

DAYBAR

- AS Frames
- DW16 Frames
- CBO Frames
- EF Frames
- KERF Frames

For over half a century, Daybar has been innovating to create a higher standard for hollow metal frames people use every day, delivering maximum value and quality. Made of rust-inhibiting galvaneal steel, Daybar offers metal frames for all applications. Engineered profiles to accommodate all masonry and drywall application, offered with various anchor and hardware configurations – Daybar has frame solutions for all needs. Special profiles are available for when decorative trim overlay, kerf-type friction gasket inserts or accommodations for design alternations are needed. Independently tested to meet the highest standards in performance for fire, severe weather and endurance testing, all backed by an unmatched factory warranty. Compatible with all leading providers of security and access control systems, for both electrified and mechanical hardware.



Performance dashboard

Features & functionality

AS Frames: Commercial hollow metal steel door frames, available in various custom sizes, hardware configurations and profiles. AS Frames are suitable for many frame applications and carry a series of applicable certifications. Constructed out of rust-inhibiting galvaneal steel with a die-mitered multi-tab corner assembly with optional welded corners. A large selection of mounting anchors and optional water-based primer finish makes it ideal for interior or exterior use.

DW16 Frames: Commercial hollow metal steel door frames offered in a 3-piece knockdown construction with unequal double rabbeted profile for drywall, and to paired with 1-3/4” doors. This construction makes it efficient for post-drywall installation to accelerate build schedules and improved jobsite logistics. These frames carry a double backbend, adjustable compression anchors with optioned water-based primer finish make these frames ideal for drywall applications.

CBO Frames: Casing-ready flush-fit steel door frames, designed specifically for easy overlay of trim. These frames are constructed with die-mitered multi-tab corner assembly and no backbends to allow for a flush fit while maintaining design intent and code compliance. Available in custom sizes and hardware configurations to suit all applications where a decorative trim is intended to overlay a hollow metal door frame.

EF Frames: Adjustable throat hollow metal doors frames, constructed with expandable brackets to be an adaptable inventory solution. Steel frames can accommodate a range of 3-1/2”-12” wall thicknesses allowing for flexibility for design alterations and adjustability for irregular wall conditions.

KERF Frames: Gasket-ready profile steel door frames, designed to accept kerf-type gasket inserts. Kerf profile allows for friction-fit gasketing making for effortless gasket installation. Available in all frame styles, making it a versatile solution to all applications where a gasketed seal is required – ideal for interior and exterior use, in any wall condition.

Environment & materials

Improved by:

Recycled content: DAYBAR Steel Frames are manufactured using steel produced from both electric arc furnace and blast furnace methods

Raw materials used in steel are sourced locally – reducing transportation emissions and contributing to local economy

Low VOC materials used in the assembly of steel frames, water-based primer finishes offered

Upon end of life, products are highly recyclable

Certification & rating systems:

National Association of Architectural Metal Manufacturers member

Hollow Metal Manufacturers Association member

Canadian Steel Door Manufacturers Association member

Door Security + Safety Institute partner

Warnock Hersey certified

Miami-Dade County Approved

Complies with ANSI 250.8



Visit Daybar for more product information

- [AS Frames](#)
- [DW16 Frames](#)
- [CBO Frames](#)
- [EF Frames](#)
- [KERF Frames](#)

MasterFormat® 08 11 13

Spec sheets:

- [AS Frames](#)
- [DW16 Frames](#)
- [CBO Frames](#)
- [EF Frames](#)
- [KERF Frames](#)

For spec help, [contact us](#) or call 905 625 8000

See LCA, interpretation & rating systems



SM Transparency Report (EPD)™

VERIFICATION	LCA
3rd-party reviewed	
Transparency Report (EPD)	
3rd-party verified	
Validity: 07/14/2026 – 07/14/2031 SM-DAY – 20260714 – 002	
MATERIAL HEALTH	Material evaluation
Self-declared	

This environmental product declaration (EPD) was externally verified by Beth Cassese, LCACP, CLAR according to ISO 21930:2017; UL Part A; UL Part B for Commercial Steel Doors and Steel Frames; and ISO 14025:2006.

In accordance with ISO 14044 and the reference PCR, this life cycle assessment was conducted by Sustainable Minds and reviewed by Beth Cassese, LCACP, CLAR.

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SUMMARY

Reference PCR

UL Part B: Commercial Steel Doors and Steel Frames

Regions; system boundaries

North America; Cradle-to-gate with options

Declared unit

One commercial three-sided steel frame that can fit a 3-feet x 7-feet door

LCIA methodology

IPCC & TRACI 2.1

LCA software; LCI databases

SimaPro 10.2; ecoinvent v3.12

Public LCA

LCA of Daybar Commercial Steel Doors and Frames

Daybar Industries
50 West Drive,
Brampton, Ontario, L6T 2J4
905 625 8000
daybar.com

Contact us

LCA results & interpretation

Frames

- AS
- DW16
- CBO
- EF
- KERF
- EPD additional content

Scope and summary

☐ Cradle to gate

☒ Cradle to gate with options

☐ Cradle to grave

Application

The AS frames are premium commercial steel door frames for one-piece or welded applications, manufactured from rust-inhibiting galvanneal steel for interior and exterior use. The series is engineered to support both steel and wood doors with a variety of electrified and mechanical hardware configurations and is independently certified for fire, severe weather, and endurance performance, with options for custom sizes, profiles, and hardware configurations.

Declared unit

One commercial three-sided steel frame that can fit a 3-feet x 7-feet door considered in isolation, without a door, weighing 17.0 kg (density of 59.7 kg/m³). The 0.146m thick frame covers a linear length of 5.18 m and includes the steel body and hardware plus paint. A scaling factor of 0.05882 can be used to scale to results per linear ft of frame.

Installation activities

The finished frames are assumed to be transported by truck to the installation site, an average of 341 km from Brampton and 445 km from Phoenix. They are then secured using 1.36 kg of screws and bolts. Packaging waste is then disposed.

End of life activities

At the end of the frame's useful life, it is assumed to be transported 100 km by truck to final disposal, where 74% of the steel is recycled and the other portion of the product is landfilled.

Manufacturing data

Reporting period: January 2025 – December 2025

Locations: Brampton, ON, CAN and Phoenix, AZ, USA

What's causing the greatest impacts

All life cycle stages

The production stage dominates the results, with contributions stemming primarily from steel production during raw material extraction and processing. Installation is the next most significant contributor, especially for eutrophication, respiratory effects, and human health categories, while the end-of-life stage contributes relatively little.

Production

Steel-based parts account for over 95% of the total mass of the product and contribute the most to impacts in the raw material extraction phase (A1). While the steel body and hardware have 30% and 70% recycled content, respectively, they made up the majority of impacts in the raw material extraction stage (A1), which accounts for 75-85% of total global warming potential impacts. The Phoenix-manufactured frames had higher transportation and manufacturing (A3) impacts than the Brampton frames, since Brampton benefits from negative global warming potential contributions due to biogenic carbon uptake from packaging materials. Phoenix had slightly higher transportation (A2) impacts due to higher distances from raw material suppliers.

Construction

The installation (A5) of the frame is the second largest impactful contributor to most impact categories. At the installation site, frames are secured using screws and bolts, and packaging waste is disposed, accounting for a relatively high contribution to impact categories such as global warming potential, eutrophication, and human health categories. Distribution (A4) of frames to the installation site accounts for relatively lower impacts.

End of life

The disposal of waste (C4) accounts for most impacts in the end-of-life stage. The recycling or landfilling of frames at the end of their useful life accounts for less than 2% of total results for all impact categories. The potential impacts associated with transportation (C2) of the frame to its final disposal pathway is low compared to those generated during disposal.

Embodied carbon

Embodied carbon can be defined as the cradle-to-gate (A1-A3) global warming potential impacts. The total embodied carbon (IPCC_{Total}, 2013) per declared unit of the AS frames is 8.04E+01 kg CO₂-eq for the Brampton location and 9.03E+01 kg CO₂-eq for the Phoenix location.

Sensitivity analysis

Sensitivity analyses were performed to check the robustness of the results where the highest potential environmental impacts are occurring. As the bulk of impacts are attributed to raw materials acquisition, and steel-based parts are the major contributors to those impacts, they were selected for sensitivity analysis. The DW16 frames produced in Phoenix were chosen to represent the sensitivity of all frame product results.

Global warming potential was evaluated for sensitivity since Daybar is interested in the potential CO₂-equivalent emissions of its products. While the steel panels have 30% recycled content, increasing the recycled content to 50% could result in a potential decrease of total GWP impacts by about 16.7%.

How we're making it greener

- Minimizing waste
- Recycling materials
- Water-based paints

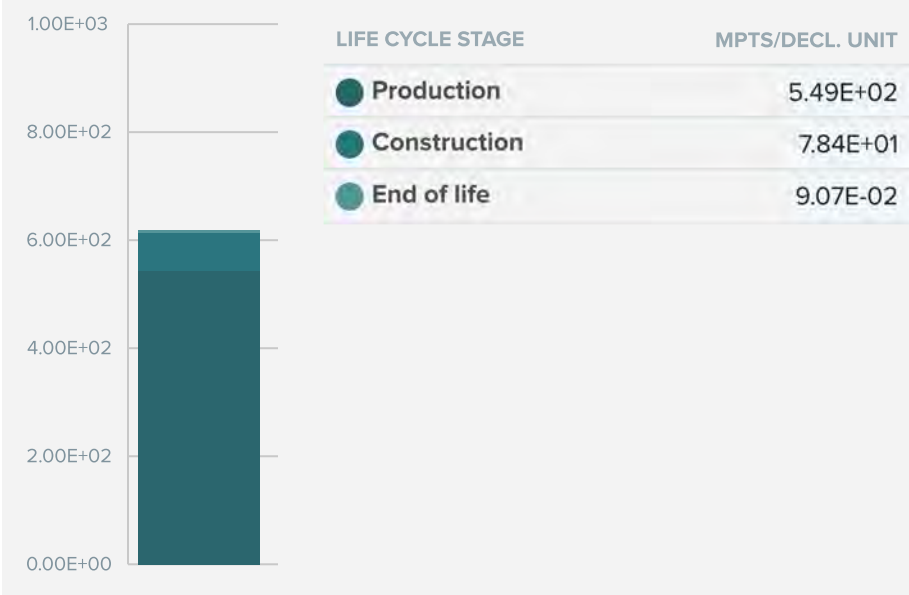
Material composition by wt%

MATERIAL	%WT.
Steel body	85-95%
Steel hardware	5-15%
Primer	<1%

- Use of recycled materials
- Air filtration – ensuring good air quality

See how we make it greener

Total impacts by life cycle stage [mPts/decl unit]



LCA results

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
Information modules: Included (X) Excluded (MND)* *Stages B and D are excluded from this system boundary (MND).	(X) A1 Raw material supply	(X) A4 Distribution	(X) C1 Deconstruction
	(X) A2 Upstream transportation	(X) A5 Installation	(X) C2 Waste Transportation
	(X) A3 Manufacturing		(X) C3 Waste processing
			(X) C4 Disposal
			

SM Single Score [Learn about SM Single Score results](#)

Impacts per declared unit	5.49E+02 mPts	7.84E+01 mPts	9.07E-02 mPts
Materials or processes contributing >20% to total impacts in each life cycle stage	Energy and materials consumed during steel-based part manufacturing.	Installation using screws and bolts.	Landfilling and recycling of frames at the end of life.

