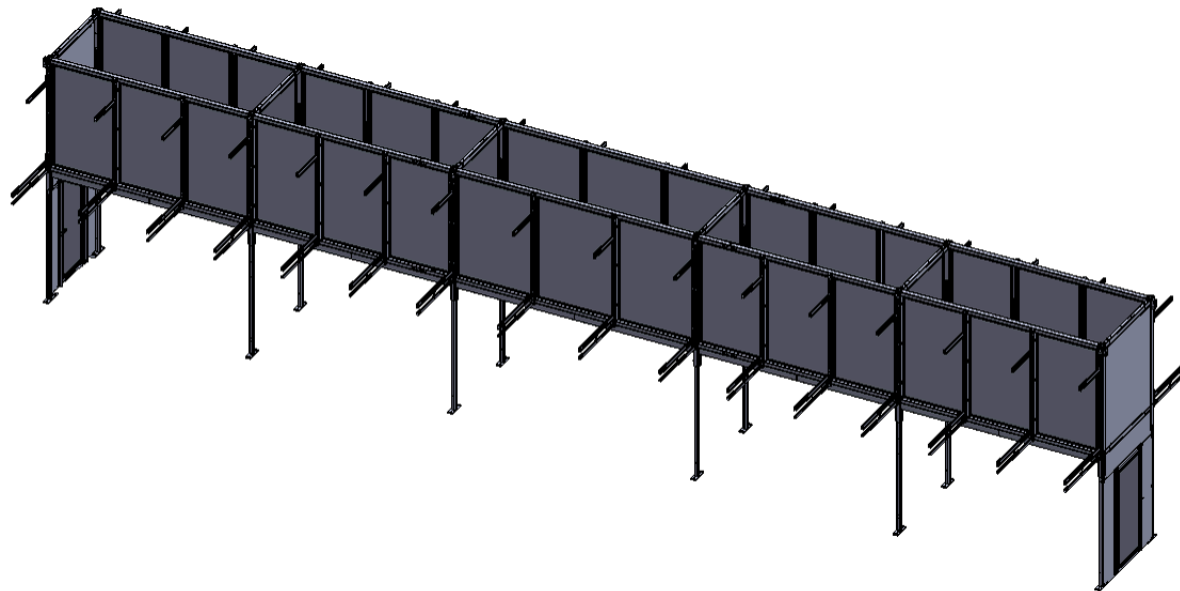


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 14025 AND ISO 21930:2017

SmartEPD-2026-129-0849-01

Aisle Containment Structures



Maysteel



Date of Issue: Apr 30, 2026
Expiration: Apr 30, 2031
Last updated: Apr 30, 2026



General Information

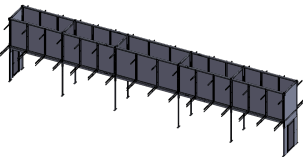
Maysteel Industries

6199 County Rd W Allenton, Wisconsin 53002-9545

262-251-1632

erichh@damac.com

[maysteel.com](https://www.maysteel.com)



Product Name:	Aisle Containment Structures
Declared Unit:	1 unit 1 aisle assembly
Declaration Number:	SmartEPD-2026-129-0849-01
Date of Issue:	April 30, 2026
Expiration:	April 30, 2031
Last updated:	April 30, 2026
EPD Scope:	Cradle to gate A1 - A3
Market(s) of Applicability:	Global

General Organization Information

Maysteel is a manufacturer and supplier of a large portfolio of products used in data centers, such as server racks and aisle containment partitions, offered in various types and sizes. They deliver scalable fabrication for data centers, critical infrastructure and diversified industrial markets. From custom enclosures and high-density server racks to aisle containment systems, they provide the capacity, operational discipline and execution reliability required for complex, high-volume programs. Maysteel's current company footprint spans the USA and Mexico, with five manufacturing locations in Wisconsin, Colorado, Texas, Virginia, and Monterrey.

Further information can be found at: <https://www.maysteel.com/>

Limitations, Liability and Ownership

Environmental Product Declarations from different programs (following ISO 14025) may not be comparable. Comparison of the environmental performance of products using EPD information shall be based on the product's use and impacts at the building level. EPDs that do not cover all life cycle stages (e.g., cradle-to-grave) shall not be used to make comparisons without additional context and assumptions.

EPD comparability is only possible when all relevant life cycle stages are included and equivalent data quality, system boundaries, and assessment methods are used.

Variations in results may occur due to differences in background LCI datasets, regional factors, and LCA modeling approaches or software tools.

The EPD Owner has sole ownership, liability, and responsibility for the content of this EPD.

Reference Standards

Standard(s):	ISO 14025 and ISO 21930:2017
--------------	------------------------------

Core PCR:

Smart EPD® Part A Product Category Rules for Building and Construction Products and Services, 1000, v1.2

Date of issue: March 14, 2025

Valid until: March 14, 2030

Sub-category PCR review panel:

📄 Contact Smart EPD for more information.

General Program Instructions:

📄 Smart EPD General Program Instructions v.2.0, March 2025

Verification Information

LCA Author/Creator:

🌐 Gia Valappil
📄 John Beath Environmental
✉ gia.valappil@beath.us

EPD Program Operator:

📄 Smart EPD
✉ info@smartepd.com
🌐 www.smartepd.com
📍 585 Grove St., Ste. 145, Herndon, VA 20170, USA

Verification:

Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071:

🌐 Hong Jin | 📄 AmSpec LLC | ✉ hong.jin@amspecgroup.com

External

Independent external verification of EPD, according to ISO 14025 and reference PCR(s):

🌐 Hong Jin | 📄 AmSpec LLC | ✉ hong.jin@amspecgroup.com

External

Product Information

Declared Unit:

1 unit 1 aisle assembly

Mass:

4174 kg

Product Specificity:

✗ Product Average
✓ Product Specific

Variation in GWP Result (Products):

0% to 0%

Variation in GWP Result (Facilities):

+16% to +38%

Product Description

This Environmental Product Declaration (EPD) covers Aisle Containment Structure (or Aisle Assembly) products #667492, #667493, #667505, and #667506, all manufactured by Maysteel in the United States. The products are a combination of powder-coated steel structures and panels composed of an extruded aluminum frame with acrylonitrile butadiene styrene (ABS) corners and polycarbonate windows, varying slightly in configuration but ultimately serving the same purpose. All the products are manufactured at three Maysteel facilities: Allenton, WI, Garland, TX, and Lynchburg, VA. The material composition remains consistent between facilities, but slight differences in the process material types and quantities exist. While the EPD is assessed per single aisle assembly, given that many of these products are custom in nature, a table of results per kilogram is also provided so that life cycle impacts for different product configurations may be calculated.

