



Environmental Product Declaration

Stride® Panels Workstation

Product Description

Stride® systems furniture offers flexible space-planning solutions for a variety of design applications and work environments. Stride® offers aesthetic differentiation and increased design flexibility – from open, light-scale, collaborative work settings with lower panel heights to more private spaces with higher panels. Allsteel Stride® is certified Indoor Advantage™ Gold, BIFMA LEVEL® 3, *Cradle to Cradle Certified™* Bronze and available as FSC® Certified.

Functional Unit

The functional unit is 1 m² of floorspace, serving the function of providing office workspace for a 10-year period. The Stride Panels workstation includes panels, a height-adjustable worksurface and base, and a wood storage credenza. The reference flow for the modeling system is a configuration of six complete workstations, with panel walls, height-adjustable worksurface and base, and a wood storage credenza, and the results are normalized to 1 m² of floorspace. The configuration of six workstations occupies a total floorspace of 3.35m², with 0.93m² of worksurface and 0.39m³ of storage.

Manufacturer

At Allsteel, we believe in the power of solving problems with people, not just for them, so we help our customers see the potential their businesses have through uncovering the possibilities their workplace possesses. By helping our customers see the connection between the work patterns of their organization and the work environment, we can show them the impact it has on business performance, and then offer solutions designed to increase comfort, promote productivity, support health, and contribute to a better work experience for overall business success.

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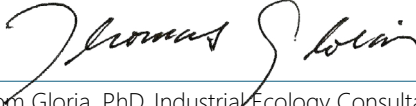

Product Category Rule

BIFMA PCR for Office Furniture Workspace Products:
UNCPC 3814, August 5, 2015.

EPD Number and Period of Validity

SCS-EPD-06063
April 8, 2020 - April 7, 2025

Allsteel®

Declaration Owner:	Allsteel Inc.
Address:	2210 Second Avenue, Muscatine, Iowa 52761
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LCA Practitioner:	Aditi Suresh
LCA Software:	OpenLCA v1.9
Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071	<input type="checkbox"/> Internal <input checked="" type="checkbox"/> External
LCA Reviewer:	 _____ Tom Gloria, PhD, Industrial Ecology Consultants
Product Category Rule:	BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814
PCR Review conducted by:	Thomas P. Gloria, Ph.D. (Chair), Industrial Ecology Consultants
Independent verification of the declaration and data, according to ISO 14025 and the PCR	<input type="checkbox"/> Internal <input checked="" type="checkbox"/> External
EPD Verifier:	 _____ Tom Gloria, PhD, Industrial Ecology Consultants
Declaration Contents:	Product and Company Information.....1 Product Specifications.....3 Material Composition.....3 Life Cycle Assessment Stages.....4 Life Cycle Inventory.....4 Life Cycle Impact Assessment.....5 Additional Environmental Information.....6 References.....7

Disclaimers: This EPD conforms to ISO 14025, 14040, and 14044.

Scope of Results Reported: The PCR requirements limit the scope of the LCA metrics such that the results exclude environmental and social performance benchmarks and thresholds, and exclude impacts from the depletion of natural resources, land use ecological impacts, ocean impacts related to greenhouse gas emissions, risks from hazardous wastes and impacts linked to hazardous chemical emissions.

Accuracy of Results: Due to PCR constraints, this EPD provides estimations of potential impacts that are inherently limited in terms of accuracy.

Comparability: 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 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.

Product Specifications

Stride is a furniture collection that seamlessly integrates worksurfaces, storage, space division, and a wide range of choices within a broad surface materials palette to make a statement about your brand and workstyle. Stride works throughout the entire office to respond to changing needs, utilizing panels, desking, benching, and storage options.

Stride Panels are primarily constructed with steel, extruded aluminum, laminated particleboard worksurfaces, fabric-covered fiberglass tiles, and wood storage. Stride passes the ANSI/BIFMA X5.6 tests, demonstrating a minimum expected lifetime of 10 years under specified conditions. This EPD is based on an Open-Plan workstation configuration for six people and features height-adjustable worksurfaces and wood storage.

Tables 1 and 2. The Allsteel Stride Panels product configuration and recycled content.

Allsteel Stride Panels Workstation Physical Footprint	
Physical Floor Space Area	3.35 m ²
Physical Worksurface Area	0.93 m ²
Storage Volume	0.39 m ³

Allsteel Stride Panels Workstation Recycled Content	
Post-Consumer	14.7%
Pre-Consumer	39.0%

Materials Composition

Table 3. Material composition of Allsteel Stride Panels workstation. Results are shown on a mass basis, and as a percent of total.

