



## Environmental Product Declaration Stride<sup>®</sup> Benching

### Product Description

Stride Benching supports highly collaborative users who need dedicated spaces, as well as mobile workers who only need to touch down for part of the day. Exceptionally easy access to power and data allows people to settle in or come and go. Cantilever storage combines space division and personal storage in one functional, visually dynamic solution. And the elegantly designed open leg supports long spans, creating uninterrupted workspaces. Built-in flexibility allows the collection to adapt to your organization's evolving needs. Allsteel Stride benching is certified Indoor Advantage<sup>™</sup> Gold, BIFMA level<sup>®</sup> 2, and available as FSC<sup>®</sup> Certified.

### Functional Unit

The functional unit is 1 m<sup>2</sup> of floorspace, serving the function of providing office workspace for a 10-year period. Stride benching occupies a total floorspace of 5.6 m<sup>2</sup>, with 2.5 m<sup>2</sup> of worksurface, and 2.4 m<sup>3</sup> of storage. The reference flow for the modeling system is one complete benching system and the results are normalized to 1 m<sup>2</sup> of floorspace.

#### Disclaimers

**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. This EPD is augmented with information from draft LEO-SCS-002 standard, which is intended to promote comparison between EPDs. 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.

### Manufacturer

At Allsteel, we demystify the office planning process by helping our customers align their workplace strategy with their business strategy. With an accessible team and an adaptable portfolio of systems, seating, casegoods, tables, collaborative furniture and architectural walls, we address our customers' needs for today and tomorrow.

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### EPD Program Operator

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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-04075  
July 15, 2016 to July 14, 2021

Allsteel<sup>®</sup>

## Product Specifications

Stride Benching is a new-generation worksetting well-suited for a flexible, collaborative environment. It fosters collaboration by eliminating barriers to teamwork, supports users who spend the majority of their day away from their workspace, and can be scaled to meet the needs of a variety of workers. Stride Benching features unique storage, a range of separation options, and exceptionally easy access to power. It blends cohesively with the full Stride offering to create one beautiful, functional space.

Stride is primarily constructed with cold rolled steel, extruded aluminum, particleboard, and laminated worksurfaces. The Stride benching system passes the ANSI/BIFMA X5.5 tests, demonstrating a minimum expected lifetime of 10 years under specified conditions. This EPD is based on a bench for four occupants and the setup contains 20% Post-Consumer and 32% Pre-Consumer recycled content.

Table 1. The Allsteel Stride benching product configuration.

Allsteel Stride Benching Physical Footprints	
Physical Floor Space Area	5.6 m <sup>2</sup>
Physical Worksurface Area	2.5 m <sup>2</sup>
Storage Volume	2.4 m <sup>3</sup>

## Materials Composition

Table 2. Material composition of Allsteel Stride benching system. Results are shown on a mass basis, and as a percent of total.

Material Type	Amount (kg/1 m <sup>2</sup> floorspace)	Amount (kg/unit of benching system)	Amount (%)
Steel	59	332	56%
Particleboard	17	94	16%
Aluminum	14	76	13%
Medium density fiberboard	10	55	9.1%
Glass	3.3	18	3.1%
Zinc	2.6	15	2.4%
Laminate	0.57	3.2	0.53%
Nylon 6,6 60% glass-filled	0.38	2.1	0.35%
Backer	0.11	0.61	0.10%
ABS	0.09	0.51	0.09%
Urethane foam	0.07	0.39	0.07%
Santoprene	0.03	0.16	0.03%
<b>Total</b>	<b>107</b>	<b>597</b>	<b>100%</b>



Total Material Components

Steel	56%
Particleboard	16%
Aluminum	13%
Medium density fiberboard	9.1%
Other	6.67%