The product masses & dimensions are as follows:

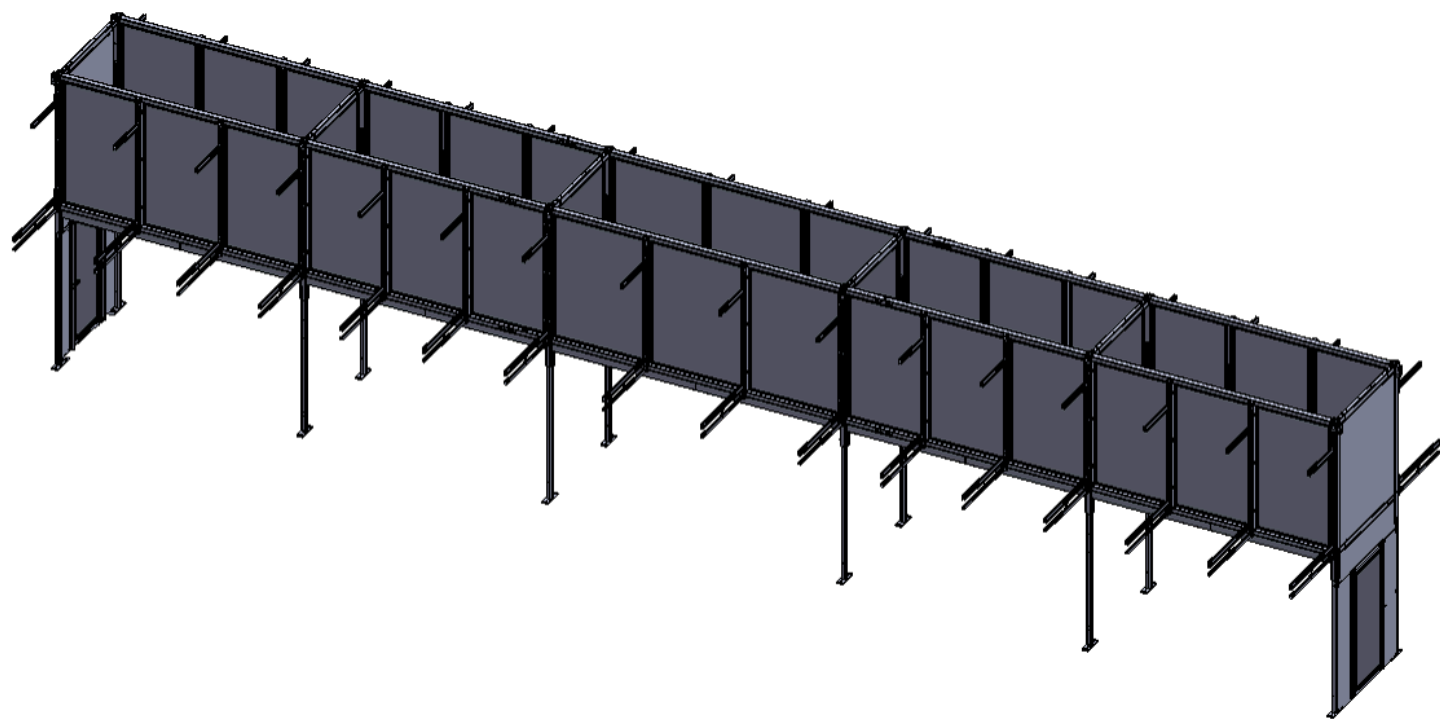
- #667492: 4,401 kg, L: 65'-7.5", W: 65'-7.5", H: 15'-4.0"
- #667493: 3,751 kg, L: 66'-3.5", W: 7'-7.6", H: 15'-4.0"
- #667505: 4,792 kg, L: 84'-7.5", W: 13'-3.7", H: 15'-4.0"
- #667506: 3,752 kg, L: 85'-3.5", W: 7'-1.6", H: 15'-4.0"

Further information can be found at: <https://www.maysteel.com/data-center-solutions/aisle-containment>

Product Specifications

Product SKU(s):	#667492 - HOT AISLE ASSEMBLY 1.2-A #667493 - HOT AISLE ASSEMBLY 1.2-B #667505 - HOT AISLE ASSEMBLY 1.2-C #667506 - HOT AISLE ASSEMBLY 1.2-D
Product Classification Codes:	EC3 - NetworkInfrastructure -> CabinetsRacksAndEnclosures
Form Factor:	NetworkInfrastructure >> CabinetsRacksAndEnclosures

Product Composition Diagram



Material Composition

Material/Component Category	Origin	Product #667492 % Mass	Product #667493 % Mass	Product #667505 % Mass	Product #667506 % Mass
Pickled hot rolled coil	North America	4%	4%	8%	7%
Cold rolled coil	North America	6%	4%	6%	4%
Bent and formed steel tube	North America	69%	76%	59%	69%
Steel unistrut	North America	19%	15%	24%	18%
Aluminum extrusion	North America	2%	1%	3%	2%

Packaging Material	Origin	kg Mass
Corrugated cardboard	United States	0.49-1.06
Polyethylene wrap	United States	27.88-33.93
Pallet (wood)	United States	259.15-361.53

Biogenic Carbon Content	kg C per unit
Biogenic carbon content in product	None
Biogenic carbon content in accompanying packaging	155.5

Hazardous Materials
No regulated hazardous or dangerous substances are included in this product.