Material Type	Amount (lb / six workstations)	Amount (lb / Functional Unit ¹)	Amount (%)
Steel	1,122	335	45%
Particleboard	934	279	38%
High-Pressure Laminate (HPL)	93	28	3.7%
Zamak	53	16	2.1%
ABS	52	16	2.1%
Fiberglass	49	15	2.0%
Aluminum	37	11	1.5%
Polyester fabric	34	10	1.4%
Electrical Components	35	10	1.4%
High-Density Fiberboard (HDF)	32	9.4	1.3%
Adhesive (EVA, PVA, Polyolefin, Water-based)	16	1.9	0.6%
Backer	8.0	2.4	0.32%
Hardware	5.2	1.5	0.21%
Glass-filled Nylon 6	4.1	1.2	0.17%
Hardwood	3.5	1.0	0.14%
Plastic Generic	2.6	0.78	0.10%
Glass-filled Polypropylene	0.50	0.14	0.02%
Nylon 6,6	0.20	0.07	0.01%
Total	2,481	738	100%

¹The Functional Unit is defined as 1 m² of floorspace over a ten-year period.



Total Material Components

- Steel, Aluminum, Zamak 48.6%
- Particleboard, HDF, Backer, High-Pressure Laminate 43.3%
- Fiberglass, Fabric 3.4%
- Medium density fiberboard 9.1%
- Other 4.7%

Table 4. Packaging material composition of Allsteel Stride Panels Workstation. Results are shown on a mass basis, and as a percent of total.

Packaging Material	Amount (lb / six workstations)	Amount (lb / Functional Unit ¹)	Amount (%)
Paper/Corrugated Paperboard	215	64	73%
Wood Pallets	40	12	14%
Polyethylene Film	31	10	10%
Expanded Polystyrene	4.3	1.3	1.5%
Adhesive	2.5	0.74	0.85%
Total Packaging	292	87	100%

¹The Functional Unit is defined as 1 m² of floorspace over a ten-year period.

Life Cycle Assessment Stages

Figure 1 below is a representation of the life cycle of Stride Panels. The system boundary is cradle-to-grave and includes resource extraction and processing, product manufacture and assembly, distribution/transport, use and main-tenance, and end-of-life.

Figure 1. Life cycle diagram for Allsteel Stride Panels workstation.



Life Cycle Inventory

The life cycle inventory (LCI) flows for the Allsteel Stride Panels workstation are shown in Table 5. Table 6 includes equivalency factors that were determined for the purpose of communicating critical environmental impacts in simplified terms for better understanding.

Table 5. Aggregated inventory flows and impacts for Allsteel Stride Panels workstation. Results are shown per 1 m² of floorspace, and per six workstations.

Parameters Prescribed by BIFMA PCR	Units	Total (per 1 m ² floorspace)	Total (per six workstations)
Water Use	m ³	24	81
Total Primary Energy Demand	MJ	17,000	57,000
Primary Energy Demand, Renewable	MJ	3,200	10,800
Primary Energy Demand, Non-renewable	MJ	13,800	46,000

Table 6. Translation of LCA results to familiar activities for select aggregated inventory results for Allsteel Stride Panels workstation.

Category Indicator	Life Cycle Inventory results for 1 m ² of floorspace, maintained for 10-years	Life Cycle Inventory results for six workstations, maintained for 10-years	Basis of Equivalency Factor	1 m ² of floorspace, maintained for 10-years	Six workstations, maintained for 10-years
Net Water Use	24 m ³	81 m ³	Number of cycles run in a dishwasher [1]	540	1,800
Primary Energy Demand	17,000 MJ	57,000 MJ	Number of days operating a refrigerator [2]	900	3,000
Energy Resource Depletion (SCS-002)	6,100 MJ eq	20,000 MJ eq	Number of days of operating a refrigerator [2]	320	1,100

[1] The net water use estimate is based on Energy Star-rated dishwashers and also considers the upstream water required to generate electricity to run the dishwasher. https://www.energystar.gov/index.cfm?c=dish-wash.pr_crit_dishwashers

[2] The primary energy demand estimate is based on the energy consumption for Energy Star refrigerators, using a US average electricity supply mix, and also considers the upstream energy demand for electricity generation in US. <https://www.energystar.gov/index.cfm?fuseaction=refrig.calculator>

Life Cycle Impact Assessment

Impact category indicators are calculated using the TRACI 2.1 characterization methods, including acidification potential, eutrophication potential, smog potential, ozone depletion potential, and global warming potential based on IPCC 2013, in accordance with the BIFMA PCR. Additionally, the IPCC GWP result for a 20-year time horizon is reported following the BIFMA PCR requirements for IPCC 2013. Note, biogenic carbon uptake and biomass CO₂ emissions are not included.