Life cycle impact assessment results per declared unit (Brampton, ON, CAN)

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
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Ecological damage

Impact category	Unit				
Global warming	kg CO ₂ eq		8.04E+01	1.54E+01	3.13E-01
Ozone depletion	kg CFC-11 eq		1.04E-06	1.12E-07	1.63E-09
Acidification	kg SO ₂ eq		1.09E+00	4.71E-02	4.29E-04
Eutrophication	kg N eq		6.32E-01	8.74E-03	5.09E-04

Human health damage

Impact category	Unit				
Smog	kg O ₃ eq		5.03E+00	6.53E-01	1.18E-02
Respiratory effects	kg PM _{2.5} eq		1.40E-01	2.67E-02	4.33E-05

Additional environmental information

Impact category	Unit				
Carcinogenics	CTU _h	?	98.1%	1.91%	0.001%

Impact category	Unit				
Non-carcinogenics	CTU _h	?	98.3%	1.78%	0.025%
Ecotoxicity	CTU _e	?	99.5%	0.429%	0.021%
Fossil fuel depletion	MJ surplus	?	7.13E+01	1.04E+01	2.04E-01

Life cycle impact assessment results per declared unit (Phoenix, AZ, USA)

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
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Ecological damage

Impact category	Unit				
Global warming	kg CO ₂ eq		9.03E+01	1.65E+01	3.13E-01
Ozone depletion	kg CFC-11 eq		1.20E-06	1.28E-07	1.63E-09
Acidification	kg SO ₂ eq		1.12E+00	5.11E-02	4.29E-04
Eutrophication	kg N eq		6.46E-01	9.76E-03	5.09E-04

Human health damage

Impact category	Unit				
Smog	kg O ₃ eq		5.43E+00	7.61E-01	1.18E-02
Respiratory effects	kg PM _{2.5} eq		1.42E-01	2.70E-02	4.33E-05

Additional environmental information

Impact category	Unit				
Carcinogenics	CTU _h	?	98.1%	1.92%	0.001%
Non-carcinogenics	CTU _h	?	98.2%	1.86%	0.025%
Ecotoxicity	CTU _e	?	99.5%	0.460%	0.021%
Fossil fuel depletion	MJ surplus	?	8.56E+01	1.24E+01	2.04E-01

References

LCA Background Report

LCA of Daybar Commercial Steel Doors and Steel Frames (public version), Daybar, 2026. Developed using the [TRACI v2.1](#), [IPCC 2013 AR5](#), [CML](#), and [Cumulative Energy Demand \(LHV\)](#) impact assessment methodologies, [SimaPro 10.2.0.2 software](#), and [ecoinvent v3.12](#) and US-EI 2.2 databases.

ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

ISO 21930:2017, Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services - serves as the core PCR.

UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements v4.0

March 2022. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Hugues Imbeault-Tétreault (Group AGECO); and Jack Geibig (Ecoform).

UL Part B: Commercial Steel Doors and Steel Frames EPD Requirements v3.0

March 2026. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Tim Weller (Allegion), tim.weller@allegion.com; and Dan Glover (ASSA ABLOY Door Group), dan.glover@assaabloy.com.

UL Solutions General Program Instructions, latest version available (available upon request)

Download PDF SM Transparency Report [EPD]™

SM Transparency Reports (TR) are ISO 14025:2006 Type III environmental declarations (EPD) that enable purchasers and users to compare the potential environmental performance of products on a life cycle basis. They are designed to present information transparently to make the limitations of comparability more understandable. Environmental declarations of products that conform to the same PCR and include the same life cycle stages, but are made by different manufacturers, may not sufficiently align to support direct comparisons. They therefore cannot be used as comparative assertions unless the conditions as defined in ISO 14025 Section 6.7.2. ‘Requirements for Comparability’ are satisfied. In order to support comparative assertions, this EPD meets all comparability requirements stated in ISO 14025:2006. However, differences in certain assumptions, data quality, and variability between LCA data sets may still exist. Any EPD comparison must be carried out at the building level per ISO 21930 guidelines, use the same sub-category PCR where applicable, include all relevant information modules, be limited to EPDs applying a functional unit, and be based on equivalent scenarios with respect to the context of construction works. Some LCA impact categories and inventory items are still under development and can have high levels of uncertainty. To promote uniform guidance on the data collection, calculation, and reporting of results, the ACLCA methodology (ACLCA 2019) was used.

Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified life-cycle environmental performance.

LEED BD+C: New Construction | v.5 - LEED v5
MR Credit 4: Building Materials Resources Credit (BPSP)

☒ Product-specific Type III EPD Multi-attribute score: 1

LEED BD+C: New Construction | v4.1 - LEED v4.1

Building product disclosure and optimization

Environmental product declarations

☐ Industry-wide (generic) EPD 1 product

☒ Product-specific Type III EPD 1.5 products

Green Globes for New Construction and Sustainable Interiors
Materials and resources

☒ NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell

☒ NC 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

BREEAM New Construction 2018

Mat 02 - Environmental impacts from construction products

Environmental Product Declarations (EPD)

☐ Industry-average EPD .5 points

☐ Multi-product specific EPD .75 points

☒ Product-specific EPD 1 point

Impact category	Unit				
Carcinogenics	CTU _h	?	98.1%	1.92%	0.001%
Non-carcinogenics	CTU _h	?	98.2%	1.86%	0.025%
Ecotoxicity	CTU _e	?	99.5%	0.460%	0.021%
Fossil fuel depletion	MJ surplus	?	8.56E+01	1.24E+01	2.04E-01

References

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UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements v4.0

March 2022. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Hugues Imbeault-Tétreault (Group AGECO); and Jack Geibig (Ecoform).

UL Part B: Commercial Steel Doors and Steel Frames EPD Requirements v3.0

March 2026. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Tim Weller (Allegion), Tim.weller@allegion.com; and Dan Glover (ASSA ABLOY Door Group), dan.glover@assaabloy.com.

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LEED BD+C: New Construction | v.5 - LEED v5
MR Credit 4: Building Materials Resources Credit (BPSP)

✔ Product-specific Type III EPD Multi-attribute score: 1

LEED BD+C: New Construction | v4.1 - LEED v4.1
Building product disclosure and optimization

Environmental product declarations

○ Industry-wide (generic) EPD 1 product

✔ Product-specific Type III EPD 1.5 products

Green Globes for New Construction and Sustainable Interiors
Materials and resources

✔ NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell

✔ NC 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

BREEAM New Construction 2018

Mat 02 - Environmental impacts from construction products

Environmental Product Declarations (EPD)

○ Industry-average EPD .5 points

○ Multi-product specific EPD .75 points

✔ Product-specific EPD 1 point



SM Transparency Report (EPD)™

VERIFICATION

LCA

3rd-party reviewed	✔
Transparency Report (EPD)	
3rd-party verified	✔

Validity: 07/14/2026 – 07/14/2031
SM-DAY – 20260714 – 002

MATERIAL HEALTH

Material
evaluation

Self-declared	✔
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This environmental product declaration (EPD) was externally verified by Beth Cassese, LCACP, CLAR according to ISO 21930:2017; UL Part A; UL Part B for Commercial Steel Doors and Steel Frames; and ISO 14025:2006.

In accordance with ISO 14044 and the reference PCR, this life cycle assessment was conducted by Sustainable Minds and reviewed by Beth Cassese, LCACP, CLAR.

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SUMMARY

Reference PCR

UL Part B: Commercial Steel Doors and Steel Frames

Regions; system boundaries

North America; Cradle-to-gate with options

Declared unit

One commercial three-sided steel frame that can fit a 3-feet x 7-feet door

LCIA methodology

IPCC & TRACI 2.1

LCA software; LCI databases

SimaPro 10.2; ecoinvent v3.12

Public LCA

LCA of Daybar Commercial Steel Doors and Frames

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Contact us

LCA results & interpretation

Frames

- AS
- DW16
- CBO
- EF
- KERF
- EPD additional content

Scope and summary

☐ Cradle to gate

☒ Cradle to gate with options

☐ Cradle to grave

Application

The DW16 frames are three-piece knockdown (KD) commercial steel drywall frames designed for efficient post-drywall installation and improved jobsite logistics. Manufactured from 16-gauge A60 galvanneal steel, the series is engineered to support both hollow metal and wood doors with a variety of electrified and mechanical hardware configurations, while offering independently tested fire and endurance performance and options for custom sizes, profiles, hardware configurations, and specialty finishes.

Declared unit

One commercial three-sided steel frame that can fit a 3-feet x 7-feet door considered in isolation, without a door, weighing 17.2-17.5 kg (density of 60.5-61.5 kg/m³). The 0.146m thick frame covers a linear length of 5.18 m and includes the steel body and hardware plus paint. A scaling factor of 0.05882 can be used to scale to results per linear ft of frame.

Installation activities

The finished frames are assumed to be transported by truck to the installation site, an average of 341 km from Brampton and 445 km from Phoenix. They are then secured using 1.36 kg of screws and bolts. Packaging waste is then disposed.

End of life activities

At the end of the frame's useful life, it is assumed to be transported 100 km by truck to final disposal, where 74% of the steel is recycled and the other portion of the product is landfilled.

Manufacturing data

Reporting period: January 2025 – December 2025

Locations: Brampton, ON, CAN and Phoenix, AZ, USA

What's causing the greatest impacts

All life cycle stages

The production stage dominates the results, with contributions stemming primarily from steel production during raw material extraction and processing. Installation is the next most significant contributor, especially for eutrophication, respiratory effects, and human health categories, while the end-of-life stage contributes relatively little.

Production

Steel-based parts account for over 95% of the total mass of the product and contribute the most to impacts in the raw material extraction phase (A1). While the steel body and hardware have 30% and 70% recycled content, respectively, they made up the majority of impacts in the raw material extraction stage (A1), which accounts for 83-85% of total global warming potential impacts. The Phoenix-manufactured frames had higher transportation and manufacturing (A3) impacts than the Brampton frames, since Brampton benefits from negative global warming potential contributions due to biogenic carbon uptake from packaging materials. Phoenix had slightly higher transportation (A2) impacts due to higher distances from raw material suppliers.

Construction

The installation (A5) of the frame is the second largest impactful contributor to most impact categories. At the installation site, frames are secured using screws and bolts, and packaging waste is disposed, accounting for a relatively high contribution to impact categories such as global warming potential, eutrophication, and human health categories. Distribution (A4) of frames to the installation site accounts for relatively lower impacts.

End of life

The disposal of waste (C4) accounts for most impacts in the end-of-life stage. The recycling or landfilling of frames at the end of their useful life accounts for less than 1% of total results for all impact categories. The potential impacts associated with transportation (C2) of the frame to its final disposal pathway is low compared to those generated during disposal.

Embodied carbon

Embodied carbon can be defined as the cradle-to-gate (A1-A3) global warming potential impacts. The total embodied carbon (IPCC_{Total}, 2013) per declared unit of the DW16 frames is 8.14E+01 kg CO₂-eq for the Brampton location and 9.28E+01 kg CO₂-eq for the Phoenix location.

Sensitivity analysis

Sensitivity analyses were performed to check the robustness of the results where the highest potential environmental impacts are occurring. As the bulk of impacts are attributed to raw materials acquisition, and steel-based parts are the major contributors to those impacts, they were selected for sensitivity analysis. The DW16 frames produced in Phoenix were chosen to represent the sensitivity of all frame product results.

Global warming potential was evaluated for sensitivity since Daybar is interested in the potential CO₂-equivalent emissions of its products. While the steel panels have 30% recycled content, increasing the recycled content to 50% could result in a potential decrease of total GWP impacts by about 16.7%.