EPD Data Specificity

- Primary Data Year:2024
- Manufacturing Specificity:

✗ Industry Average

✓ Manufacturer Average

✗ Facility Specific

Averaging:
The projected number of products to be manufactured at each facility in calendar year 2026 and beyond, as shown below, was used to calculate a production-weighted average for each product. Note that all aisle assembly production occurred at the Allenton, WI facility in the year of study (CY2024); however, to calculate a production-weighted average for Maysteel, a percentage of the production was shifted to the Garland, TX and Lynchburg, VA facilities based on projected future production volumes.

- #667492: 4 (Allenton), 2 (Garland), 2 (Lynchburg)

- #667493: 4 (Allenton), 2 (Garland), 2 (Lynchburg)
- #667505: 100 (Allenton), 18 (Garland), 18 (Lynchburg)
- #667506: 8 (Allenton), 4 (Garland), 4 (Lynchburg)

Additionally, the mass parameter presented in this EPD is an average of the four products due to limitations of the EPD template. The correct, individual masses are provided in the product description.

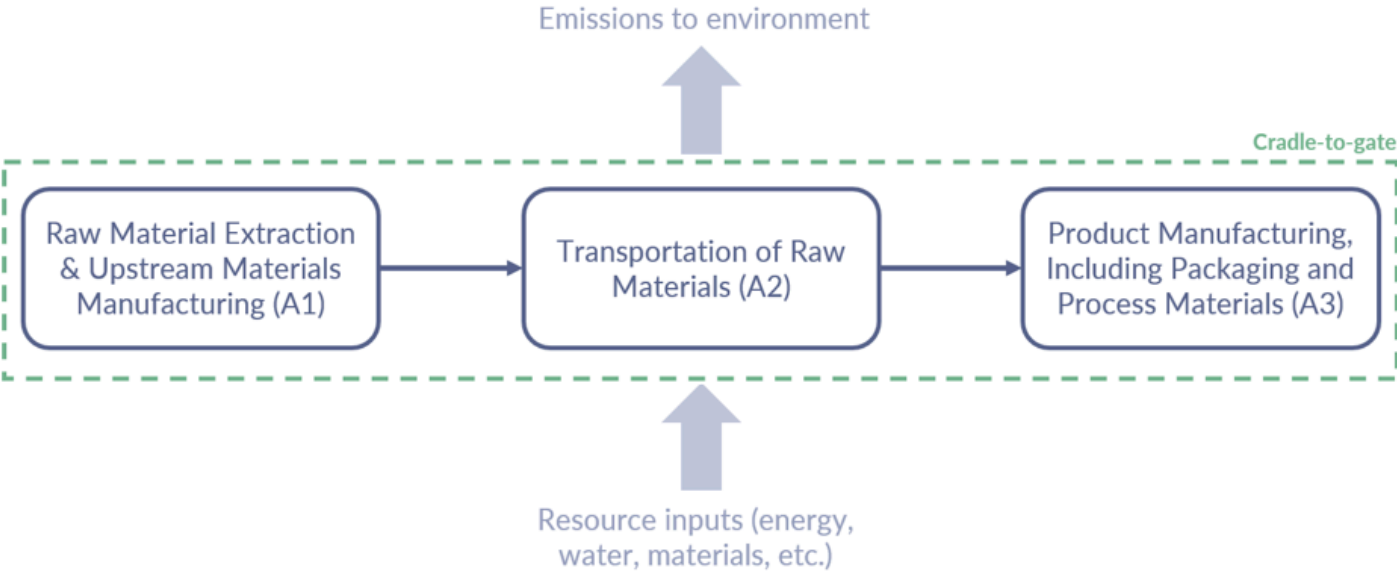
System Boundary

Production	A1	Raw material supply	✓
	A2	Transport	✓
	A3	Manufacturing	✓
Construction	A4	Transport to site	ND
	A5	Assembly / Install	ND
Use	B1	Use	ND
	B2	Maintenance	ND
	B3	Repair	ND
	B4	Replacement	ND
	B5	Refurbishment	ND
	B6	Operational Energy Use	ND
	B7	Operational Water Use	ND
End of Life	C1	Deconstruction	ND
	C2	Transport	ND
	C3	Waste Processing	ND
	C4	Disposal	ND
Benefits & Loads Beyond System Boundary	D	Recycling, Reuse Recovery Potential	ND

Note:

ND = Module not declared

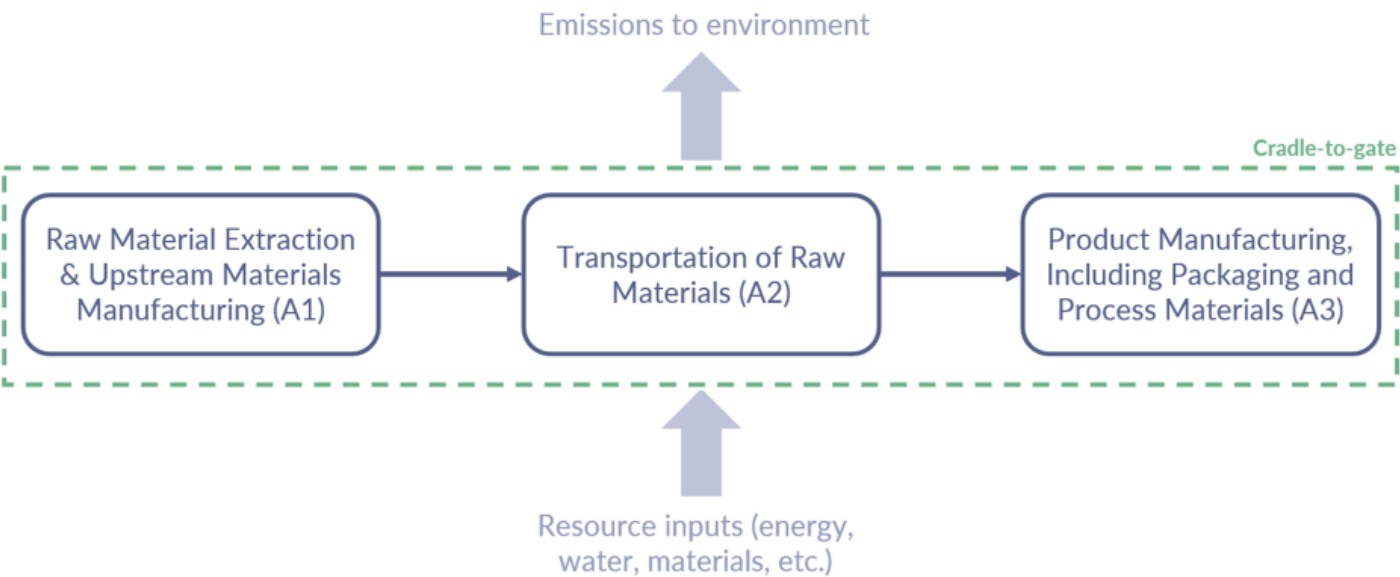
Product Composition Diagram



Plants

-  Allenton 6199 County Rd W, Allenton, WI, USA
-  Garland 701 S International Rd, Garland, TX, USA
-  Lynchburg 3726 Cohen Place, Lynchburg, VA, USA

Product Flow Diagram



Software And Database

LCA Software:	openLCA v. 2.4
LCI Foreground Database(s):	Ecoinvent v. 3.11 Global, Rest of World (RoW), and United States Cut-off by classification
LCI Background Database(s):	Ecoinvent v. 3.11 Global, Rest of World (RoW), and United States Cut-off by classification

A foreground LCI database is the database used to model the primary, site-specific data collected for this EPD. A background LCI database is the database used to model generic or non-specific data.

Data Quality

The key requirement for data quality is that data be as accurate and representative as possible. Data quality evaluations are described in the LCA report, which include an assessment of data quality specific to this study. Data quality is assessed based on temporal, geographical, and technological representativeness, along with data precision, completeness, representativeness, consistency, reproducibility, sources, and uncertainty. The requirements are based on the ISO 14044:2006 and ISO 21930:2017 standards, as well as Smart EPD Part A. To fulfill these requirements and to ensure reliable results, background life cycle inventory (LCI) information from ecoinvent version 3.11 was used.

Data Sources

Material/Process Category	Module	Material/Process Name	Inventory Dataset Name	Dataset Geographic Region	Reporting Period/Year Dataset Represents	Reference	Amount (if relevant)	Unit
Aluminum extrusion	A1	Extruded aluminum	North American extruded aluminum	North America	2022	Aluminum Association	ND	ND
Pickled hot rolled coil	A1	Pickled Hot Rolled Coil	Pickled Hot Rolled Coil	North America	2020	AISI	ND	ND
Cold rolled coil	A1	Cold Rolled Coil	Cold Rolled Coil	North America	2020	AISI	ND	ND
Bent and formed steel tube	A1	Cold Rolled Coil	Cold Rolled Coil	North America	2020	AISI	ND	ND
Steel unistrut	A1	Hot Dipped Galvanized	Hot Dipped Galvanized	North America	2020	AISI	ND	ND
Electricity	A3	market for electricity, medium voltage	market for electricity, medium voltage	US RFC, US TRE, or US SERC	2022	ecoinvent 3.11	ND	ND
Natural gas	A3	heat production, natural gas, at industrial furnace >100kW	heat, district or industrial, natural gas	RoW	2022	ecoinvent 3.11	ND	ND
Transportation	A2	transport truck	market for transport, freight, lorry, unspecified transport, freight, lorry, unspecified	RoW	2022	ecoinvent 3.11	ND	ND

Life Cycle Module Description

Module A1 captures raw material extraction and processing, while A2 captures transport from primary suppliers to each of the three facilities included in this study (Allenton, WI, Garland, TX, and Lynchburg, VA). Background data is used to estimate the upstream raw material extraction and processing impacts, while primary data on transport distances was provided by Maysteel.

The four products under study are currently produced by Maysteel at the Allenton, WI manufacturing facility. Maysteel intends to produce each of the four aisle assembly products at the Garland, TX and Lynchburg, VA manufacturing locations in CY2026 and beyond. Maysteel confirmed that the manufacturing process at Garland, TX and Lynchburg, VA will be similar in nature to the current activities at the Allenton, WI manufacturing facility.

The manufacturing process involves several steps. First, the purchased steel tubes and raw sheet metal are cut or formed into the desired configurations. The parts are then welded together to form sub-assemblies. This is where processes gases, such as argon and oxygen, would be used. The sub-assemblies are then powder coated. Finally, all parts are packaged into cardboard boxes and loaded onto pallets for final assembly at the customer site.

Module A3 covers all manufacturing at the Maysteel facilities, including the production of packaging and ancillary materials used in production, such as process gases. Data for this stage was obtained directly from Maysteel, based on their inventory management system and utility bills. Manufacturing demands at each of the three facilities were calculated using the average energy and process material consumption rates per unit mass of raw materials processed combined with the material loss ratio (scrap rate) to convert the rates into per unit of product mass. This was necessary because mass information on outbound products was not available for the three manufacturing locations. The average manufacturing demand was then multiplied by the product mass (including scrap percentages) to determine the manufacturing burden per aisle assembly. Consideration was given to allocating based upon “per unit of production” but this approach was ultimately disregarded because many of Maysteel's products have a significantly smaller mass and the manufactured number of units is many times higher than that of the aisle assemblies. Therefore, averaging based upon “per unit of production” may underrepresent the manufacturing burdens attributable to the aisle assemblies.

