

Gesture

Americas



PRODUCT DESCRIPTION

Inspired by the movement of the human body, Gesture is the first office chair designed to support our interactions with today's technologies and is created for the way we work today.

Features include:



- Synchronized system moving with each user to provide continuous and persistent support
- Unique arms which move like the human arm, allowing users to be supported in any position.
- The seat brings comfort all the way to the edges and features a wide variety of adjustments allowing it to fit an important palette of users and spaces.

The style selected for this Environmental Product Declaration is Gesture Americas 442A30, a task seating chair with a reference service life of more than 10 years. This chair is designed with plastic base, soft casters, upholstered seat, "Connect"360 arms, and "Connect" upholstered back. This model is manufactured in Reynosa Mexico and is produced for the American market by Steelcase Inc.

The life cycle assessment of Gesture is performed in accordance with the ISO standards 14040 (2006), 14044 (2006), 14025 (2006), and BIFMA PCR for Seating: UNCPC 3811 ext 2021-108 (2022).

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

Additional information: epd@steelcase.com
Product Sustainability certifications and information available at mindful MATERIALS:
<https://origin.build/>

EPD Commissioner	Steelcase® Inc.
Address	901 44th Street SE Grand Rapids, Michigan 49508-7594 United States
Product Group	Seating
Product Name	Gesture
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	EPD10736
EPD date of validity	May 20, 2022
EPD date of expiration	May 20, 2027
EPD Type	Product specific
EPD product coverage	The typical model chosen for this analysis is Gesture 442A30 (Americas)
Intended audience	Business to Business
Range of dataset validity	N/A
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 (North, Central, South)
LCA software and database version	SimaPro 9.1 (2019), Ecoinvent 3.6
LCA Methodology and Version Number	TRACI 2.1
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 V3 ext 2021-108
The PCR review was conducted by:	Review Panel Chaired by Dr. Thomas Gloria
<p>EPD and LCA Reviewer</p> <p>This declaration and its life cycle assessment was independently verified in accordance with ISO 14025: 2006, ISO 14040: 2006, and 14044:2006 and the reference PCR: BIFMA PCR for Seating UNCPC 381 v3 ext 2021-108 2022.</p> <p>Type of Review</p> <p>INTERNAL <input type="checkbox"/> EXTERNAL <input checked="" type="checkbox"/></p>	<p>Jack Geibig, jgeibig@ecoform.com</p>  <p>Tony Favilla, afavilla@nsf.org</p> 
The reference life cycle assessment was conducted in accordance with ISO 14040, 14044 and the reference PCR by Steelcase internal LCA team members:	Ana Leal and Leona Liu epd@steelcase.com
Disclaimer	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 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.

MATERIAL CONTENT

Functional Unit

One chair (unit of seating) designed to seat one individual for a reference service life of 10-years.

System Boundary

Cradle to Grave

Reference Flow

One Gesture chair(44230A) with

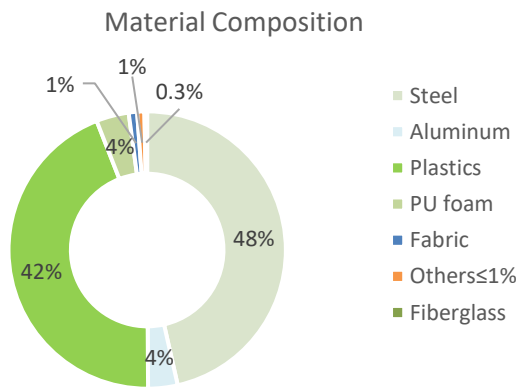
- Plastic base with casters
- Cylinder
- Mechanism
- Seat assembly
- Arm assembly 4D
- Back assembly with lumbar

The Gesture office chair style 442A30 was chosen for this study based on sales.

Note: No other styles and configurations covered.

Material	Weight (kg)	Weight (%)	Resource Type
Steel	13.485	48.3%	Virgin + Recycled content
Aluminum	0.997	3.6%	Virgin + Recycled content
Acetal	0.117	0.4%	Virgin Non-renewable
PA 6	4.941	17.7%	Virgin Non-renewable
PA6/66	0.079	0.2%	Virgin Non-renewable
PE	0.002	0%	Virgin Non-renewable
PP	6.544	23.4%	Virgin Non-renewable
PU foam	1.102	3.9%	Virgin Non-renewable
Rubber	0.003	0%	Virgin Non-renewable
Fabric	0.284	1.0%	Virgin + Recycled content
Fiberglass	0.093	0.33%	Virgin + Recycled content
TPE	0.231	0.8%	Virgin Non-renewable
Total	27.878	100%	

Packaging	Weight (kg)	Weight (%)	Resource Type
Cardboard	9.903	98.9%	Virgin + Recycled content
LDPE	0.090	0.9%	Virgin + Recycled content
Chipboard	0.018	0.2%	Virgin + Recycled content
Total	10.011	100%	



Product Environmental Data

28% Recycled Content

[DISASSEMBLY INSTRUCTIONS](#)

Functional Unit

One unit of seating to seat one individual for a reference service life of 10-years.

System Boundary

The Life Cycle assessment considers the full life cycle of the product as described below:

Cradle to Gate: Raw material extraction until a furniture component is manufactured.