How we're making it greener

- Minimizing waste
- Recycling materials
- Water-based paints

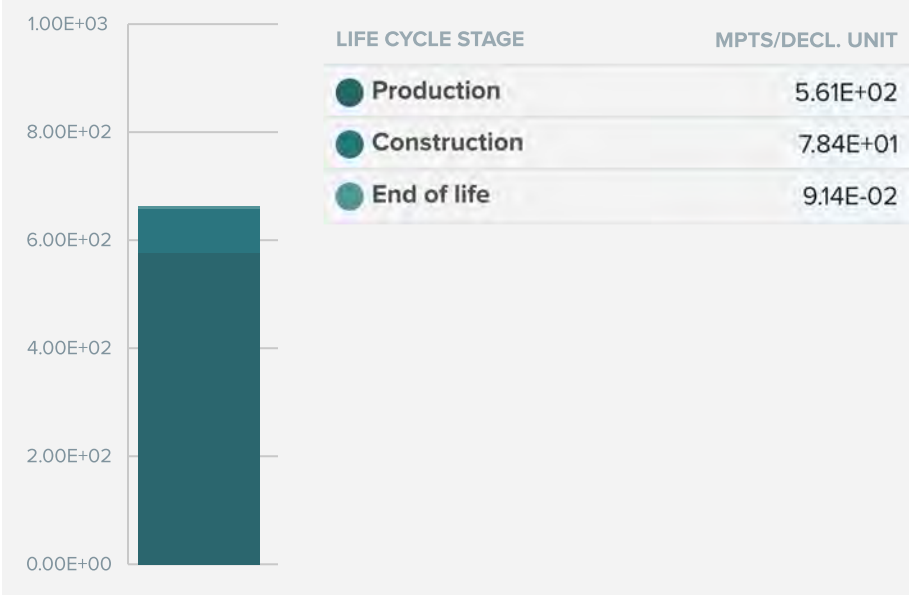
Material composition by wt%

MATERIAL	%WT.
Steel body	85-95%
Steel hardware	5-15%
Primer	<1%

- Use of recycled materials
- Air filtration – ensuring good air quality

See how we make it greener

Total impacts by life cycle stage [mPts/decl unit]



LCA results

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
Information modules: Included (X) Excluded (MND)* *Stages B and D are excluded from this system boundary (MND).	(X) A1 Raw material supply	(X) A4 Distribution	(X) C1 Deconstruction
	(X) A2 Upstream transportation	(X) A5 Installation	(X) C2 Waste Transportation
	(X) A3 Manufacturing		(X) C3 Waste processing
			(X) C4 Disposal
			

SM Single Score [Learn about SM Single Score results](#)

Impacts per declared unit	5.61E+02 mPts	7.84E+01 mPts	9.14E-02 mPts
Materials or processes contributing >20% to total impacts in each life cycle stage	Energy and materials consumed during steel-based part manufacturing.	Installation using screws and bolts.	Landfilling and recycling of frames at the end of life.

Life cycle impact assessment results per declared unit (Brampton, ON, CAN)

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
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Ecological damage

Impact category	Unit				
Global warming	kg CO ₂ eq		8.14E+01	1.54E+01	3.17E-01
Ozone depletion	kg CFC-11 eq		1.05E-06	1.13E-07	1.65E-09
Acidification	kg SO ₂ eq		1.10E+00	4.72E-02	4.34E-04
Eutrophication	kg N eq		6.39E-01	8.75E-03	5.10E-04

Human health damage

Impact category	Unit				
Smog	kg O ₃ eq		5.09E+00	6.54E-01	1.19E-02
Respiratory effects	kg PM _{2.5} eq		1.42E-01	2.67E-02	4.39E-05

Additional environmental information

Impact category	Unit				
Carcinogenics	CTU _h		98.1%	1.91%	0.001%

Impact category	Unit				
Non-carcinogenics	CTU _h	?	98.3%	1.68%	0.025%
Ecotoxicity	CTU _e	?	99.5%	0.429%	0.021%
Fossil fuel depletion	MJ surplus	?	7.21E+01	1.04E+01	2.07E-01

Life cycle impact assessment results per declared unit (Phoenix, AZ, USA)

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
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Ecological damage

Impact category	Unit				
Global warming	kg CO ₂ eq		9.28E+01	1.65E+01	3.21E-01
Ozone depletion	kg CFC-11 eq		1.22E-06	1.29E-07	1.67E-09
Acidification	kg SO ₂ eq		1.15E+00	5.13E-02	4.41E-04
Eutrophication	kg N eq		6.64E-01	9.81E-03	5.12E-04

Human health damage

Impact category	Unit				
Smog	kg O ₃ eq		5.59E+00	7.67E-01	1.21E-02
Respiratory effects	kg PM _{2.5} eq		1.47E-01	2.71E-02	4.46E-05

Additional environmental information

Impact category	Unit				
Carcinogenics	CTU _h	?	98.2%	1.82%	0.001%
Non-carcinogenics	CTU _h	?	98.2%	1.76%	0.025%
Ecotoxicity	CTU _e	?	99.6%	0.460%	0.021%
Fossil fuel depletion	MJ surplus	?	8.77E+01	1.25E+01	2.10E-01

References

LCA Background Report

LCA of Daybar Commercial Steel Doors and Steel Frames (public version), Daybar, 2026. Developed using the [TRACI v2.1](#), [IPCC 2013 AR5](#), [CML](#), and [Cumulative Energy Demand \(LHV\)](#) impact assessment methodologies, [SimaPro 10.2.0.2 software](#), and [ecoinvent v3.12](#) and US-EI 2.2 databases.

ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

ISO 21930:2017, Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services - serves as the core PCR.

UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements v4.0

March 2022. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Hugues Imbeault-Tétreault (Group AGECO); and Jack Geibig (Ecoform).

UL Part B: Commercial Steel Doors and Steel Frames EPD Requirements v3.0

March 2026. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Tim Weller (Allegion), Tim.weller@allegion.com; and Dan Glover (ASSA ABLOY Door Group), dan.glover@assaabloy.com.

UL Solutions General Program Instructions, latest version available (available upon request)

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SM Transparency Reports (TR) are ISO 14025:2006 Type III environmental declarations (EPD) that enable purchasers and users to compare the potential environmental performance of products on a life cycle basis. They are designed to present information transparently to make the limitations of comparability more understandable. Environmental declarations of products that conform to the same PCR and include the same life cycle stages, but are made by different manufacturers, may not sufficiently align to support direct comparisons. They therefore cannot be used as comparative assertions unless the conditions as defined in ISO 14025 Section 6.7.2. ‘Requirements for Comparability’ are satisfied. In order to support comparative assertions, this EPD meets all comparability requirements stated in ISO 14025:2006. However, differences in certain assumptions, data quality, and variability between LCA data sets may still exist. Any EPD comparison must be carried out at the building level per ISO 21930 guidelines, use the same sub-category PCR where applicable, include all relevant information modules, be limited to EPDs applying a functional unit, and be based on equivalent scenarios with respect to the context of construction works. Some LCA impact categories and inventory items are still under development and can have high levels of uncertainty. To promote uniform guidance on the data collection, calculation, and reporting of results, the ACLCA methodology (ACLCA 2019) was used.

Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified life-cycle environmental performance.

LEED BD+C: New Construction | v.5 - LEED v5
MR Credit 4: Building Materials Resources Credit (BPSP)

✔ Product-specific Type III EPD	Multi-attribute score: 1
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LEED BD+C: New Construction | v4.1 - LEED v4.1

Building product disclosure and optimization

Environmental product declarations

○ Industry-wide (generic) EPD	1 product
✔ Product-specific Type III EPD	1.5 products

Green Globes for New Construction and Sustainable Interiors
Materials and resources

- ✔

 NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell
- ✔

 NC 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

BREEAM New Construction 2018

Mat 02 - Environmental impacts from construction products

Environmental Product Declarations (EPD)

○ Industry-average EPD	.5 points
○ Multi-product specific EPD	.75 points
✔ Product-specific EPD	1 point

Impact category	Unit				
Carcinogenics	CTU _h		98.2%	1.82%	0.001%
Non-carcinogenics	CTU _h		98.2%	1.76%	0.025%
Ecotoxicity	CTU _e		99.6%	0.460%	0.021%
Fossil fuel depletion	MJ surplus		8.77E+01	1.25E+01	2.10E-01

References

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ISO 21930:2017, Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services - serves as the core PCR.

UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements v4.0

March 2022. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Hugues Imbeault-Tétreault (Group AGECO); and Jack Geibig (Ecoform).

UL Part B: Commercial Steel Doors and Steel Frames EPD Requirements v3.0

March 2026. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Tim Weller (Allegion), Tim.weller@allegion.com; and Dan Glover (ASSA ABLOY Door Group), dan.glover@assaabloy.com.

UL Solutions General Program Instructions, latest version available (available upon request)

Download PDF SM Transparency Report [EPD]™

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Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified life-cycle environmental performance.

LEED BD+C: New Construction | v.5 - LEED v5
MR Credit 4: Building Materials Resources Credit (BPSP)

Product-specific Type III EPD Multi-attribute score: 1

LEED BD+C: New Construction | v4.1 - LEED v4.1
Building product disclosure and optimization

Environmental product declarations

Industry-wide (generic) EPD 1 product

Product-specific Type III EPD 1.5 products

Green Globes for New Construction and Sustainable Interiors
Materials and resources

NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell

NC 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

BREEAM New Construction 2018
Mat 02 - Environmental impacts from construction products
Environmental Product Declarations (EPD)

Industry-average EPD .5 points

Multi-product specific EPD .75 points

Product-specific EPD 1 point



SM Transparency Report (EPD)™

VERIFICATION

LCA

3rd-party reviewed	
Transparency Report (EPD)	
3rd-party verified	

Validity: 07/14/2026 – 07/14/2031
SM-DAY – 20260714 – 002

MATERIAL HEALTH

Material
evaluation

Self-declared	
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This environmental product declaration (EPD) was externally verified by Beth Cassese, LCACP, CLAR according to ISO 21930:2017; UL Part A; UL Part B for Commercial Steel Doors and Steel Frames; and ISO 14025:2006.

In accordance with ISO 14044 and the reference PCR, this life cycle assessment was conducted by Sustainable Minds and reviewed by Beth Cassese, LCACP, CLAR.

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SUMMARY

Reference PCR
UL Part B: Commercial Steel Doors and Steel Frames

Regions; system boundaries
North America; Cradle-to-gate with options

Declared unit
One commercial three-sided steel frame that can fit a 3-feet x 7-feet door

LCIA methodology
IPCC & TRACI 2.1

LCA software; LCI databases
SimaPro 10.2; ecoinvent v3.12

Public LCA
LCA of Daybar Commercial Steel Doors and Frames

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daybar.com

Contact us

LCA results & interpretation

Frames

AS

DW16

CBO

EF

KERF

EPD additional content

Scope and summary

☐ Cradle to gate ☒ Cradle to gate with options ☐ Cradle to grave

Application

The CBO frames are commercial steel slip-on frames designed for installation over existing wall openings without disturbing finished wall surfaces, making them well suited for renovation and retrofit applications. Manufactured from galvaneal steel, the series is engineered to support both hollow metal and wood doors with a variety of hardware configurations and is available in multiple profiles, custom sizes, and factory-applied finishes to accommodate a range of opening conditions. Its thin profile allows for decorative casing and trim to be installed over top of it.

Declared unit

One commercial three-sided steel frame that can fit a 3-feet x 7-feet door considered in isolation, without a door, weighing 12.7-16.4 kg (density of 52.3-67.7 kg/m³). The 0.124m thick frame covers a linear length of 5.18 m and includes the steel body and hardware plus paint. A scaling factor of 0.05882 can be used to scale to results per linear ft of frame.

Installation activities

The finished frames are assumed to be transported by truck to the installation site, an average of 341 km from Brampton and 445 km from Phoenix. They are then secured using 1.36 kg of screws and bolts. Packaging waste is then disposed.