LCA Discussion

Allocation Procedure

Co-product Allocation

There are no co-products produced at any of the manufacturing facilities. Therefore, no co-product allocation was required for this assessment. Background data for the study uses a cut-off approach for allocation, except for the AISI steel data which uses physical allocation for co-products. Datasets were modelled with the 'cut off, at classification' database in ecoinvent v3.11.

Allocation of Background Data

Background data sourced from the ecoinvent v3.11 database are modeled using the “cut-off, at classification” system model. Under this method, recycled content carries no upstream environmental burdens, and the burdens of waste treatment are assigned to the original product system.

End-of-Life Allocation

No end-of-life allocation is defined in this study as end-of-life treatment is outside of the system boundary in this cradle-to-gate study. Outbound transportation was modelled for any manufacturing scrap or waste and the cut-off approach was applied to any scrap flows that are recycled, including steel and aluminum.

Cut-off Procedure

No cut-off criteria were defined within the system boundary. All available energy and material flow data were included in the model. Proxy data were used when necessary to ensure comprehensive representation of life cycle impacts.

Renewable Electricity

Energy Attribute Certificates (EACs) such as Renewable Energy Certificates (RECs) or Power Purchase Agreements (PPAs) are included in the baseline reported results:

✗ No

Results

Environmental Impact Assessment Results

IPCC AR6 GWP 100, TRACI 2.2

per 1 unit of product 1 aisle assembly .

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

#667505

Impact Category	Unit	Method	A1 - A3
GWP-total	kg CO2 eq	IPCC AR6 GWP 100	2.38e+4
GWP-biogenic	kg CO2 eq	IPCC AR6 GWP 100	5.55e+1
GWP-fossil	kg CO2 eq	IPCC AR6 GWP 100	1.06e+4
GWP-luluc	kg CO2 eq	IPCC AR6 GWP 100	4.19e+0
ODP	kg CFC 11 eq	TRACI 2.2	1.60e-4
AP	kg SO2 eq	TRACI 2.2	5.07e+1
EP-freshwater	kg P eq	TRACI 2.2	ND
EP-marine	kg N eq	TRACI 2.2	1.68e+1
POCP	kg O3 eq	TRACI 2.2	8.04e+2

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particular Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

The largest sources of impact are raw materials (A1) or manufacturing (A3), for all indicators, with transport (A2) making up a relatively minor contributor for all indicators other than eutrophication. Raw material (A1) GWP impacts come primarily from bent & formed steel tube (48%), followed by steel unistrut (22%). Manufacturing (A3) GWP impacts are driven largely by utility consumption, where 48% of A3 impacts come from electricity consumption and 49% come from natural gas consumption.

Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase when product performance and specifications have been established and serve as a functional unit for comparison. Environmental impact results shall be converted to a functional unit basis before any comparison is attempted. Any comparison of EPDs shall be subject to the requirements of ISO 21930 or EN 15804. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries, are based on different product category rules or are missing relevant environmental impacts. Such comparison can be inaccurate, and could lead to erroneous selection of materials or products which are higher-impact, at least in some impact categories.

#667492

Impact Category	Unit	Method	A1 - A3
GWP-total	kg CO2 eq	IPCC AR6 GWP 100	2.16e+4
GWP-biogenic	kg CO2 eq	IPCC AR6 GWP 100	5.12e+1
GWP-fossil	kg CO2 eq	IPCC AR6 GWP 100	9.74e+3
GWP-luluc	kg CO2 eq	IPCC AR6 GWP 100	3.82e+0
ODP	kg CFC 11 eq	TRACI 2.2	1.45e-4
AP	kg SO2 eq	TRACI 2.2	4.52e+1
EP-freshwater	kg P eq	TRACI 2.2	ND
EP-marine	kg N eq	TRACI 2.2	1.50e+1
POCP	kg O3 eq	TRACI 2.2	7.21e+2

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particulate Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

The largest sources of impact are raw materials (A1) or manufacturing (A3), for all indicators, with transport (A2) making up a relatively minor contributor for all indicators other than eutrophication. Raw material (A1) GWP impacts come primarily from bent & formed steel tube (58%), followed by steel unistrut (18%). Manufacturing (A3) GWP impacts are driven largely by utility consumption, where 45% of A3 impacts come from electricity consumption and 45% come from natural gas consumption.

Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase when product performance and specifications have been established and serve as a functional unit for comparison. Environmental impact results shall be converted to a functional unit basis before any comparison is attempted. Any comparison of EPDs shall be subject to the requirements of ISO 21930 or EN 15804. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries, are based on different product category rules or are missing relevant environmental impacts. Such comparison can be inaccurate, and could lead to erroneous selection of materials or products which are higher-impact, at least in some impact categories.

#667493

Impact Category	Unit	Method	A1 - A3
GWP-total	kg CO2 eq	IPCC AR6 GWP 100	1.82e+4
GWP-biogenic	kg CO2 eq	IPCC AR6 GWP 100	4.44e+1
GWP-fossil	kg CO2 eq	IPCC AR6 GWP 100	8.39e+3
GWP-luluc	kg CO2 eq	IPCC AR6 GWP 100	3.37e+0
ODP	kg CFC 11 eq	TRACI 2.2	1.18e-4
AP	kg SO2 eq	TRACI 2.2	3.72e+1
EP-freshwater	kg P eq	TRACI 2.2	ND
EP-marine	kg N eq	TRACI 2.2	1.24e+1
POCP	kg O3 eq	TRACI 2.2	6.00e+2

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particular Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

The largest sources of impact are raw materials (A1) or manufacturing (A3), for all indicators, with transport (A2) making up a relatively minor contributor for all indicators other than eutrophication. Raw material (A1) GWP impacts come primarily from bent & formed steel tube (67%), followed by steel unistrut (15%). Manufacturing (A3) GWP impacts are driven largely by utility consumption, where 38% of A3 impacts come from electricity consumption and 39% come from natural gas consumption.

Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase when product performance and specifications have been established and serve as a functional unit for comparison. Environmental impact results shall be converted to a functional unit basis before any comparison is attempted. Any comparison of EPDs shall be subject to the requirements of ISO 21930 or EN 15804. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries, are based on different product category rules or are missing relevant environmental impacts. Such comparison can be inaccurate, and could lead to erroneous selection of materials or products which are higher-impact, at least in some impact categories.

#667506

Impact Category	Unit	Method	A1 - A3
GWP-total	kg CO2 eq	IPCC AR6 GWP 100	1.83e+4
GWP-biogenic	kg CO2 eq	IPCC AR6 GWP 100	4.43e+1
GWP-fossil	kg CO2 eq	IPCC AR6 GWP 100	8.40e+3
GWP-luluc	kg CO2 eq	IPCC AR6 GWP 100	3.42e+0
ODP	kg CFC 11 eq	TRACI 2.2	1.20e-4
AP	kg SO2 eq	TRACI 2.2	3.81e+1
EP-freshwater	kg P eq	TRACI 2.2	ND
EP-marine	kg N eq	TRACI 2.2	1.28e+1
POCP	kg O3 eq	TRACI 2.2	6.12e+2

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particular Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

The largest sources of impact are raw materials (A1) or manufacturing (A3), for all indicators, with transport (A2) making up a relatively minor contributor for all indicators other than eutrophication. Raw material (A1) GWP impacts come primarily from bent & formed steel tube (59%), followed by steel unistrut (17%). Manufacturing (A3) GWP impacts are driven largely by utility consumption, where 38% of A3 impacts come from electricity consumption and 39% come from natural gas consumption.

Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase when product performance and specifications have been established and serve as a functional unit for comparison. Environmental impact results shall be converted to a functional unit basis before any comparison is attempted. Any comparison of EPDs shall be subject to the requirements of ISO 21930 or EN 15804. EPDs are not

comparative assertions and are either not comparable or have limited comparability when they have different system boundaries. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries, are based on different product category rules or are missing relevant environmental impacts. Such comparison can be inaccurate, and could lead to erroneous selection of materials or products which are higher-impact, at least in some impact categories.

Resource Use Indicator

per 1 unit of product 1 aisle assembly .

#667505

Indicator	Unit	A1 - A3
RPRE	MJ, LHV	2.69e+4
RPRM	MJ, LHV	0
RPRT	MJ, LHV	1.09e+4
NRPRE	MJ, LHV	3.11e+5
NRPRM	MJ, LHV	1.91e+1
NRPRT	MJ, LHV	1.40e+5
SM	kg	2.01e+3
RSF	MJ, LHV	ND
NRSF	MJ, LHV	ND
RE	MJ, LHV	ND
ADPF	MJ, LHV	1.43e+5
FW	m3	2.59e+4

Note:
Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:
RPRE or PERE = Renewable primary resources used as energy carrier (fuel), RPRM or PERM = Renewable primary resources with energy content used as material, RPRT or PERT = Total use of renewable primary resources with energy content, NRPRE or PENRE = Non-renewable primary resources used as an energy carrier (fuel), NRPRM or PENRM = Non-renewable primary resources with energy content used as material, NRPRT or PENRT = Total non-renewable primary resources with energy content, SM = Secondary materials, RSF = Renewable secondary fuels, NRSF = Non-renewable secondary fuels, RE = Recovered energy, ADPF = Abiotic depletion potential, FW = Use of net freshwater resources, VOCs = Volatile Organic Compounds.

N/A: Data not available. In the A1 module, data was not available for the metal datasets, so the entire value has been omitted instead of providing a partial total.

#667492

Indicator	Unit	A1 - A3
RPRE	MJ, LHV	2.30e+4
RPRM	MJ, LHV	0
RPRT	MJ, LHV	8.89e+3
NRPRE	MJ, LHV	2.81e+5
NRPRM	MJ, LHV	1.32e+1
NRPRT	MJ, LHV	1.28e+5
SM	kg	1.81e+3
RSF	MJ, LHV	ND
NRSF	MJ, LHV	ND
RE	MJ, LHV	ND
ADPF	MJ, LHV	1.31e+5
FW	m3	2.37e+4

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

RPRE or PERE = Renewable primary resources used as energy carrier (fuel), RPRM or PERM = Renewable primary resources with energy content used as material, RPRT or PERT = Total use of renewable primary resources with energy content, NRPRE or PENRE = Non-renewable primary resources used as an energy carrier (fuel), NRPRM or PENRM = Non-renewable primary resources with energy content used as material, NRPRT or PENRT = Total non-renewable primary resources with energy content, SM = Secondary materials, RSF = Renewable secondary fuels, NRSF = Non-renewable secondary fuels, RE = Recovered energy, ADPF = Abiotic depletion potential, FW = Use of net freshwater resources, VOCs = Volatile Organic Compounds.

N/A: Data not available. In the A1 module, data was not available for the metal datasets, so the entire value has been omitted instead of providing a partial total.

#667493

Indicator	Unit	A1 - A3
RPRE	MJ, LHV	2.09e+4
RPRM	MJ, LHV	0
RPRT	MJ, LHV	6.48e+3
NRPRE	MJ, LHV	2.35e+5
NRPRM	MJ, LHV	6.92e+0
NRPRT	MJ, LHV	1.08e+5
SM	kg	1.54e+3
RSF	MJ, LHV	ND
NRSF	MJ, LHV	ND
RE	MJ, LHV	ND
ADPF	MJ, LHV	1.13e+5
FW	m3	2.02e+4

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

RPRE or PERE = Renewable primary resources used as energy carrier (fuel), RPRM or PERM = Renewable primary resources with energy content used as material, RPRT or PERT = Total use of renewable primary resources with energy content, NRPRE or PENRE = Non-renewable primary resources used as an energy carrier (fuel), NRPRM or PENRM = Non-renewable primary resources with energy content used as material, NRPRT or PENRT = Total non-renewable primary resources with energy content, SM = Secondary materials, RSF = Renewable secondary fuels, NRSF = Non-renewable secondary fuels, RE = Recovered energy, ADPF = Abiotic depletion potential, FW = Use of net freshwater resources, VOCs = Volatile Organic Compounds.