Table 7. Life cycle impact assessment results for the Allsteel Stride Panels workstation. Results are shown per 1 m² of floorspace for a ten-year period. Results for six workstations are presented in parenthesis.







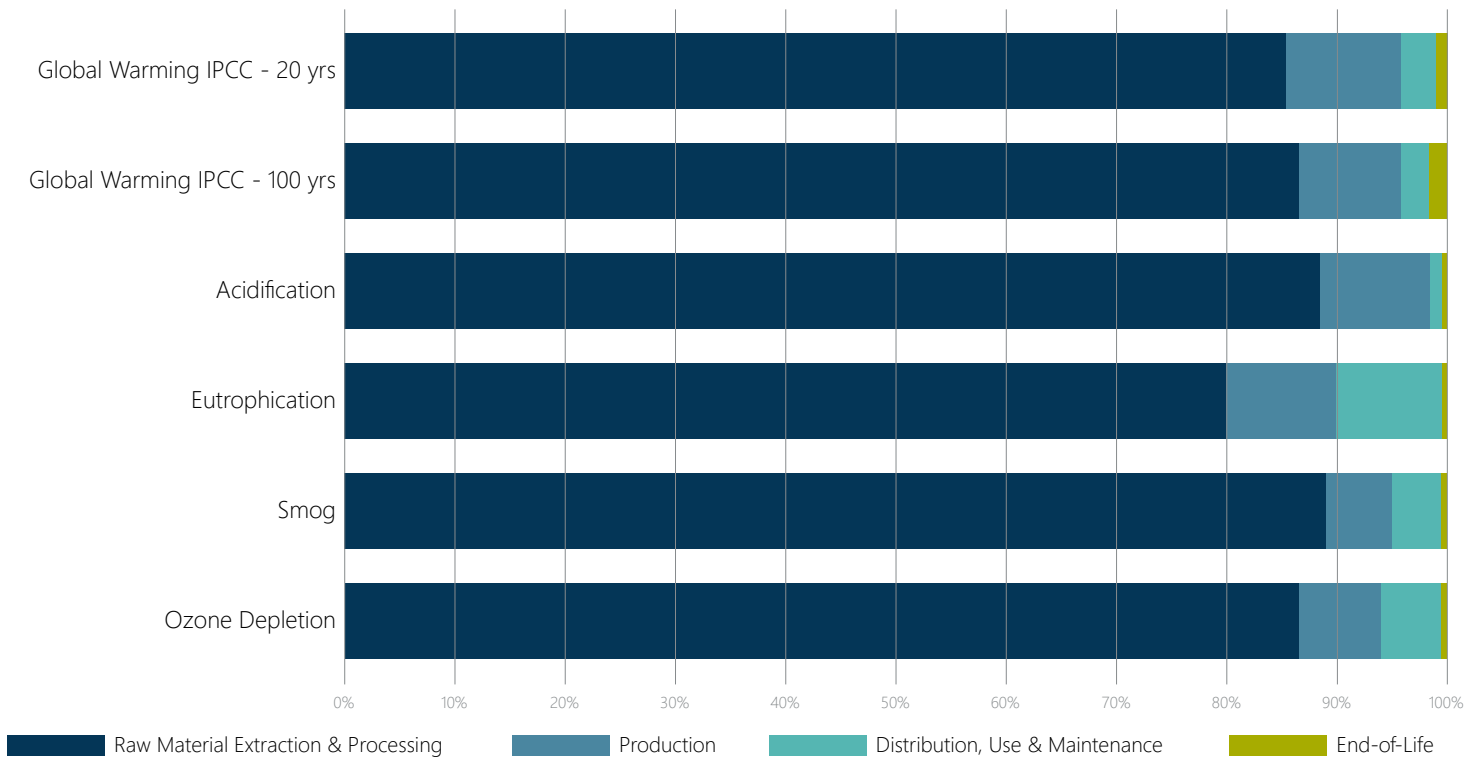
Impact Category	Unit	Raw Material Extraction & Processing	Production (Manufacturing & Assembly)	Distribution, Use & Maintenance	End-of-Life	Total
 IPCC Global Warming Potential – 20 year	kg CO ₂ eq	1,400 (4,700)	170 (580)	25 (85)	29 (150)	1,600 (5,500)
 IPCC Global Warming Potential – 100 year	kg CO ₂ eq	1,200 (4,000)	140 (450)	24 (81)	25 (81)	1,400 (4,600)
 Acidification Potential	kg SO ₂ eq	5.5 (18)	0.60 (2.0)	0.11 (0.37)	4.5x10 ⁻² (0.15)	6.3 (21)
 Eutrophication Potential	kg N eq	7.8 (26)	1.0 (3.4)	0.91 (3.0)	2.7x10 ⁻² (0.092)	9.7 (33)
 Smog Potential	kg O ₃ eq	67 (220)	4.8 (16)	2.6 (8.8)	0.94 (3.0)	75 (250)
 Ozone Depletion Potential	kg CFC-11 eq	1.0x10 ⁻⁴ (3.5x10 ⁻⁴)	1.0x10 ⁻⁶ (2.7x10 ⁻⁵)	6.2x10 ⁻⁶ (2.1x10 ⁻⁵)	1.4x10 ⁻⁶ (4.6x10 ⁻⁶)	1.2x10 ⁻⁴ (4.0x10 ⁻⁴)