End of life activities

At the end of the frame's useful life, it is assumed to be transported 100 km by truck to final disposal, where 74% of the steel is recycled and the other portion of the product is landfilled.

Manufacturing data

Reporting period: January 2025 – December 2025

Locations: Brampton, ON, CAN and Phoenix, AZ, USA

What's causing the greatest impacts

All life cycle stages

The production stage dominates the results, with contributions stemming primarily from steel production during raw material extraction and processing. Installation is the next most significant contributor, especially for eutrophication, respiratory effects, and human health categories, while the end-of-life stage contributes relatively little.

Production

Steel-based parts account for over 95% of the total mass of the product and contribute the most to impacts in the raw material extraction phase (A1). While the steel body and hardware have 30% and 70% recycled content, respectively, they made up the majority of impacts in the raw material extraction stage (A1), which accounts for 80-85% of total global warming potential impacts. The Phoenix-manufactured frames had higher transportation and manufacturing (A3) impacts than the Brampton frames, since Brampton benefits from negative global warming potential contributions due to biogenic carbon uptake from packaging materials. Phoenix had slightly higher transportation (A2) impacts due to higher distances from raw material suppliers.

Construction

The installation (A5) of the frame is the second largest impactful contributor to most impact categories. At the installation site, frames are secured using screws and bolts, and packaging waste is disposed, accounting for a relatively high contribution to impact categories such as global warming potential, eutrophication, and human health categories. Distribution (A4) of frames to the installation site accounts for relatively lower impacts.

End of life

The disposal of waste (C4) accounts for most impacts in the end-of-life stage. The recycling or landfilling of frames at the end of their useful life accounts for less than 1% of total results for all impact categories. The potential impacts associated with transportation (C2) of the frame to its final disposal pathway is low compared to those generated during disposal.

Embodied carbon

Embodied carbon can be defined as the cradle-to-gate (A1-A3) global warming potential impacts. The total embodied carbon (IPCC_{Total}, 2013) per declared unit of the CBO frames is 6.26E+01 kg CO₂-eq for the Brampton location and 9.07E+01 kg CO₂-eq for the Phoenix location.

Sensitivity analysis

Sensitivity analyses were performed to check the robustness of the results where the highest potential environmental impacts are occurring. As the bulk of impacts are attributed to raw materials acquisition, and steel-based parts are the major contributors to those impacts, they were selected for sensitivity analysis. The DW16 frames produced in Phoenix were chosen to represent the sensitivity of all frame product results.

Global warming potential was evaluated for sensitivity since Daybar is interested in the potential CO₂-equivalent emissions of its products. While the steel panels have 30% recycled content, increasing the recycled content to 50% could result in a potential decrease of total GWP impacts by about 16.7%.

How we're making it greener

- Minimizing waste
- Recycling materials
- Water-based paints

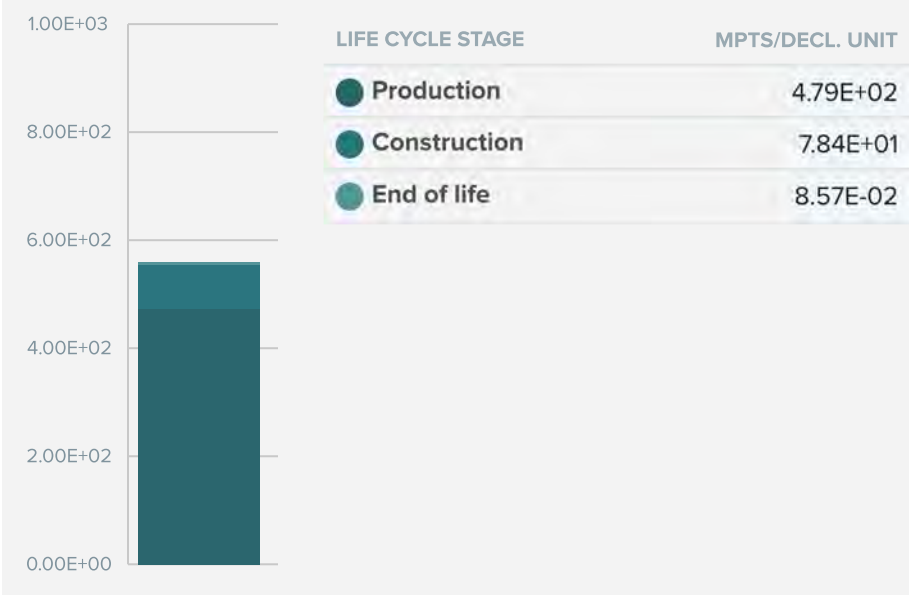
Material composition by wt%

MATERIAL	%WT.
Steel body	85-95%
Steel hardware	5-15%
Primer	<1%

- Use of recycled materials
- Air filtration – ensuring good air quality

See how we make it greener

Total impacts by life cycle stage [mPts/decl unit]



LCA results

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
Information modules: Included (X) Excluded (MND)* *Stages B and D are excluded from this system boundary (MND).	(X) A1 Raw material supply	(X) A4 Distribution	(X) C1 Deconstruction
	(X) A2 Upstream transportation	(X) A5 Installation	(X) C2 Waste Transportation
	(X) A3 Manufacturing		(X) C3 Waste processing
			(X) C4 Disposal
			

SM Single Score [Learn about SM Single Score results](#)

Impacts per declared unit	4.79E+02 mPts	7.84E+01 mPts	8.57E-02 mPts
Materials or processes contributing >20% to total impacts in each life cycle stage	Energy and materials consumed during steel-based part manufacturing.	Installation using screws and bolts.	Landfilling and recycling of frames at the end of life.

Life cycle impact assessment results per declared unit (Brampton, ON, CAN)

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
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Ecological damage

Impact category	Unit				
Global warming	kg CO ₂ eq	?	6.26E+01	1.51E+01	2.40E-01
Ozone depletion	kg CFC-11 eq	?	9.05E-07	1.09E-07	1.21E-09
Acidification	kg SO ₂ eq	?	1.03E+00	4.63E-02	3.19E-04
Eutrophication	kg N eq	?	5.09E-01	8.53E-03	4.83E-04

Human health damage

Impact category	Unit				
Smog	kg O ₃ eq		4.08E+00	6.30E-01	8.79E-03
Respiratory effects	kg PM _{2.5} eq		1.16E-01	2.66E-02	3.23E-05

Additional environmental information

Impact category	Unit				
Carcinogenics	CTU _h	?	97.5%	2.51%	0.001%

Impact category	Unit				
Non-carcinogenics	CTU _h	?	97.9%	2.07%	0.028%
Ecotoxicity	CTU _e	?	99.4%	0.529%	0.027%
Fossil fuel depletion	MJ surplus	?	5.81E+01	9.93E+00	1.52E-01

Life cycle impact assessment results per declared unit (Phoenix, AZ, USA)

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
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Ecological damage

Impact category	Unit				
Global warming	kg CO ₂ eq	?	9.07E+01	1.64E+01	3.02E-01
Ozone depletion	kg CFC-11 eq	?	1.25E-06	1.27E-07	1.57E-09
Acidification	kg SO ₂ eq	?	1.35E+00	5.08E-02	4.13E-04
Eutrophication	kg N eq	?	6.59E-01	9.69E-03	5.04E-04

Human health damage

Impact category	Unit				
Smog	kg O ₃ eq		5.58E+00	7.54E-01	1.14E-02
Respiratory effects	kg PM _{2.5} eq		1.51E-01	2.70E-02	4.17E-05

Additional environmental information

Impact category	Unit				
Carcinogenics	CTU _h	?	98.0%	2.02%	0.001%
Non-carcinogenics	CTU _h	?	98.2%	1.75%	0.025%
Ecotoxicity	CTU _e	?	99.5%	0.458%	0.021%
Fossil fuel depletion	MJ surplus	?	8.79E+01	1.22E+01	1.97E-01

References

LCA Background Report

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ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

ISO 21930:2017, Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services - serves as the core PCR.

UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements v4.0

March 2022. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Hugues Imbeault-Tétreault (Group AGECO); and Jack Geibig (Ecoform).

UL Part B: Commercial Steel Doors and Steel Frames EPD Requirements v3.0

March 2026. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Tim Weller (Allegion), Tim.weller@allegion.com; and Dan Glover (ASSA ABLOY Door Group), dan.glover@assaabloy.com.

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Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified life-cycle environmental performance.

LEED BD+C: New Construction | v.5 - LEED v5
MR Credit 4: Building Materials Resources Credit (BPSP)

☒ Product-specific Type III EPD Multi-attribute score: 1

LEED BD+C: New Construction | v4.1 - LEED v4.1
Building product disclosure and optimization

Environmental product declarations

☐ Industry-wide (generic) EPD 1 product

☒ Product-specific Type III EPD 1.5 products

Green Globes for New Construction and Sustainable Interiors
Materials and resources

☒ NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell

☒ NC 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

BREEAM New Construction 2018

Mat 02 - Environmental impacts from construction products

Environmental Product Declarations (EPD)

☐ Industry-average EPD .5 points

☐ Multi-product specific EPD .75 points

☒ Product-specific EPD 1 point

References

LCA Background Report

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ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

ISO 21930:2017, Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services - serves as the core PCR.

UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements v4.0

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UL Part B: Commercial Steel Doors and Steel Frames EPD Requirements v3.0

March 2026. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Tim Weller (Allegion), Tim.weller@allegion.com; and Dan Glover (ASSA ABLOY Door Group), dan.glover@assaabloy.com.

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Rating systems

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LEED BD+C: New Construction | v.5 - LEED v5
MR Credit 4: Building Materials Resources Credit (BPSP)

✔ Product-specific Type III EPD	Multi-attribute score: 1
---------------------------------	--------------------------

LEED BD+C: New Construction | v4.1 - LEED v4.1
Building product disclosure and optimization

Environmental product declarations

○ Industry-wide (generic) EPD	1 product
✔ Product-specific Type III EPD	1.5 products

Green Globes for New Construction and Sustainable Interiors
Materials and resources

✔ NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell
✔ NC 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

BREEAM New Construction 2018
Mat 02 - Environmental impacts from construction products

Environmental Product Declarations (EPD)

○ Industry-average EPD	.5 points
○ Multi-product specific EPD	.75 points
✔ Product-specific EPD	1 point



SM Transparency Report (EPD)™

VERIFICATION	LCA
3rd-party reviewed	✔
Transparency Report (EPD)	
3rd-party verified	✔
Validity: 07/14/2026 – 07/14/2031 SM-DAY – 20260714 – 002	
MATERIAL HEALTH	Material evaluation
Self-declared	✔

This environmental product declaration (EPD) was externally verified by Beth Cassese, LCACP, CLAR according to ISO 21930:2017; UL Part A; UL Part B for Commercial Steel Doors and Steel Frames; and ISO 14025:2006.

In accordance with ISO 14044 and the reference PCR, this life cycle assessment was conducted by Sustainable Minds and reviewed by Beth Cassese, LCACP, CLAR.

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SUMMARY

Reference PCR
UL Part B: Commercial Steel Doors and Steel Frames

Regions; system boundaries
North America; Cradle-to-gate with options

Declared unit
One commercial three-sided steel frame that can fit a 3-feet x 7-feet door

LCIA methodology
IPCC & TRACI 2.1

LCA software; LCI databases
SimaPro 10.2; ecoinvent v3.12

Public LCA
LCA of Daybar Commercial Steel Doors and Frames

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Contact us

LCA results & interpretation

Frames

- AS

DW16

CBO

EF

KERF

EPD additional content

Scope and summary

- ☐ Cradle to gate

☒ Cradle to gate with options

☐ Cradle to grave

Application

The EF frames are adjustable-throat commercial steel door frames designed to accommodate a broad range of wall thicknesses while providing flexibility for design changes and irregular wall conditions. Manufactured from 16-gauge A60 galvaneal steel, the series is engineered to support both hollow metal and wood doors with a variety of electrified and mechanical hardware configurations, and offers independently tested fire performance, custom sizes, hardware configurations, and adjustable profiles for wall thicknesses ranging from 3½ to 12 inches.