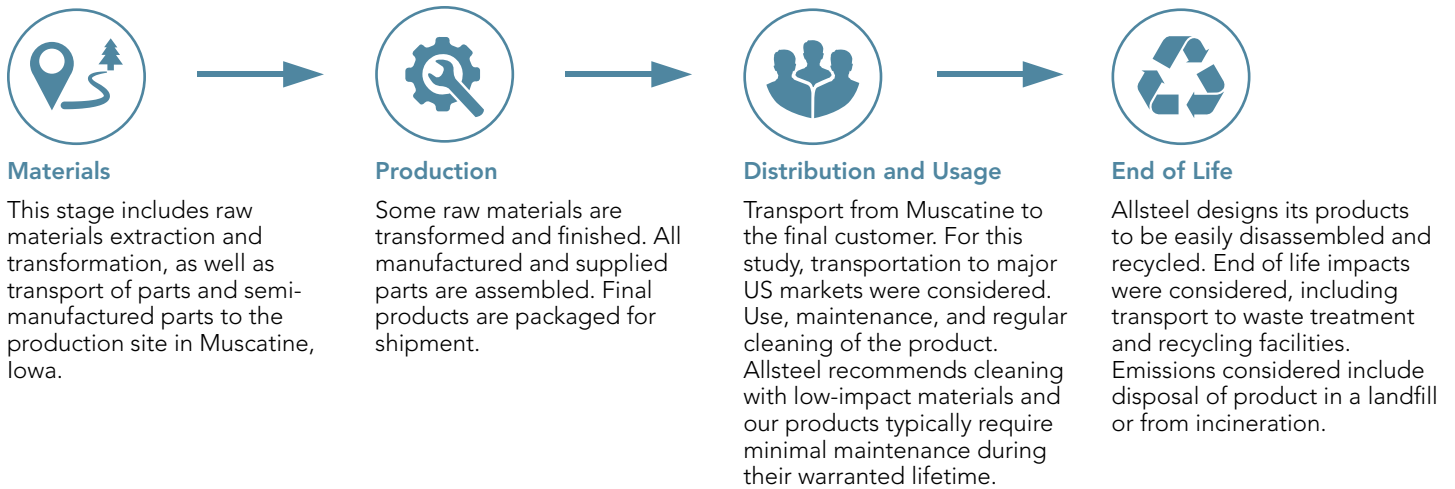
Table 3. Packaging material composition of Allsteel Stride benching system. Results are shown on a mass basis, and as a percent of total.

Packaging Material	kg/unit of benching system	% of Total
Hardwood Pallets	16	40%
Paper/Corrugated Paperboard	23	56%
Expanded Polystyrene	1.8	4%
<b>Total Packaging</b>	<b>41</b>	<b>100%</b>

## Life Cycle Assessment Stages

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

Figure 1. Life cycle diagram for Allsteel Stride benching.



## Life Cycle Inventory

The life cycle inventory (LCI) flows for the Allsteel Stride benching system are shown in Table 4. Table 5 includes equivalency factors that were determined for the purpose of communicating critical environmental impacts in simplified terms for better understanding.

Table 4. Aggregated inventory flows and impacts for Allsteel Stride benching. Results are shown per 1 m<sup>2</sup> of floorspace, and 1 unit of benching system.

Parameters Prescribed by BIFMA PCR	Units	Total (per 1 m <sup>2</sup> floorspace)	Total (per 1 unit of benching system)
Water Use	kg	3,000	16,000
Total Primary Energy Demand	MJ	6,400	35,600
Primary Energy Demand, Renewable	MJ	5,400	30,200
Primary Energy Demand, Non-renewable	MJ	1,000	5,400

Table 5. Equivalency Factors for select aggregated inventory results for Allsteel Stride benching system.

Category Indicator	Life Cycle Inventory results for 1 m <sup>2</sup> of floorspace of bench, maintained for 10-years	Life Cycle Inventory results for 1 benching system, maintained for 10-years	Basis of Equivalency Factor	1 m <sup>2</sup> of floorspace of bench, maintained for 10-years	1 benching system, maintained for 10-years
Net Water Use	3,000 kg	16,000 kg	Number of cycles run in a dishwasher	67	380
Primary Energy Demand	6,400 MJ	35,600 MJ	Number of days operating a refrigerator	340	1,900
Energy Resource Depletion (LEO-SCS-002)	2,000 MJ eq	11,200 MJ eq	Number of days of operating a refrigerator	110	600