Gate to Gate: Furniture components delivered to final manufacturing facility and manufacturing of the finished product.

Gate to Cradle: Product delivered for use and retired after end of useful life.

(-) Excluded from this study

Life cycle stages according to ISO 21930

Product Stage			Distribution Process Stage		Use Stage							End of Life Stage				Beyond the boundary
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C2	C4	D
Raw Material Supply	Transport	Manufacturing (Internal - External)	Transport	Installation	Use	Maintenance/Cleaning	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Disassembly	Transport	Waste Processing	Disposal	Reuse-Recovery
X	X	X	X	MND	X	X	MND	MND	MND	MND	MND	X	X	X	X	MND

The life cycle stages included in this assessment follow the BIFMA PCR for Seating: UNCPC 3811 V3. The table above identifies all the life cycles stages and phases in scope and considered in this life cycle assessment. It is important to clarify that for installation, repair, replacement, refurbishment, operational energy, and water use and benefits beyond the end-of-life, there was no data available and insufficient knowledge to evaluate these activities. Therefore, they have zero contribution to the overall life cycle assessment of the chair. These activities are marked MND in figure 3.

Goal and scope

The potential environmental impacts of Gesture (including packaging) throughout its entire life cycle – including raw materials extraction, transport, processing, external and internal production, distribution, use, and end of life – were assessed conforming to Life Cycle Assessment (LCA – ISO 14040 / 14044) (2006), BIFMA PCR for Seating: UNCPC 3811 V3ext 2021-108. This business-to-business Type III declaration conforms to ISO 14025 (2006) and concerns to the typical model number 442A30 Shell Back chair, which weighs 27.8 kg excluding packaging. The studied packaging system for this assessment is the FedEx for full assembled chair weighting 10 kg.

LCI Results

Inventory of total primary energy demand and net freshwater usage for the life cycle of Gesture Americas 442A30 in the table below.

LCI	Unit	Total	Materials	Production	Use	EOL
Non-renewable	MJ	3.20E+03	1.78E+03	1.04E+03	3.73E+02	1.38E+01
Renewable	MJ	1.98E+02	1.32E+02	6.22E+01	4.06E+00	4.26E-01
Primary Energy	MJ	3.40E+03	1.91E+03	1.10E+03	3.77E+02	1.42E+01
Net freshwater	kg	1.31E+07	5.19E+06	7.78E+06	1.23E+03	9.57E+04

Life Cycle Impact Assessment Results

Impact Categories required by BIFMA PCR for Seating: UNCPC 3811- Version 3 (ext. 2021-108)

Method: TRACI 2.1 V1.05 / US-Canadian 2008

		A1-A2	A3	A4, B1-B7	C1-C4	
Impact category	Unit	Materials	Production	Distribution & Use	EOL	TOTAL
Global warming	kg CO2 eq	9.81E+01	6.59E+01	2.32E+01	1.17E+01	1.99E+02
Acidification	kg SO2 eq	3.80E-01	4.26E-01	1.20E-01	6.39E-03	9.33E-01
Smog	kg O3 eq	4.95E+00	2.68E+00	2.99E+00	1.50E-01	1.08E+01
Eutrophication	kg N eq	1.55E-01	1.76E-01	2.84E-02	1.31E-01	4.90E-01
Ozone depletion	kg CFC-11 eq	4.38E-06	1.29E-05	5.47E-06	1.44E-07	2.29E-05

References

Life Cycle Assessment of the task chair Gesture Americas, March 2022, Steelcase, according to ISO 14040 / 14044, BIFMA PCR for Seating: UNCPC 3811 (2021).

- ISO 14025 Environmental labels and declarations – Type III environmental declarations
- ISO 14040:2006 Environmental management – Life cycle assessment – Principles and framework
- ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines

LCIA method and LCI database:

- Product Category Rule for Environmental Product Declarations, BIFMA PCR for Seating: UNCPC 3811, NSF International, Valid through September 2021.
- ILCD HANDBOOK, European Commission, Joint Research Centre, Institute for Environment and Sustainability. ILCD Handbook: General Guide for Life Cycle Assessment – Detailed Guidance. European Union, March 2010, 394p.
- IMPACT 2002+ V2.10 method: JOLLIET, O., MARGNI, M., CHARLES, R., HUMBERT, S., PAYET, J., REBITZER, G. et ROSENBAUM, R. (2003). IMPACT 2002+: A New Life Cycle Impact Assessment Methodology. International Journal of Life Cycle Assessment 8(6) p.324-330.
- Eco-Invent v3.6 LCI database: Swiss Centre for Life Cycle Inventories, Duebendorf, CH - www.ecoinvent.ch
- SimaPro 9.1, 2020: SimaPro software, version compact 9.1, PRé Consultants B.V., Amersfoort, The Netherlands, 2020

End-of-life scenario:

- Mainly based on EPA data for the American market

http://www.epa.gov/osw/nonhaz/municipal/pubs/msw_2010_rev_factsheet.pdf

- USEPA, Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI).
- USEPA, Waste Reduction Model (WARM).

Gesture disassembly instructions 2021 https://www.steelcase.com/products/office-chairs/gesture/?drawer_main=documents&draw