N/A: Data not available. In the A1 module, data was not available for the metal datasets, so the entire value has been omitted instead of providing a partial total.

#667506

Indicator	Unit	A1 - A3
RPRE	MJ, LHV	2.31e+4
RPRM	MJ, LHV	0
RPRT	MJ, LHV	7.19e+3
NRPRE	MJ, LHV	2.38e+5
NRPRM	MJ, LHV	9.78e+0
NRPRT	MJ, LHV	1.08e+5
SM	kg	1.57e+3
RSF	MJ, LHV	ND
NRSF	MJ, LHV	ND
RE	MJ, LHV	ND
ADPF	MJ, LHV	1.13e+5
FW	m3	2.03e+4

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

RPRE or PERE = Renewable primary resources used as energy carrier (fuel), RPRM or PERM = Renewable primary resources with energy content used as material, RPRT or PERT = Total use of renewable primary resources with energy content, NRPRE or PENRE = Non-renewable primary resources used as an energy carrier (fuel), NRPRM or PENRM = Non-renewable primary resources with energy content used as material, NRPRT or PENRT = Total non-renewable primary resources with energy content, SM = Secondary materials, RSF = Renewable secondary fuels, NRSF = Non-renewable secondary fuels, RE = Recovered energy, ADPF = Abiotic depletion potential, FW = Use of net freshwater resources, VOCs = Volatile Organic Compounds.

N/A: Data not available. In the A1 module, data was not available for the metal datasets, so the entire value has been omitted instead of providing a partial total.

Waste and Output Flow Indicators

per 1 unit of product 1 aisle assembly .

#667505

Indicator	Unit	A1 - A3
HWD	kg	7.50e-1
NHWD	kg	9.15e+2
HLRW	kg	ND
ILLRW	kg	ND
CRU	kg	0
MFR	kg	1.43e+3
MER	kg	1.52e+0
EE	MJ, LHV	0

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER = Materials for incineration, no energy recovery, EE or EEE = Recovered energy exported from the product system, EET = Exported thermal energy.

N/A: Data not available. In the A1 module, data was not available for the metal datasets, so the entire value has been omitted instead of providing a partial total.

#667492

Indicator	Unit	A1 - A3
HWD	kg	6.87e-1
NHWD	kg	8.05e+2
HLRW	kg	ND
ILLRW	kg	ND
CRU	kg	0
MFR	kg	1.32e+3
MER	kg	1.04e+0
EE	MJ, LHV	0

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER = Materials for incineration, no energy recovery, EE or EEE = Recovered energy exported from the product system, EET = Exported thermal energy.

N/A: Data not available. In the A1 module, data was not available for the metal datasets, so the entire value has been omitted instead of providing a partial total.

#667493

Indicator	Unit	A1 - A3
HWD	kg	5.91e-1
NHWD	kg	6.76e+2
HLRW	kg	ND
ILLRW	kg	ND
CRU	kg	0
MFR	kg	1.14e+3
MER	kg	5.19e-1
EE	MJ	0
Note: Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements. Abbreviations: HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER = Materials for incineration, no energy recovery, EE or EEE = Recovered energy exported from the product system, EET = Exported thermal energy.		

N/A: Data not available. In the A1 module, data was not available for the metal datasets, so the entire value has been omitted instead of providing a partial total.

#667506

Indicator	Unit	A1 - A3
HWD	kg	5.93e-1
NHWD	kg	6.99e+2
HLRW	kg	ND
ILLRW	kg	ND
CRU	kg	0
MFR	kg	1.13e+3
MER	kg	7.60e-1
EE	MJ	0
Note: Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements. Abbreviations: HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER = Materials for incineration, no energy recovery, EE or EEE = Recovered energy exported from the product system, EET = Exported thermal energy.		

N/A: Data not available. In the A1 module, data was not available for the metal datasets, so the entire value has been omitted instead of providing a partial total.

Scaling Factors

Product	#667492	#667493	#667505	#667506
Mass (kg)	4401	3751	4792	3752

Results are provided per single aisle containment system in the main body of this EPD. They can be converted to impacts on a mass basis using the masses provided in the table above. Results on a mass basis are provided in the Interpretation section.