## Life Cycle Impact Assessment

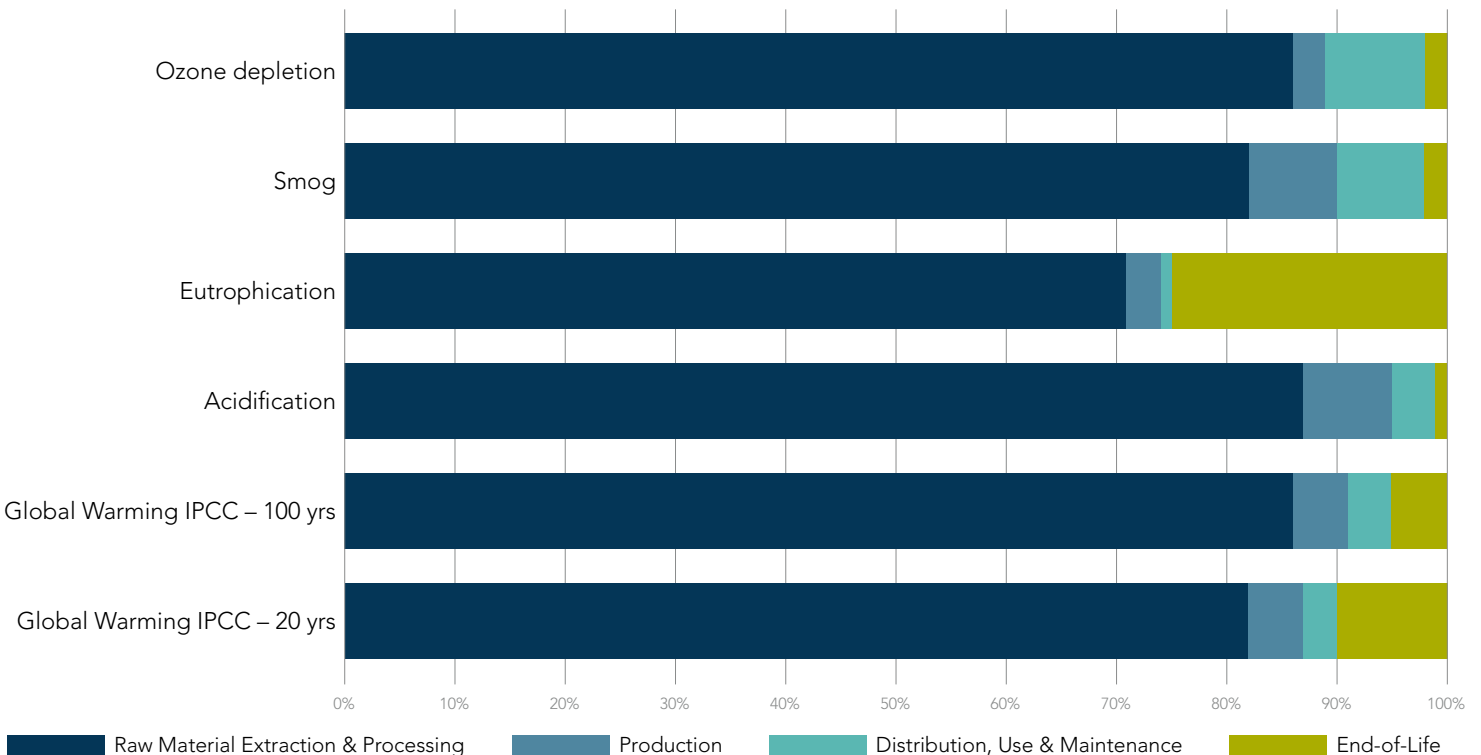
Impact category indicators are calculated using the TRACI 2.1 characterization methods, including acidification potential, eutrophication potential, smog potential, ozone depletion potential, and global warming potential based on IPCC 2013, in accordance with the BIFMA PCR. Additionally, the IPCC GWP result for a 20-year time horizon is reported following the BIFMA PCR requirements for IPCC 2013. Note, biogenic carbon uptake and biomass CO<sub>2</sub> emissions are not included.

