

# Answer Panel System

Americas



## PRODUCT DESCRIPTION

Answer desk privacy panel solves any workspace's needs with the flexibility to adapt as those needs change. The system consists of junctions, connections, skins and worksurfaces that adapts and evolve based on the user needs. This report describes the Life Cycle Assessment of the Answer Panel System produced for American markets by Steelcase Inc. in Athens, Alabama. The assessment is performed in accordance with the ISO 14040 [2006] and 14044 [2006] standards and follow the instructions from the American BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814 [BIFMA PCR, 2020] to generate an EPD for business-to-business communication.

The life cycle assessment of Answer is performed in accordance with the ISO standards 14040 (2006), 14044 (2006), 14025 (2006), and BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814 [BIFMA PCR, 2020].

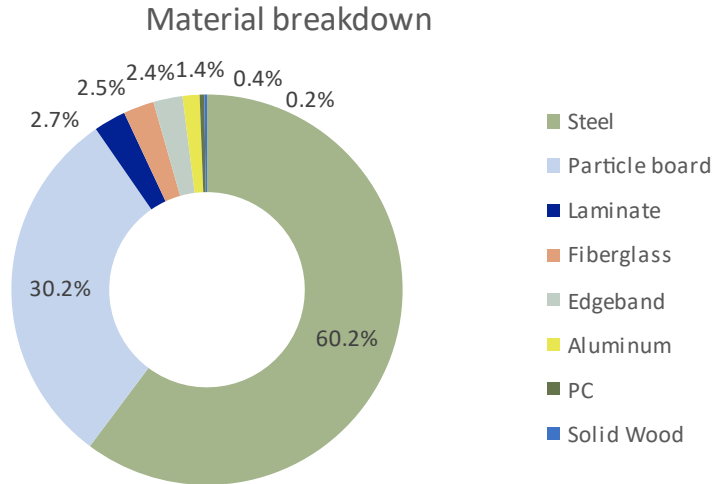
Answer is designed for an expected service life of 10 years, requiring one product to fulfill the functional unit.

Additional information: [epd@steelcase.com](mailto:epd@steelcase.com)

Product Sustainability certifications and information available at mindful MATERIALS: <https://origin.build/>

<b>EPD Commissioner</b>	<b>Steelcase® Inc.</b>
Address	901 44th Street SE Grand Rapids, Michigan 49508-7594 United States
Product Group	Office Furniture Workspace
Product Name	Answer Panel Systems
Product intended use	Workspace for one person
Product Category	Panels in addition with other office components (worksurface and storage)
Product reference service life	10 years
Reference standards	ISO 14025, ISO 14040, ISO 14044
EPD scope	Cradle to Grave
EPD number	EPD10739
Date of validity	June 07, 2022
Date of expiration	June 07, 2027
EPD Type	Product specific
EPD product coverage	The typical configuration assessed for this report is an open plan layout for the Answer Panel System divided into twenty-two sub-assemblies that consists of two panels with tack able acoustic fabric skins, L-shape desktop, and a freestanding desk as worksurface, a side pedestal, an overhead bin, and an overhead shelf as storage.
Intended audience	Business to Business
Range of dataset validity	N/A
Year of reported manufacturer data	2021
Functional Unit	One square meter (1m2) of workspace for 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
LCIA Methodology and Version Number	TRACI 2.1
Program Administrator	NSF Certification LLC 789 N. Dixboro, Ann Arbor, MI 48105 <a href="http://www.nsf.org">www.nsf.org</a>
Reference PCR and Version Number	BIFMA PCR for Workspace: UNCPC 3814 [BIFMA PCR, 2021
The PCR review was conducted by:	Review Panel Chaired by Dr. Thomas Gloria
EPD and LCA Reviewer	Jack Geibig, <a href="mailto:jgeibig@ecoform.com">jgeibig@ecoform.com</a>
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.	
Type of Review	Tony Favilla, <a href="mailto:afavilla@nsf.org">afavilla@nsf.org</a>
INTERNAL <input type="checkbox"/> EXTERNAL <input checked="" type="checkbox"/>	
The reference life cycle assessment was conducted in accordance with ISO 14040, 14044 and the reference PCR by:	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 software tool and source of the data used in the study, and the specifics of the product modeled.

MATERIAL CONTENT



48.8% Recycled Content product only

Product breakdown

Material	Weight (kg)	Weight (%)	Resource Type
Steel	132.57	60.2%	Virgin + Recycled content
Aluminum	3.09	1.4%	Virgin + Recycled content
Polycarbonate	0.84	0.4%	Virgin Non-renewable
Polyethylene foam	0.01	0.0%	Virgin Non-renewable
Particle board	66.43	30.2%	Virgin Non-renewable
Laminate	5.85	2.7%	Virgin Non-renewable
Polypropylene	5.32	2.4%	Virgin Non-renewable
Fiberglass	5.58	2.5%	Virgin + Recycled content
Solid Wood	0.48	0.2%	Virgin renewable
<b>Total</b>	<b>220.17</b>	<b>100%</b>	

## Packaging breakdown

<b>Packaging</b>	<b>Weight (kg)</b>	<b>Weight (%)</b>	<b>Resource Type</b>
Kraft unbleached	0.06	0.2%	Virgin + Recycled content
Kraft bleached	0.04	0.1%	Virgin + Recycled content
Corrugated	16.5	62%	Virgin + Recycled content
Arcel	0.44	1.6%	Virgin Non-renewable
Hardwood	1.64	6.2%	Virgin Non-renewable
LDPE	0.94	3.5%	Virgin Non-renewable
PE	3.39	12.7%	Virgin Non-renewable
PET	0.37	1.4%	Virgin Non-renewable
PS	1.00	3.7%	Virgin Non-renewable
Rubber	0.01	0.0%	Virgin Non-renewable
HDPE	2.27	8.5%	Virgin Non-renewable
<b>Total</b>	<b>26.66</b>	<b>100.0%</b>	

## Functional Unit

One square meter (1m<sup>2</sup>) of workspace for a reference service life of 10-years for one individual. One product required to fulfill the functional unit.