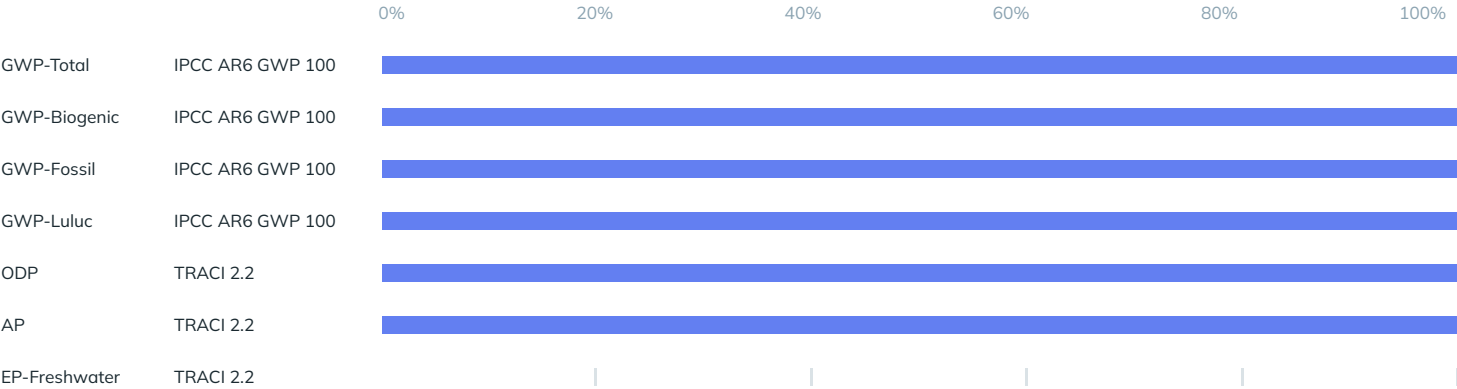
Interpretation

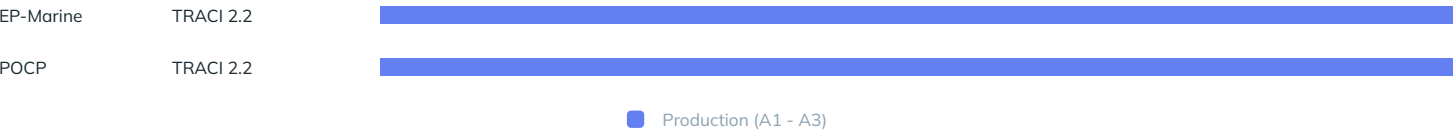
The results indicate that the largest sources of impact are Raw Materials (A1) or Manufacturing (A3) for all indicators. Raw Material (A1) GWP impacts come primarily from bent & formed steel tube (48-67%), followed by steel unistrut (15-22%). Manufacturing (A3) GWP impacts are driven largely by utility consumption, where 38-45% of A3 impacts come from electricity consumption and 39-45% come from natural gas consumption. The impacts vary slightly but are generally comparable between products. GWP ranges between 18.2 and 23.8 metric tonnes CO₂ eq per unit. Across all indicators, Product 3 has the largest impacts, while Product 2 has the smallest impacts. Finally, the product with the highest emissions intensity when manufacturing locations are averaged is Product 2 with 164.2 kg CO₂ eq/kg, while the product with the lowest emissions intensity is Product 3 with 78.4 kg CO₂ eq/kg. This general trend is observed across production facilities, but products manufactured at Lynchburg, VA facility generally have the highest emissions.

Projected manufacturing burdens were calculated for the Garland, TX and Lynchburg, VA manufacturing locations as production did not occur at these locations during the year of study. Maysteel has confirmed the manufacturing activities at the Garland, TX and Lynchburg, VA manufacturing facilities will be similar in nature to that of Allenton, WI. Moreover, the Allenton, WI facility intends to remain the largest producer of each of the aisle assembly products in CY2026 and beyond. Together, the facts above will aid in reducing the uncertainty in the manufacturer-average results presented herein; however, lack of actual production data for the Garland, TX and Lynchburg, VA manufacturing locations is an inherent limitation of the study.

Also, allocating manufacturing burdens on a “per kg of inbound raw material” basis adds an additional degree of uncertainty to the results presented herein. This method would be most accurate in the case where the raw materials are used in similar manufacturing processes to manufacture all products at the facility; however, this is not the case as Maysteel produces a multitude of different product types. Given that the aisle assemblies are some of the larger products manufactured at the facility in terms of mass it is plausible that the portion of the manufacturing burden assigned to it is overly conservative.

Additionally, precise scrap rates for polycarbonate and ABS corner material per material input at each facility were not available. JBE and Maysteel agreed on a conservative 10% scrap rate for these materials. Furthermore, the steel and aluminum scrap rates calculated for the Allenton, WI facility were used as a proxy for the Garland, TX and Lynchburg, VA manufacturing facilities given that the products were only manufactured at the Allenton, WI facility during the year of study. The steel scrap rate also assumes that the various steel materials have the same manufacturing scrap rate, which may not be the case in reality. This also assumes that the scrap rate for steel and aluminum materials is the same across each product manufactured at the facilities. This is therefore a limitation of the study.





Results by Mass

Product	A1	A2	A3	Total
#667492	2.69	0.16	2.06	4.91
#667493	2.59	0.15	2.10	4.84
#667505	2.74	0.18	2.05	4.97
#667506	2.63	0.16	2.09	4.88

References

ACLCA. (2018). *ACLCA Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930: 2017*.

American Iron and Steel Institute. (2020). *Life Cycle Inventories of North American Steel Products*.

IPCC. (2021). *Climate Change 2021: The Physical Science Basis*. IPCC.

IPCC. (2021). *Emission Factor Database*. Retrieved from <https://www.ipcc-nggip.iges.or.jp/EFDB/main.php>

ISO. (2006a). *14040:2006 – Environmental management — Life cycle assessment — Principles and framework*. Geneva: International Organization of Standardization.

ISO. (2006b). *14044:2006 – Environmental management — Life cycle assessment — Requirements and guidelines*. Geneva: International Organization for Standardization.

ISO. (2017). *21930 - Sustainability in Buildings and Civil Engineering Works - Core RULEs for Environmental Product Declarations of Construction Products and Services*. Geneva: International Organization for Standardization.

Meta. (2023). G-SP-176 SUSTAINABLE DESIGN REQUIREMENTS. Section 01 81 13.

openLCA. (2017). openLCA LCIA Methods v2.3.2.

Serafini, S. & Citroth, A. (2024). *Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI), Version 2.2*.

SmartEPD. (2025a, March). *Smart EPD Part A Product Category Rules for Building and Construction Products and Services, Standard 1000. Version 1.2*. Retrieved from www.smartepd.com

SmartEPD. (2025b). *SmartEPD General Program Instructions, v.2.0*.

Steel Tube Institute. (2021). *Hollow Structural Sections (HSS) Environmental Product Declaration*.

The Aluminum Association. (2022). *Industry-Average Extruded Aluminum Manufactured in North America*.

Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., & Weidema, B. (2016). The ecoinvent database version 3 (part I): overview and methodology. *The International Journal of Life Cycle Assessment*, 1218-1230.