Table 6. Life cycle impact assessment results for the Allsteel Stride benching system. Results are shown per 1 m<sup>2</sup> of floorspace. Results for 1 unit of benching system 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 <sub>2</sub> eq	360 (2,000)	21 (120)	14 (81)	45 (250)	440 (2,500)
IPCC Global Warming Potential – 100 year	kg CO <sub>2</sub> eq	320 (1,800)	18 (100)	13 (75)	17 (96)	370 (2,000)
Acidification Potential	kg SO <sub>2</sub> eq	1.4 (7.8)	0.13 (0.73)	0.064 (0.36)	1.7x10 <sup>-2</sup> (0.10)	1.6 (8.7)
Eutrophication Potential	kg N eq	1.4 (7.7)	0.033 (0.19)	0.019 (0.11)	0.27 (1.5)	1.7 (9.6)
Smog Potential	kg O <sub>3</sub> eq	17 (93)	1.7 (9.7)	1.7 (9.5)	0.46 (2.6)	20 (110)
Ozone Depletion Potential	kg CFC-11 eq	2.6x10 <sup>-5</sup> (1.4x10 <sup>-4</sup> )	1.0x10 <sup>-6</sup> (5.8x10 <sup>-6</sup> )	2.8x10 <sup>-6</sup> (1.6x10 <sup>-5</sup> )	4.7x10 <sup>-7</sup> (2.6x10 <sup>-6</sup> )	3.0x10 <sup>-5</sup> (1.7x10 <sup>-4</sup> )

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

### Life Cycle Impacts of Stride Benching System



## Life Cycle Impact Assessment (continued)

Additional life cycle impact results are reported in Table 7 below as optional parameters of concern. These impacts are calculated using the LEO-SCS-002 framework, which augments the specified impact categories and method TRACI 2.1, identified by the BIFMA PCR.

Table 7. Life cycle impact assessment results for Allsteel Stride benching according to LEO-SCS-002 draft standard (June 2014).

Impact Category (LEO SCS-002 Parameters)	Unit	Life Cycle Impact results for 1m <sup>2</sup> of floorspace	Life Cycle Impact results for 1 benching system
Global Climate Change	(kg CO <sub>2</sub> eq)	360	2,000
Arctic Climate Change	(kg CO <sub>2</sub> eq)	440	2,460
Ocean Acidification	(kg H <sub>2</sub> CO <sub>3</sub> eq)	450	2,500
Energy Resource Depletion	(MJ eq)	2,000	11,200

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.

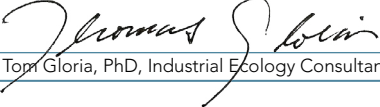
Table 8. Equivalency factors for select life cycle impact assessment results for Stride benching system.

Category Indicator	Life Cycle Impact Assessment results for 1 m <sup>2</sup> of floorspace of bench, maintained for 10-years	Life Cycle Impact Assessment results for 1 benching system, maintained for 10-years	Basis of Equivalency Factor	1 m <sup>2</sup> of floorspace of bench, maintained for 10-years	1 benching system, maintained for 10-years
Global Warming Potential (IPCC, 20 year time horizon)	320 kg CO <sub>2</sub> eq	1,800 kg CO <sub>2</sub> eq	Number of miles driven in a typical passenger vehicle	750	4,200
Global Climate Change (LEO-SCS-002)	360 kg CO <sub>2</sub> eq	2,000 kg CO <sub>2</sub> eq	Number of miles driven in a typical passenger vehicle	860	4,800

## Additional Environmental Information

Allsteel makes it a priority to design product 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 benching is level<sup>®</sup> 2 certified to the ANSI/BIFMA e3 Furniture Sustainability Standard; SCS Indoor Advantage<sup>™</sup> Gold certified for indoor air quality; and available as FSC<sup>®</sup> Certified. Stride has the ability to contribute to several credits in the LEED<sup>®</sup> green building program and the WELL Building Standard<sup>®</sup>.

Approved July 15, 2016   Valid until July 14, 2021	
PCR Review was conducted by	Thomas P. Gloria, PhD, Industrial Ecology Consultants t.gloria@industrial-ecology.com
Independent verification of the declaration and data, according to ISO 14025-2006	<input type="checkbox"/> Internal <input checked="" type="checkbox"/> External
Third party verifier	 Tom Gloria, PhD, Industrial Ecology Consultants

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### All together now.

At Allsteel, we believe that together, if we widen our view, we can make a real and lasting difference for our environment. That's why we ensure that all materials balance performance and environmental responsibility. Relevant, durable, high-quality products guarantee years of use and reuse. For details, visit [allsteeloffice.com/alltogethernow](http://allsteeloffice.com/alltogethernow).

# Allsteel®

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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® 2 certified product.