Declared unit

One commercial three-sided steel frame that can fit a 3-feet x 7-feet door considered in isolation, without a door, weighing 26.1 kg (density of 150.3 kg/m³). The 0.089m thick frame covers a linear length of 5.18 m and includes the steel body and hardware plus paint. A scaling factor of 0.05882 can be used to scale to results per linear ft of frame.

Installation activities

The finished frames are assumed to be transported by truck to the installation site, an average of 341 km. They are then secured using 1.36 kg of screws and bolts. Packaging waste is then disposed.

End of life activities

At the end of the frame's useful life, it is assumed to be transported 100 km by truck to final disposal, where 74% of the steel is recycled and the other portion of the product is landfilled.

Manufacturing data

Reporting period: January 2025 – December 2025
Location: Brampton, ON, CAN

What's causing the greatest impacts

All life cycle stages

The production stage dominates the results, with contributions stemming primarily from steel production during raw material extraction and processing. Installation is the next most significant contributor, especially for eutrophication, respiratory effects, and human health categories, while the end-of-life stage contributes relatively little.

Production

Steel-based parts account for over 95% of the total mass of the product and contribute the most to impacts in the raw material extraction phase (A1). While the steel body and hardware have 30% and 70% recycled content, respectively, they made up the majority of impacts in the raw material extraction stage (A1), which accounts for ~88% of total global warming potential impacts. Negative global warming potential contributions in manufacturing (A3) are due to biogenic carbon uptake from packaging materials. Transportation (A2) from raw material suppliers accounts for a small portion of total potential impacts.

Construction

The installation (A5) of the frame is the second largest impactful contributor to most impact categories. At the installation site, frames are secured using screws and bolts, and packaging waste is disposed, accounting for a relatively high contribution to impact categories such as global warming potential, eutrophication, and human health categories. Distribution (A4) of frames to the installation site accounts for relatively lower impacts.

End of life

The disposal of waste (C4) accounts for most impacts in the end-of-life stage. The recycling or landfilling of frames at the end of their useful life accounts for less than 1% of total results for all impact categories. The potential impacts associated with transportation (C2) of the frame to its final disposal pathway is low compared to those generated during disposal.

Embodied carbon

Embodied carbon can be defined as the cradle-to-gate (A1-A3) global warming potential impacts. The total embodied carbon (IPCC_{Total}, 2013) per declared unit of the EF frames is 1.22E+02 kg CO₂-eq.

Sensitivity analysis

Sensitivity analyses were performed to check the robustness of the results where the highest potential environmental impacts are occurring. As the bulk of impacts are attributed to raw materials acquisition, and steel-based parts are the major contributors to those impacts, they were selected for sensitivity analysis. The DW16 frames produced in Phoenix were chosen to represent the sensitivity of all frame product results.

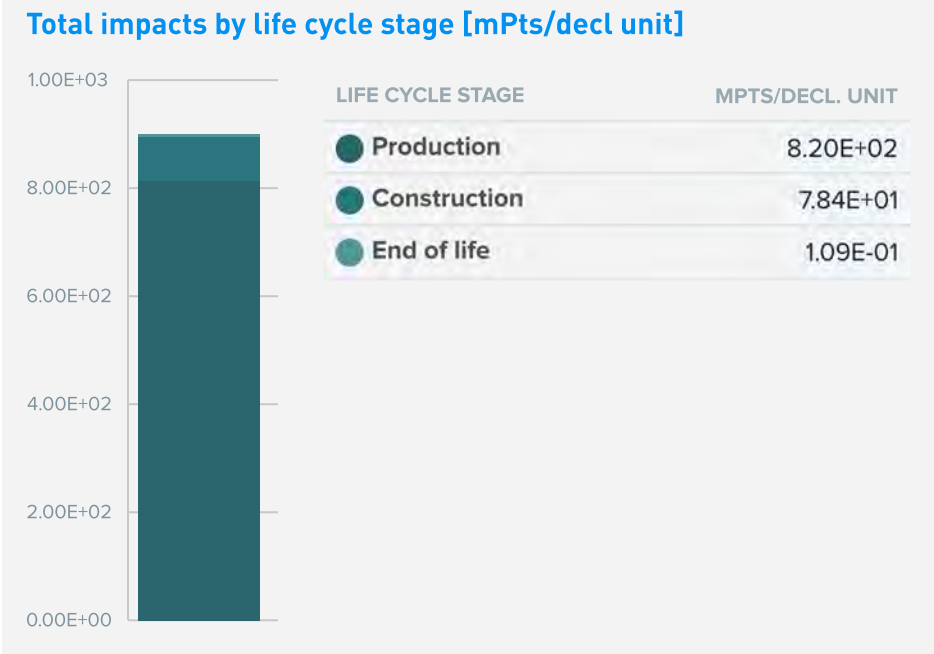
Global warming potential was evaluated for sensitivity since Daybar is interested in the potential CO₂-equivalent emissions of its products. While the steel panels have 30% recycled content, increasing the recycled content to 50% could result in a potential decrease of total GWP impacts by about 16.7%.

How we're making it greener

- Minimizing waste
- Recycling materials
- Water-based paints
- Use of recycled materials
- Air filtration – ensuring good air quality

[See how we make it greener](#)

Material composition by wt%	
MATERIAL	%WT.
Steel body	85-95%
Steel hardware	5-15%
Primer	<1%



LCA results

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
Information modules: Included (X) Excluded (MND)* *Stages B and D are excluded from this system boundary (MND).	(X) A1 Raw material supply	(X) A4 Distribution	(X) C1 Deconstruction
	(X) A2 Upstream transportation	(X) A5 Installation	(X) C2 Waste Transportation
	(X) A3 Manufacturing		(X) C3 Waste processing
			(X) C4 Disposal

SM Single Score [Learn about SM Single Score results](#)

Impacts per declared unit	8.20E+02 mPts	7.84E+01 mPts	1.09E-01 mPts
Materials or processes contributing >20% to total impacts in each life cycle stage	Energy and materials consumed during steel-based part manufacturing.	Installation using screws and bolts.	Landfilling and recycling of frames at the end of life.

Life cycle impact assessment results per declared unit (Brampton, ON, CAN)

LIFE CYCLE STAGE		PRODUCTION		CONSTRUCTION		END OF LIFE	
Ecological damage							
Impact category		Unit					
Global warming	kg CO ₂ eq		1.22E+02	1.59E+01	4.65E-01		
Ozone depletion	kg CFC-11 eq		1.44E-06	1.19E-07	2.49E-09		
Acidification	kg SO ₂ eq		1.62E+00	4.89E-02	6.56E-04		
Eutrophication	kg N eq		9.39E-01	9.19E-03	5.63E-04		
Human health damage							
Impact category		Unit					
Smog	kg O ₃ eq		7.48E+00	7.01E-01	1.81E-02		
Respiratory effects	kg PM _{2.5} eq		2.10E-01	2.68E-02	6.63E-05		
Additional environmental information							
Impact category		Unit					
Carcinogenics	CTU _h		98.7%	1.31%	0.001%		

Impact category	Unit				
Non-carcinogenics	CTU _h		98.8%	1.18%	0.020%
Ecotoxicity	CTU _e		99.7%	0.328%	0.015%
Fossil fuel depletion	MJ surplus		1.06E+02	1.13E+01	3.13E-01

References

LCA Background Report

LCA of Daybar Commercial Steel Doors and Steel Frames (public version), Daybar, 2026. Developed using the [TRACI v2.1](#), [IPCC 2013 AR5](#), [CML](#), and [Cumulative Energy Demand \(LHV\)](#) impact assessment methodologies, [SimaPro 10.2.0.2 software](#), and [ecoinvent v3.12](#) and US-EI 2.2 databases.

ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

ISO 21930:2017, Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services - serves as the core PCR.

UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements v4.0

March 2022. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Hugues Imbeault-Tétreault (Group AGECO); and Jack Geibig (Ecoform).

UL Part B: Commercial Steel Doors and Steel Frames EPD Requirements v3.0

March 2026. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Tim Weller (Allegion), Tim.weller@allegion.com; and Dan Glover (ASSA ABLOY Door Group), dan.glover@assaabloy.com.

UL Solutions General Program Instructions, latest version available (available upon request)

Download PDF SM Transparency Report [EPD]™

SM Transparency Reports (TR) are ISO 14025:2006 Type III environmental declarations (EPD) that enable purchasers and users to compare the potential environmental performance of products on a life cycle basis. They are designed to present information transparently to make the limitations of comparability more understandable. Environmental declarations of products that conform to the same PCR and include the same life cycle stages, but are made by different manufacturers, may not sufficiently align to support direct comparisons. They therefore cannot be used as comparative assertions unless the conditions as defined in ISO 14025 Section 6.7.2. ‘Requirements for Comparability’ are satisfied. In order to support comparative assertions, this EPD meets all comparability requirements stated in ISO 14025:2006. However, differences in certain assumptions, data quality, and variability between LCA data sets may still exist. Any EPD comparison must be carried out at the building level per ISO 21930 guidelines, use the same sub-category PCR where applicable, include all relevant information modules, be limited to EPDs applying a functional unit, and be based on equivalent scenarios with respect to the context of construction works. Some LCA impact categories and inventory items are still under development and can have high levels of uncertainty. To promote uniform guidance on the data collection, calculation, and reporting of results, the ACLCA methodology (ACLCA 2019) was used.

Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified life-cycle environmental performance.

LEED BD+C: New Construction | v.5 - LEED v5
MR Credit 4: Building Materials Resources Credit (BPSP)

Product-specific Type III EPD	Multi-attribute score: 1
--	--------------------------

LEED BD+C: New Construction | v4.1 - LEED v4.1
Building product disclosure and optimization

Environmental product declarations

Industry-wide (generic) EPD	1 product
Product-specific Type III EPD	1.5 products

Green Globes for New Construction and Sustainable Interiors
Materials and resources

NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell
NC 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

BREEAM New Construction 2018

Mat 02 - Environmental impacts from construction products

Environmental Product Declarations (EPD)

Industry-average EPD	.5 points
Multi-product specific EPD	.75 points
Product-specific EPD	1 point



SM Transparency Report (EPD)™

VERIFICATION

LCA

3rd-party reviewed



Transparency Report (EPD)

3rd-party verified



Validity: 07/14/2026 – 07/14/2031
SM-DAY – 20260714 – 002

MATERIAL HEALTH

Material
evaluation

Self-declared



This environmental product declaration (EPD) was externally verified by Beth Cassese, LCACP, CLAR according to ISO 21930:2017; UL Part A; UL Part B for Commercial Steel Doors and Steel Frames; and ISO 14025:2006.

In accordance with ISO 14044 and the reference PCR, this life cycle assessment was conducted by Sustainable Minds and reviewed by Beth Cassese, LCACP, CLAR.