## Reference Flow

The typical model chosen for this analysis is an open plan layout for the Answer Panel System divided into twenty-two sub-assemblies, all covered by this assessment. The Answer Workstation configuration was chosen for this assessment based on sales.

The assessed configuration consists of two panels with tack able acoustic fabric skins, L-shape desktop, and a freestanding desk as worksurface, a side pedestal, an overhead bin, and an overhead shelf as storage. The desks are not height adjustable. Power assemblies can be added but for this assessment they are excluded. Answer does not offer any task lights.

The physical floor space of this configuration is 2.41 m<sup>2</sup> and it provides 2.96 m<sup>2</sup> of work surface and 0.28 m<sup>3</sup> of storage space. There is one freestanding desk, excluded of the floorspace estimation, as specified in PCR. If the freestanding desk was included, the floorspace would be 3.3 m<sup>2</sup>. The material composition for the product only is shown in the graphic below and details per product and packaging are broken down in the following tables.

## System Boundary

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

### **Cradle to Gate (A1-A2):**

Raw material extraction, pre-processing and transportation of materials to suppliers.

### **Gate to Gate (A3):**

Transportation of furniture components and materials from Tier 1 suppliers to Steelcase final manufacturing facility. External and internal production.

### **Gate to Grave: (A4, B1-B7, C1-C4)**

Distribution of products, installation, use and end of life.

The life cycle stages included in this assessment follow the BIFMA PCR for Workspace: UNCPC 3814 2021. In addition, the life cycle stages and phases are presented according to ISO 21930, as seen in the table below. For the stages marked with MND, there was no data available or no relevance for the assessment leading to a negligible result.

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	X	X	X	MND	MND	MND	MND	MND	X	X	X	X	MND

Goal and scope

The potential environmental impacts of Answer (incl. packaging) throughout its entire life cycle – including raw materials extraction, production, transport, use, and end of life – were assessed conforming to Life Cycle Assessment (LCA – ISO 14040 / 14044) (2006), and BIFMA PCR for Seating: UNCPC 3814 V3 (2021). This Type III declaration conforms to ISO 14025 (2006).

Primary manufacturing data is collected for 95% of the product by weight, including tier one and some tier two suppliers. In the absence of primary information, Ecoinvent database was used for secondary data.

The life cycle stages included in this assessment follow the BIFMA PCR for Seating: UNCPC 3814 V3. And the reporting format of EVS-EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declarations - Core rules for the product category of construction products. Material acquisition & pre-processing, including transportation, production, distribution, use and end-of life are assessed for the panel system.

LCI Resources

The table below presents the total primary energy and net fresh water consumed throughout the life cycle of Answer Panel System.

Resource consumption	Units	Total
Primary energy demand	MJ	18,072
Renewable	MJ	3,769
Non-Renewable	MJ	14,303
Net freshwater usage	kg	727

Life Cycle Impact Assessment Results

Impact Categories required by BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814 (ext. 2021-108)

Method: IPCC 2013 GWP 100a V1.03

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

Stages according to ISO 21930	-	A1-A2	A3	A4, B1-B7	C1-C4	A-C
Impact Category	Unit	Material Acquisition	Production	Distribution	EOL	Total
Global warming potential 100a	kg CO2 eq	8.81E+01	2.61E+02	1.96E+01	4.97E+01	4.19E+02
Acidification	kg SO2 eq	4.17E-01	1.19E-01	1.00E-01	1.85E-02	1.50E+00
POCP (Smog)	kg O3 eq	5.18E+00	2.99E+00	2.63E+00	3.60E-01	1.97E+01
Eutrophication	kg N eq	2.88E-01	4.79E-01	2.50E-02	4.54E-01	1.92E+00
Ozone depletion	kg CFC-11 eq	8.21E-06	4.75E-06	4.33E-06	4.17E-07	3.84E-05

Biogenic carbon IPCC 2013 v1.03

Impact Indicator	Unit	Materials Acquisition	Production	Distribution - Use	EOL	Total
Biomass CO2	kg	-8.31E-03	-2.21E-02	-2.71E-04	-3.96E-04	-3.11E-02

## References

- Steelcase Life Cycle Assessment of the Answer Workstation, May 2022
- 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 Office Furniture Workspace Products: UNCPC 3814 (ext. 2021-108)
- Eco-Invent v3.6 LCI database: Swiss Centre for Life Cycle Inventories, Duebendorf, CH - [www.ecoinvent.ch](http://www.ecoinvent.ch)
- SimaPro 9.1, 2020: SimaPro software, version compact 9.1, PRé Consultants B.V., Amersfoort, The Netherlands, 2020
- EPA [http://www.epa.gov/osw/nonhaz/municipal/pubs/msw\\_2010\\_rev\\_factsheet.pdf](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).