Figure 2. Contribution analysis graph representing % contribution to each impact category indicator by life cycle phase.

Life Cycle Impacts of Stride Panels Workstation



Life Cycle Impact Assessment (continued)

Additional life cycle impact results are reported in Table 8 below as optional parameters of concern. These impacts are calculated using the SCS-002 framework, which augments the specified impact categories and method TRACI 2.1, identified by the BIFMA PCR.

Table 8. Life cycle impact assessment results for Allsteel Stride Panels workstation according to SCS-002 draft standard.

Impact Category (SCS-002 Parameters)	Unit	Life Cycle Impact results for 1 m ² of floorspace	Life Cycle Impact results for six workstations
Global Climate Change	(kg CO ₂ eq)	1,200	4,000
Ocean Acidification	(kg H ₂ CO ₃ eq)	1,900	6,500
Energy Resource Depletion	(MJ eq)	6,100	20,000

Results for select impact category indicators are translated to the number of miles driven in a typical passenger vehicle, and are provided to help customers interpret the scale of potential environmental impact attributed to the product.

Table 9. Equivalency factors for select life cycle impact assessment results for Stride Panels workstation.

Category Indicator	Life Cycle Impact Assessment results for 1 m ² of floorspace, maintained for 10-years	Life Cycle Impact Assessment results for six workstations, maintained for 10-years	Basis of Equivalency Factor	1 m ² of floorspace, maintained for 10-years	Six workstations, maintained for 10-years
Global Warming Potential (IPCC, 20 year time horizon)	1,600 kg CO ₂ eq	5,500 kg CO ₂ eq	Number of miles driven in a typical passenger vehicle [3]	3,850	13,000
Global Climate Change (SCS-002)	1,200 kg CO ₂ eq	4,000 kg CO ₂ eq	Number of miles driven in a typical passenger vehicle [3]	2,700	8,900

Additional Environmental Information

Allsteel makes it a priority to design products and implement processes that reduce our collective impact on the environment. Allsteel is proud to support sustainable initiatives in the building industry as a member of the U.S. Green Building Council (USGBC).

Stride is LEVEL[®] 3 certified to the ANSI/BIFMA e3 Furniture Sustainability Standard; *Cradle to Cradle Certified*[™] Bronze; SCS Indoor Advantage[™] Gold certified for indoor air quality; and available as FSC[®] Certified. Stride has the ability to contribute to several credits in the LEED[®] green building program and the WELL Building Standard[®].

[3] Average vehicle miles traveled are estimated using average US fuel economies for passenger vehicles and light trucks and the amount of carbon dioxide emitted per gallon of motor gasoline burned. <https://www.epa.gov/energy/ghg-equiv-alenciescalculator-calculations-and-references>

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Allsteel supports green initiatives in the contract furniture industry as a member of the U.S. Green Building Council. Stride is an SCS Indoor Advantage® Gold and LEVEL® 3 certified product.