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SUMMARY

Reference PCR

UL Part B: Commercial Steel Doors and Steel Frames

Regions; system boundaries

North America; Cradle-to-gate with options

Declared unit

One commercial three-sided steel frame that can fit a 3-feet x 7-feet door

LCIA methodology

IPCC & TRACI 2.1

LCA software; LCI databases

SimaPro 10.2; ecoinvent v3.12

Public LCA

LCA of Daybar Commercial Steel Doors and Frames

Daybar Industries
50 West Drive,
Brampton, Ontario, L6T 2J4
905 625 8000
daybar.com

Contact us

LCA results & interpretation

Frames

- AS
- DW16
- CBO
- EF
- KERF
- EPD additional content

Scope and summary

- ☐ Cradle to gate
- ☒ Cradle to gate with options
- ☐ Cradle to grave

Application

The KERF frames are gasket-ready commercial steel door frames designed to accommodate kerf-type gasket inserts for efficient installation and enhanced perimeter sealing. Manufactured from 16-gauge A60 galvaneal steel, the series is engineered to support both hollow metal and wood doors with a variety of electrified and mechanical hardware configurations, while offering independently tested fire, severe weather, endurance, and acoustical performance, along with options for custom sizes, profiles, hardware configurations, and specialty finishes.

Declared unit

One commercial three-sided steel frame that can fit a 3-feet x 7-feet door considered in isolation, without a door, weighing 14.1 kg (density of 49.5 kg/m³). The 0.146m thick frame covers a linear length of 5.18 m and includes the steel body and hardware plus paint. A scaling factor of 0.05882 can be used to scale to results per linear ft of frame.

Installation activities

The finished frames are assumed to be transported by truck to the installation site, an average of 341 km. They are then secured using 1.36 kg of screws and bolts. Packaging waste is then disposed.

End of life activities

At the end of the frame's useful life, it is assumed to be transported 100 km by truck to final disposal, where 74% of the steel is recycled and the other portion of the product is landfilled.

Manufacturing data

Reporting period: January 2025 – December 2025

Location: Brampton, ON, CAN

What's causing the greatest impacts

All life cycle stages

The production stage dominates the results, with contributions stemming primarily from steel production during raw material extraction and processing. Installation is the next most significant contributor, especially for eutrophication, respiratory effects, and human health categories, while the end-of-life stage contributes relatively little.

Production

Steel-based parts account for over 95% of the total mass of the product and contribute the most to impacts in the raw material extraction phase (A1). While the steel body and hardware have 30% and 70% recycled content, respectively, they made up the majority of impacts in the raw material extraction stage (A1), which accounts for 75-85% of total global warming potential impacts. Negative global warming potential contributions in manufacturing (A3) are due to biogenic carbon uptake from packaging materials. Transportation (A2) from raw material suppliers accounts for a small portion of total potential impacts.

Construction

The installation (A5) of the frame is the second largest impactful contributor to most impact categories. At the installation site, frames are secured using screws and bolts, and packaging waste is disposed, accounting for a relatively high contribution to impact categories such as global warming potential, eutrophication, and human health categories. Distribution (A4) of frames to the installation site accounts for relatively lower impacts.

End of life

The disposal of waste (C4) accounts for most impacts in the end-of-life stage. The recycling or landfilling of frames at the end of their useful life accounts for less than 1% of total results for all impact categories. The potential impacts associated with transportation (C2) of the frame to its final disposal pathway is low compared to those generated during disposal.

Embodied carbon

Embodied carbon can be defined as the cradle-to-gate (A1-A3) global warming potential impacts. The total embodied carbon (IPCC_{Total}, 2013) per declared unit of the KERF frames is 6.95E+01 kg CO₂-eq.

Sensitivity analysis

Sensitivity analyses were performed to check the robustness of the results where the highest potential environmental impacts are occurring. As the bulk of impacts are attributed to raw materials acquisition, and steel-based parts are the major contributors to those impacts, they were selected for sensitivity analysis. The DW16 frames produced in Phoenix were chosen to represent the sensitivity of all frame product results.

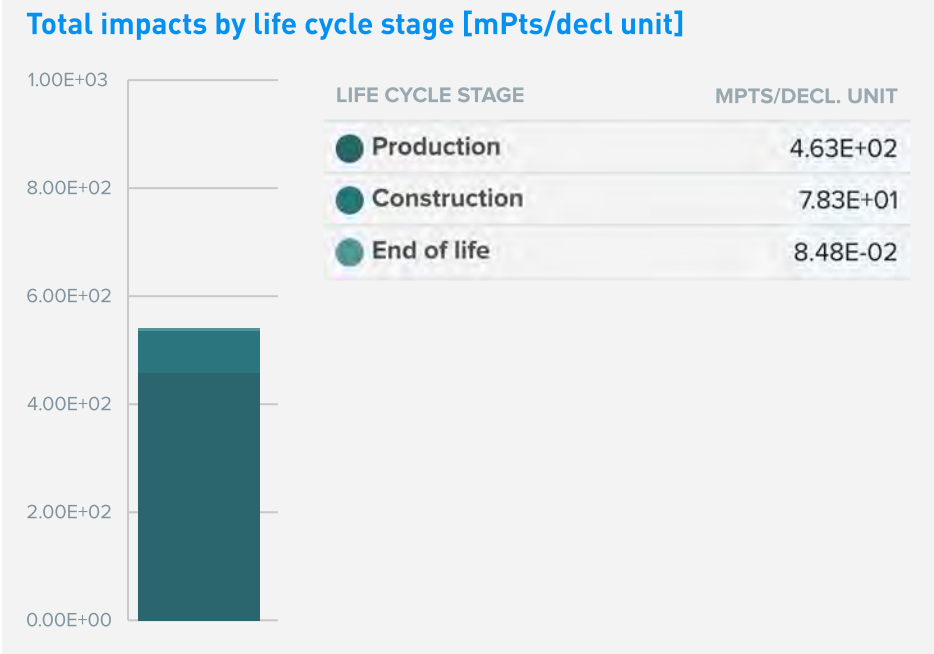
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- Use of recycled materials
- Air filtration – ensuring good air quality

[See how we make it greener](#)

Material composition by wt%	
MATERIAL	%WT.
Steel body	85-95%
Steel hardware	5-15%
Primer	<1%



LCA results

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	END OF LIFE
Information modules: Included (X) Excluded (MND)* *Stages B and D are excluded from this system boundary (MND).	(X) A1 Raw material supply	(X) A4 Distribution	(X) C1 Deconstruction
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	(X) A3 Manufacturing		(X) C3 Waste processing
			(X) C4 Disposal
			

SM Single Score [Learn about SM Single Score results](#)

Impacts per declared unit	4.63E+02 mPts	7.83E+01 mPts	8.48E-02 mPts
Materials or processes contributing >20% to total impacts in each life cycle stage	Energy and materials consumed during steel-based part manufacturing.	Installation using screws and bolts.	Landfilling and recycling of frames at the end of life.

Life cycle impact assessment results per declared unit (Brampton, ON, CAN)

LIFE CYCLE STAGE			PRODUCTION	CONSTRUCTION	END OF LIFE
Ecological damage					
Impact category	Unit				
Global warming	kg CO ₂ eq		6.95E+01	1.52E+01	2.65E-01
Ozone depletion	kg CFC-11 eq		9.74E-07	1.10E-07	1.35E-09
Acidification	kg SO ₂ eq		1.13E+00	4.66E-02	3.56E-04
Eutrophication	kg N eq		5.60E-01	8.60E-03	4.91E-04
Human health damage					
Impact category	Unit				
Smog	kg O ₃ eq		4.49E+00	6.38E-01	9.79E-03
Respiratory effects	kg PM _{2.5} eq		1.29E-01	2.66E-02	3.60E-05
Additional environmental information					
Impact category	Unit				
Carcinogenics	CTU _h		97.7%	2.31%	0.001%

Impact category	Unit			
Non-carcinogenics	CTU _h		98.0%	1.87%
Ecotoxicity	CTU _e		99.5%	0.528%
Fossil fuel depletion	MJ surplus		6.39E+01	1.01E+01
				1.70E-01

References

LCA Background Report

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ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

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UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements v4.0

March 2022. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Hugues Imbeault-Tétreault (Group AGECO); and Jack Geibig (Ecoform).

UL Part B: Commercial Steel Doors and Steel Frames EPD Requirements v3.0

March 2026. PCR review conducted by Lindita Bushi, PhD, Chair (Athena Sustainable Materials Institute), lindita.bushi@athenasmi.org; Tim Weller (Allegion), Tim.weller@allegion.com; and Dan Glover (ASSA ABLOY Door Group), dan.glover@assaabloy.com.

UL Solutions General Program Instructions, latest version available (available upon request)

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Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified life-cycle environmental performance.

LEED BD+C: New Construction | v.5 - LEED v5
MR Credit 4: Building Materials Resources Credit (BPSP)

Product-specific Type III EPD Multi-attribute score: 1

LEED BD+C: New Construction | v4.1 - LEED v4.1
Building product disclosure and optimization

Environmental product declarations

☐ Industry-wide (generic) EPD 1 product

Product-specific Type III EPD 1.5 products

Green Globes for New Construction and Sustainable Interiors
Materials and resources

NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell

NC 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

BREEAM New Construction 2018
Mat 02 - Environmental impacts from construction products
Environmental Product Declarations (EPD)

☐ Industry-average EPD .5 points

☐ Multi-product specific EPD .75 points

Product-specific EPD 1 point



SM Transparency Report (EPD)™

VERIFICATION LCA

3rd-party reviewed

Transparency Report (EPD)

3rd-party verified

Validity: 07/14/2026 – 07/14/2031
SM-DAY – 20260714 – 002

MATERIAL HEALTH Material evaluation

Self-declared

This environmental product declaration (EPD) was externally verified by Beth Cassese, LCACP, CLAR according to ISO 21930:2017; UL Part A; UL Part B for Commercial Steel Doors and Steel Frames; and ISO 14025:2006.

In accordance with ISO 14044 and the reference PCR, this life cycle assessment was conducted by Sustainable Minds and reviewed by Beth Cassese, LCACP, CLAR.

Horizon LCA Services
910-356-5720
admin@horizonlca.com



SUMMARY

Reference PCR
UL Part B: Commercial Steel Doors and Steel Frames

Regions; system boundaries
North America; Cradle-to-gate with options

Declared unit
One commercial three-sided steel frame that can fit a 3-feet x 7-feet door

LCIA methodology
IPCC & TRACI 2.1

LCA software; LCI databases
SimaPro 10.2; ecoinvent v3.12

Public LCA
LCA of Daybar Commercial Steel Doors and Frames

Daybar Industries
50 West Drive,
Brampton, Ontario, L6T 2J4
905 625 8000
daybar.com

Contact us

EPD additional content

Frames

- AS
- DW16
- CBO
- EF
- KERF
- EPD additional content

Data

Background This product-specific plant-specific declaration was created by collecting production data from the facilities in Brampton, ON, CAN and Phoenix, AZ, USA. All unit processes were modeled using primary data. Secondary data sources include those available in the ecoinvent v3.12 and US-EI 2.2 databases.

Allocation The Daybar facilities produce various kinds of door and frame products. To accurately allocate energy use and waste flows to the studied production lines, the plant's total annual values were proportionally distributed per production unit. Number of units was used as an allocation parameter. Resources were normalized to each product series based on the total number of frames produced and later scaled down to a frame fitting a 3-feet by 7-feet door.

Per ISO 21930, 2.8.4.1.2, the useable output flows such as steel scrap are not considered to be co-products but are considered recyclable waste, and no allocation to secondary material, secondary fuels, or recovered energy was applied. There were no co-products produced during the manufacturing processes.

Cut-off criteria for the inclusion of mass and energy flows are 1% of renewable primary resource (energy) usage, 1% nonrenewable primary resource (energy) usage, 1% of the total mass input of that unit process, and 1% of environmental impacts. The total of neglected input flows per module does not exceed 5% of energy usage, mass, and environmental impacts.

