₂ eq	1.09E+02	3.50E-01	2.01E+00	0	0	0	1.03E-01	2.97E+00	3.20E-01	1.14E+02
(AP) Acidification potential	kg SO ₂ eq	4.13E-01	1.46E-03	8.12E-04	0	0	0	1.06E-03	3.11E-03	1.54E-03	4.21E-01
(POCP) Photochemical ozone creation (Smog)	kg O ₃ eq	5.93E+00	3.56E-02	2.02E-02	0	0	0	2.65E-02	9.74E-02	2.77E-02	6.13E+00
(EP) Eutrophication - freshwater	kg P eq	3.98E-04	2.14E-07	6.26E-06	0	0	0	1.37E-08	2.85E-08	6.73E-05	4.72E-04
(EP) Eutrophication - marine	kg N eq	1.74E-01	1.29E-03	6.04E-04	0	0	0	9.61E-04	2.74E-03	7.71E-04	1.81E-01
(ODP) Ozone depletion	kg CFC 11-eq	1.32E-07	1.20E-13	6.56E-13	0	0	0	2.78E-13	1.19E-11	5.74E-12	1.32E-07
Carbon emissions and removals											
(BCRP) Biogenic carbon removal from product	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(BCEP) Biogenic carbon emission from product	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(BCRK) Biogenic carbon removal from packaging	kg CO2eq	7.38E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	7.38E+00
(BCEK) Biogenic carbon emission from packaging	kg CO2eq	0.00E+00	0.00E+00	7.38E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	7.38E+00
(BCEW) Biogenic carbon emission from combustion of renewable waste used in production	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(CCE) Calcination carbon emissions	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(CCR) Carbonation carbon removal	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(CWNR) Carbon emission from combustion of non-renewable waste used in production	kg CO2eq	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Output flows and waste categories											
(HWD) Hazardous waste disposed	kg	5.40E-06	9.23E-10	3.37E-10	0	0	0	8.42E-11	6.25E-10	1.35E-09	5.40E-06
(NHWD) Non-hazardous waste disposed	kg	1.28E+01	5.06E-04	9.91E-01	0	0	0	6.38E-05	1.80E-01	1.27E+01	2.66E+01
(HLRW) High-level radioactive waste, conditioned, to final repository	kg	2.60E-05	1.59E-08	1.66E-08	0	0	0	1.54E-09	4.83E-08	5.03E-08	2.61E-05
(ILLRW) Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	2.32E-02	1.34E-05	1.85E-05	0	0	0	1.29E-06	4.14E-05	4.40E-05	2.33E-02
(CRU) Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(MFR) Materials for recycling	kg	1.29E+00	0.00E+00	3.20E+00	0	0	0	0.00E+00	2.16E+00	0.00E+00	6.65E+00
(MER) Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(EEE) Recovered electrical energy exported from the product system	MJ	4.55E-01	0.00E+00	7.08E-01	0	0	0	0.00E+00	6.69E+00	0.00E+00	7.85E+00
(EET) Recovered thermal energy exported from the product system	MJ	8.09E-01	0.00E+00	1.28E+00	0	0	0	0.00E+00	6.13E+00	0.00E+00	8.22E+00
Resource use indicators											
(RPRr) Renewable primary resources used as energy carrier	MJ	3.00E+02	1.70E-01	1.93E-01	0	0	0	1.15E-02	2.68E-01	7.38E-01	3.01E+02
(RPRm) Renewable primary resources with energy content used as material	MJ	6.55E+01	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	6.55E+01
(NRPRr) Non-renewable primary resources used as energy carrier	MJ	1.18E+03	4.41E+00	1.77E+00	0	0	0	1.33E+00	2.44E+00	4.68E+00	1.19E+03
(NRPRm) Non-renewable primary resources with energy content used as material	MJ	2.67E+02	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	2.67E+02
(SM) Secondary materials	kg	6.61E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	6.61E+00
(RSF) Renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(NRSF) Non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(RE) Recovered energy	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(FW) Use of net freshwater resources including water from electricity generation	m ³	5.77E-01	1.32E-04	1.49E-03	0	0	0	1.54E-05	8.89E-03	9.94E-04	5.88E-01
Primary energy demand (renewable-nonrenewable energy and materials)	MJ	1.81E+03	4.58E+00	1.96E+00	0	0	0	1.34E+00	2.71E+00	5.42E+00	1.83E+03
(ADP) Abiotic depletion potential fossil	MJ	1.64E+03	4.37E+00	1.72E+00	0	0	0	1.32E+00	2.32E+00	4.56E+00	1.66E+03

Global warming potential summary



TECHNICAL INFORMATION AND SCENARIOS FOR MODULES BEYOND THE FACTORY GATE

A4: Transport to the installation site

Parameter	Value per product	Value per product
Transportation type	Truck trailer	Ship
Fuel consumption (l/km)	0.42 diesel	130 heavy fuel oil
Distance*	107 km	3,866 km

*Weighted average distance per product market share

A5: Installation in the building

Parameter	Value per functional unit
Installation Assumptions	No product waste Installed with hand tools
Energy use for installation	0 kWh
Transportation type for installation waste	Truck
Fuel consumption (l/km)	0.42 diesel
Distance	32.2 km
Packaging to recycling	3.21 kg
Packaging to energy recovery	0.32 kg
Packaging to landfill	1.27 kg

C1- C4: End-of-life

Parameter	Value per functional unit
Method of deconstruction	Hand tools
Method of recycling	Mechanical recycling
Method of energy recovery	Incineration
Final disposal of remaining parts	Landfilling
Transportation type	Truck
Fuel consumption (l/km)	0.42 diesel
Distance to waste processing site	32.2 km
Weight to recycling	2.99 kg
Weight to energy recovery	2.88 kg
Weight to landfill	11.52 kg

This EPD 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, the specifics of the product modeled, and the software tool used to conduct the study.

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](#).

Improper disposal of product: At the end of its useful life, manage Steelcase products correctly in accordance with all applicable regulations for effective end-of-life management, including recycling, disposal, or incineration. Improper management may result in the release of chemicals that may represent a risk to the environment and human health & safety.

REFERENCES

Life Cycle Assessment, LCA Report for Steelcase. WAP Sustainability Consulting November 2022. *Updated by Steelcase March 2024.*

NSF BIFMA Product Category Rule (PCR) for Seating 1103-25: UNCPC 3811 v4.

ANSI/BIFMA X5.5-2021, Desk and Table Products.

ANSI/BIFMA X5.6-2016 (R2021), Panel Systems.

ANSI/BIFMA X5.9, Storage Units.

ANSI/BIFMA e3, Furniture Sustainability Standard.

ACLCA Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017. May 2019

BIFMA PCR for Office Furniture Workspace V2 March 2025: UNCPC 3814

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.

ISO 21930:2017 Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services.

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



Visit steelcase.com



facebook.com/Steelcase



twitter.com/Steelcase



youtube.com/SteelcaseTV

Contact

For further questions, please contact:
epd@steelcase.com