The only exceptions to these criteria are substances with hazardous and toxic properties, which must be listed even when the given process unit is under the cut-off criterion of 1% of the total mass. No renewable energy was used in production beyond that accounted for in the regional grid data sets, and no energy was recovered. No known flows are deliberately excluded from this declaration, and no substances considered to be hazardous or toxic according to the TRI or local regulations are present in the products. Biogenic carbon is included in reported results. Therefore, these criteria have been met.

Quality The precision of the data is considered high. Daybar personnel provided detailed bills of materials and utility information for the manufacturing facilities. The raw material transportation distances were calculated based on the raw material supplier addresses.

The data included is considered complete. The LCA model included all known material and energy flows. As pointed out in that section, no known flows above 1% were excluded and the sum of all excluded flows totals less than 5%, whether evaluated by mass, energy, or potential environmental impact.

The consistency of the model is considered high. The bills of materials provided by Daybar personnel were developed with the help of multiple internal departments and are maintained regularly. Furthermore, the modeling assumptions were consistent throughout the model, with a preference for the ecoinvent v3.12 database.

Uncertainty of background data is addressed in the ecoinvent database documentation. Uncertainty for the primary data stems from annual utility data provided, which is expected to fluctuate due to changes in weather and production efficiency.

LCIA indicators required by the PCR are global warming potential (GWP 100), IPCC 2013, ozone depletion, acidification, eutrophication, smog, and Abiotic Resource Depletion Potential of Non-renewable (fossil) energy resources (ADP_{fossil}). These six impact categories are globally deemed mature enough to be included in Type III environmental declarations. Other categories are being developed and defined and LCA should continue making advances in their

Scenarios and additional technical information

Manufacturing [A3]

The finished steel frames are stacked on skids, protected with cardboard coverings, and secured with nylon straps.

Distribution [A4]

Name		Value	Unit
Fuel type		Diesel	
Vehicle type		Truck and trailer	
Liters of fuel		23	L/100 km
Average distance from Brampton facility to installation site		578	km
Average distance from Phoenix facility to installation site		445	km
Capacity utilization (by mass, including empty runs)		50	%
Capacity utilization volume factor		1	-
Gross density of products transported (kg/m3)	AS	59.7	kg/m ³
	DW16	60.5-61.5	kg/m ³
	CBO	52.3-67.7	kg/m ³
	EF	150	kg/m ³
	KERF	49.5	kg/m ³

Installation [A5]

Name		Amount	Unit
Ancillary material (screw, bolt, hinge, hardware, etc.)		1.36	kg
Mass of packaging waste sent to recycling	Nylon strap	0.00027	kg
	Metal strip	0.0051	kg
	Wood pallet and cardboard	1.48	kg
Mass of packaging waste sent to landfill	Nylon strap	0.00222	kg
	Metal strip	0.00306	kg
	Wood pallet and cardboard	0.589	kg
Mass of packaging waste sent to incineration	Nylon strap	0.00051	kg
	Metal strip	0.00081	kg
	Wood pallet and cardboard	0.109	kg
Biogenic carbon contained in packaging		3.58	kg CO2
Product loss per declared unit		0	kg

End of life [C1-C4]

This study assumes a transport distance of 100 km for landfill and recycling. There are no biogenic carbon removals or emissions associated with frames at the end of life.

Name	Disposal pathway	Amount	Unit
Steel frames produced at Brampton facility			

development. However, the EPD users shall not use additional measures for comparative purposes.

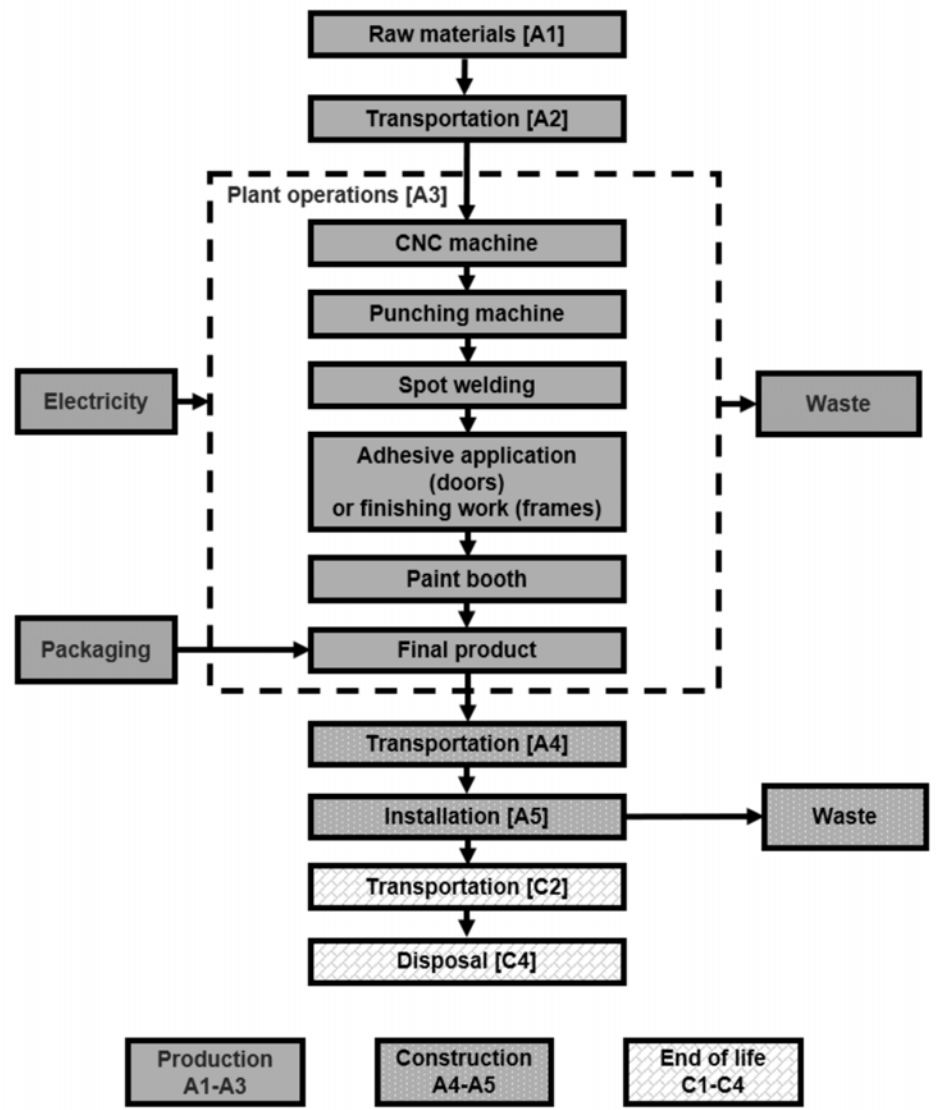
Major system boundary exclusions

- Construction of major capital equipment
- Human labor and employee transport
- Energy consumption for installation
- Building operational water use for office work
- Textiles used for product cleaning

Technical data

Name	Test	Product	Value
Sound transmission coefficient	ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements	Frame-only products	N/A
U Value	NFRC 102 - Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems	Frame-only products	N/A

Flow diagram



AS frames	Collected separately (100%)	17.01	kg
	Steel to recycling	12.55	kg
	Steel to landfill	4.41	kg
	Other materials to landfill	0.05	kg
DW16 frames	Collected separately (100%)	17.24	kg
	Steel to recycling	12.72	kg
	Steel to landfill	4.47	kg
	Other materials to landfill	0.05	kg
CBO frames	Collected separately (100%)	12.66	kg
	Steel to recycling	9.33	kg
	Steel to landfill	3.28	kg
	Other materials to landfill	0.05	kg
EF frames	Collected separately (100%)	26.09	kg
	Steel to recycling	19.27	kg
	Steel to landfill	6.77	kg
	Other materials to landfill	0.05	kg
KERF frames	Collected separately (100%)	14.11	kg
	Steel to recycling	10.41	kg
	Steel to landfill	3.66	kg
	Other materials to landfill	0.04	kg

Steel frames produced at Phoenix facility

AS frames	Collected separately (100%)	17.01	kg
	Steel to recycling	12.55	kg
	Steel to landfill	4.41	kg
	Other materials to landfill	0.05	kg
DW16 frames	Collected separately (100%)	17.51	kg
	Steel to recycling	12.92	kg
	Steel to landfill	4.54	kg
	Other materials to landfill	0.05	kg
CBO frames	Collected separately (100%)	16.38	kg
	Steel to recycling	12.08	kg
	Steel to landfill	4.24	kg
	Other materials to landfill	0.06	kg

Major assumptions and limitations

- Variations in color choices are assumed to be negligible
- Generic data sets used for material inputs, transport, and waste processing are considered good quality, but actual impacts from material suppliers, transport carriers, and local waste processing may vary
- Some data sets, such as those for adhesives, air filters, and cut off wheels, were developed using proxy data sets or by combining chemical composition data based on the proportion of raw materials; as a result, actual impacts associated with specific manufacturing processes or suppliers may differ
- The impact assessment methodology categories do not represent all possible environmental impact categories; characterization factors used within the impact assessment methodology may contain varying levels of uncertainty
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- LCA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks

LCIA results, resource use, output & waste flows, and carbon emissions & removals per declared unit (AS frames, Brampton)

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4
LCIA results										
GWPTotal (IPCC 2013)	kg CO2 eq	8.15E+01	1.86E-01	-1.29E+00	1.05E+00	1.43E+01	0	2.73E-01	0	3.97E-02
Ozone depletion	kg CFC-11 eq	7.91E-07	2.63E-09	2.47E-07	1.49E-08	9.75E-08	0	1.55E-09	0	8.10E-11
Acidification	kg SO2 eq	1.08E+00	6.56E-04	9.53E-03	3.72E-03	4.34E-02	0	3.86E-04	0	4.26E-05
Eutrophication	kg N eq	6.04E-01	1.68E-04	2.81E-02	9.52E-04	7.79E-03	0	9.88E-05	0	4.10E-04
Smog	kg O3 eq	4.83E+00	1.78E-02	1.83E-01	1.01E-01	5.52E-01	0	1.05E-02	0	1.30E-03
Respiratory effects	kg PM2.5 eq	1.38E-01	6.37E-05	1.70E-03	3.61E-04	2.63E-02	0	3.75E-05	0	5.84E-06

Additional environmental information										
Carcinogenics	CTUh	97.8%	0.0021%	0.285%	0.0118%	1.90%	0	0.00122%	0	0.00016%
Non carcinogenics	CTUh	97.6%	0.0140%	0.656%	0.079%	1.70%	0	0.00822%	0	0.017%
Ecotoxicity	CTUe	99.0%	0.0051%	0.523%	0.0289%	0.400%	0	0.00300%	0	0.018%
Fossil fuel depletion	MJ surplus	6.81E+01	3.32E-01	2.83E+00	1.88E+00	8.48E+00	0	1.95E-01	0	9.22E-03
Resource use indicators										
Renewable primary energy used as energy carrier (fuel)	MJ, NCV	1.01E+02	4.91E-03	4.22E+01	2.79E-02	2.58E+01	0	7.23E-03	0	9.37E-04
Renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	3.56E+01	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of renewable primary resources with energy content	MJ, NCV	1.01E+02	4.91E-03	7.78E+01	2.79E-02	2.58E+01	0	7.23E-03	0	9.37E-04
Non-renewable primary resources used as an energy carrier (fuel)	MJ, NCV	9.89E+02	2.59E+00	7.50E+01	1.47E+01	1.23E+02	0	3.82E+00	0	1.77E-01
Non-renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	8.37E-02	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of non-renewable primary resources with energy content	MJ, NCV	9.89E+02	2.59E+00	7.51E+01	1.47E+01	1.23E+02	0	3.82E+00	0	1.77E-01
Secondary materials	kg	5.33E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Recovered energy	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Use of net fresh water resources	m3	3.28E+01	4.18E-03	1.02E+00	2.37E-02	4.87E+00	0	2.46E-03	0	1.92E-04
Abiotic depletion potential, fossil	MJ, NCV	8.58E+02	2.43E+00	2.58E+01	1.38E+01	1.05E+02	0	3.58E+00	0	1.66E-01
Output flows and waste category indicators										
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	3.94E-01	0.00E+00	2.19E+00	0	0.00E+00	0	4.46E+00
High-level radioactive waste, conditioned, to final repository	kg	3.82E-04	3.35E-08	1.40E-04	1.90E-07	5.64E-05	0	4.93E-08	0	3.76E-09
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	7.16E-04	7.04E-08	3.13E-04	3.99E-07	1.02E-04	0	1.04E-07	0	8.66E-09
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	1.06E+00	0.00E+00	6.29E-03	0	0.00E+00	0	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions and removals										
Biogenic carbon removal from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon removal from packaging	kg CO2	0.00E+00	0.00E+00	-3.58E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from packaging	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Calcination carbon emissions	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbonation carbon removals	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions from combustion of waste from renewable and non-renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00

LCIA results, resource use, output & waste flows, and carbon emissions & removals per declared unit (AS frames, Phoenix)

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4
LCIA results										
GWPTotal (IPCC 2013)	kg CO2 eq	8.15E+01	2.21E+00	6.54E+00	2.18E+00	1.43E+01	0	2.73E-01	0	3.97E-02
Ozone depletion	kg CFC-11 eq	7.91E-07	3.13E-08	3.75E-07	3.08E-08	9.75E-08	0	1.55E-09	0	8.10E-11
Acidification	kg SO2 eq	1.08E+00	7.81E-03	3.08E-02	7.69E-03	4.34E-02	0	3.86E-04	0	4.26E-05
Eutrophication	kg N eq	6.04E-01	2.00E-03	3.95E-02	1.97E-03	7.79E-03	0	9.88E-05	0	4.10E-04
Smog	kg O3 eq	4.83E+00	2.12E-01	3.92E-01	2.09E-01	5.52E-01	0	1.05E-02	0	1.30E-03
Respiratory effects	kg PM2.5 eq	1.38E-01	7.58E-04	2.88E-03	7.46E-04	2.63E-02	0	3.75E-05	0	5.84E-06
Additional environmental information										
Carcinogenics	CTUh	97.7%	0.0247%	0.352%	0.0243%	1.90%	0	0.00122%	0	0.00016%
Non carcinogenics	CTUh	97.1%	0.1654%	0.911%	0.163%	1.70%	0	0.00818%	0	0.017%

Renewable primary energy used as energy carrier (fuel)	MJ, NCV	1.02E+02	4.98E-03	4.22E+01	2.82E-02	2.58E+01	0	7.33E-03	0	9.47E-04
Renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	3.56E+01	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of renewable primary resources with energy content	MJ, NCV	1.02E+02	4.98E-03	7.78E+01	2.82E-02	2.58E+01	0	7.33E-03	0	9.47E-04
Non-renewable primary resources used as an energy carrier (fuel)	MJ, NCV	1.00E+03	2.63E+00	7.50E+01	1.49E+01	1.23E+02	0	3.87E+00	0	1.79E-01
Non-renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	8.37E-02	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of non-renewable primary resources with energy content	MJ, NCV	1.00E+03	2.63E+00	7.51E+01	1.49E+01	1.23E+02	0	3.87E+00	0	1.79E-01
Secondary materials	kg	5.44E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Recovered energy	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Use of net fresh water resources	m3	3.23E+01	4.19E-03	9.98E-01	2.37E-02	4.87E+00	0	2.47E-03	0	1.91E-04
Abiotic depletion potential, fossil	MJ, NCV	8.67E+02	2.47E+00	2.58E+01	1.40E+01	1.05E+02	0	3.63E+00	0	1.68E-01
Output flows and waste category indicators										
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	3.94E-01	0.00E+00	2.19E+00	0	0.00E+00	0	4.52E+00
High-level radioactive waste, conditioned, to final repository	kg	3.87E-04	3.39E-08	1.40E-04	1.92E-07	5.64E-05	0	4.99E-08	0	3.80E-09
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	7.25E-04	7.13E-08	3.13E-04	4.04E-07	1.02E-04	0	1.05E-07	0	8.74E-09
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	1.06E+00	0.00E+00	6.29E-03	0	0.00E+00	0	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions and removals										
Biogenic carbon removal from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon removal from packaging	kg CO2	0.00E+00	0.00E+00	-3.58E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from packaging	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Calcination carbon emissions	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbonation carbon removals	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions from combustion of waste from renewable and non-renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00

LCIA results, resource use, output & waste flows, and carbon emissions & removals per declared unit (DW16 frames, Phoenix)

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4
LCIA results										
GWPTotal (IPCC 2013)	kg CO2 eq	8.40E+01	2.26E+00	6.54E+00	2.24E+00	1.43E+01	0	2.81E-01	0	4.01E-02
Ozone depletion	kg CFC-11 eq	8.15E-07	3.19E-08	3.75E-07	3.16E-08	9.75E-08	0	1.59E-09	0	8.33E-11
Acidification	kg SO2 eq	1.11E+00	7.97E-03	3.08E-02	7.90E-03	4.34E-02	0	3.97E-04	0	4.38E-05
Eutrophication	kg N eq	6.22E-01	2.04E-03	3.95E-02	2.02E-03	7.79E-03	0	1.02E-04	0	4.10E-04
Smog	kg O3 eq	4.98E+00	2.17E-01	3.92E-01	2.15E-01	5.52E-01	0	1.08E-02	0	1.33E-03
Respiratory effects	kg PM2.5 eq	1.43E-01	7.74E-04	2.88E-03	7.67E-04	2.63E-02	0	3.86E-05	0	6.01E-06
Additional environmental information										
Carcinogenics	CTUh	97.8%	0.0245%	0.342%	0.0243%	1.80%	0	0.00122%	0	0.00015%
Non carcinogenics	CTUh	97.2%	0.1641%	0.885%	0.163%	1.60%	0	0.00818%	0	0.017%
Ecotoxicity	CTUe	98.9%	0.0601%	0.591%	0.0595%	0.400%	0	0.00299%	0	0.018%
Fossil fuel depletion	MJ surplus	7.02E+01	4.03E+00	1.35E+01	4.00E+00	8.48E+00	0	2.01E-01	0	9.47E-03
Resource use indicators										
Renewable primary energy used as energy carrier (fuel)	MJ, NCV	1.04E+02	5.97E-02	4.93E+01	5.92E-02	2.58E+01	0	7.44E-03	0	9.58E-04
Renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	3.56E+01	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00

Total use of renewable primary resources with energy content	MJ, NCV	1.04E+02	5.97E-02	8.49E+01	5.92E-02	2.58E+01	0	7.44E-03	0	9.58E-04
Non-renewable primary resources used as an energy carrier (fuel)	MJ, NCV	1.02E+03	3.15E+01	1.92E+02	3.13E+01	1.23E+02	0	3.93E+00	0	1.82E-01
Non-renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	8.37E-02	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of non-renewable primary resources with energy content	MJ, NCV	1.02E+03	3.15E+01	1.92E+02	3.13E+01	1.23E+02	0	3.93E+00	0	1.82E-01
Secondary materials	kg	5.47E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Recovered energy	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Use of net fresh water resources	m3	3.17E+01	4.89E-02	1.08E+00	4.85E-02	4.87E+00	0	2.44E-03	0	1.89E-04
Abiotic depletion potential, fossil	MJ, NCV	8.83E+02	2.96E+01	1.21E+02	2.93E+01	1.05E+02	0	3.69E+00	0	1.70E-01
Output flows and waste category indicators										
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	3.73E-01	0.00E+00	2.19E+00	0	0.00E+00	0	4.59E+00
High-level radioactive waste, conditioned, to final repository	kg	3.94E-04	4.07E-07	1.80E-04	4.03E-07	5.64E-05	0	5.07E-08	0	3.84E-09
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	7.38E-04	8.56E-07	4.00E-04	8.48E-07	1.02E-04	0	1.07E-07	0	8.84E-09
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	9.81E-01	0.00E+00	6.29E-03	0	0.00E+00	0	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions and removals										
Biogenic carbon removal from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon removal from packaging	kg CO2	0.00E+00	0.00E+00	-3.58E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from packaging	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Calcination carbon emissions	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbonation carbon removals	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions from combustion of waste from renewable and non-renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00

LCIA results, resource use, output & waste flows, and carbon emissions & removals per declared unit (CBO frames, Brampton)

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4
LCIA results										
GWPTotal (IPCC 2013)	kg CO2 eq	6.38E+01	1.38E-01	-1.29E+00	8.14E-01	1.43E+01	0	2.03E-01	0	3.66E-02
Ozone depletion	kg CFC-11 eq	6.56E-07	1.95E-09	2.47E-07	1.15E-08	9.75E-08	0	1.15E-09	0	6.18E-11
Acidification	kg SO2 eq	1.02E+00	4.88E-04	9.53E-03	2.88E-03	4.34E-02	0	2.87E-04	0	3.24E-05
Eutrophication	kg N eq	4.81E-01	1.25E-04	2.81E-02	7.36E-04	7.79E-03	0	7.35E-05	0	4.09E-04
Smog	kg O3 eq	3.88E+00	1.33E-02	1.83E-01	7.82E-02	5.52E-01	0	7.81E-03	0	9.75E-04
Respiratory effects	kg PM2.5 eq	1.14E-01	4.74E-05	1.70E-03	2.79E-04	2.63E-02	0	2.79E-05	0	4.43E-06
Additional environmental information										
Carcinogenics	CTUh	97.1%	0.0020%	0.374%	0.0119%	2.50%	0	0.00119%	0	0.00020%
Non carcinogenics	CTUh	97.1%	0.0126%	0.799%	0.075%	2.00%	0	0.00745%	0	0.021%
Ecotoxicity	CTUe	98.7%	0.0049%	0.670%	0.0287%	0.500%	0	0.00286%	0	0.024%
Fossil fuel depletion	MJ surplus	5.50E+01	2.47E-01	2.83E+00	1.45E+00	8.48E+00	0	1.45E-01	0	7.03E-03
Resource use indicators										
Renewable primary energy used as energy carrier (fuel)	MJ, NCV	8.03E+01	3.66E-03	4.22E+01	2.16E-02	2.58E+01	0	5.38E-03	0	7.51E-04

Renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	3.56E+01	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of renewable primary resources with energy content	MJ, NCV	8.03E+01	3.66E-03	7.78E+01	2.16E-02	2.58E+01	0	5.38E-03	0	7.51E-04
Non-renewable primary resources used as an energy carrier (fuel)	MJ, NCV	7.87E+02	1.93E+00	7.50E+01	1.14E+01	1.23E+02	0	2.84E+00	0	1.35E-01
Non-renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	8.37E-02	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of non-renewable primary resources with energy content	MJ, NCV	7.87E+02	1.93E+00	7.51E+01	1.14E+01	1.23E+02	0	2.84E+00	0	1.35E-01
Secondary materials	kg	3.88E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Recovered energy	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Use of net fresh water resources	m3	3.32E+01	4.74E-03	1.21E+00	2.80E-02	4.87E+00	0	2.79E-03	0	2.25E-04
Abiotic depletion potential, fossil	MJ, NCV	6.79E+02	1.81E+00	2.58E+01	1.07E+01	1.05E+02	0	2.67E+00	0	1.26E-01
Output flows and waste category indicators										
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	3.94E-01	0.00E+00	2.19E+00	0	0.00E+00	0	3.33E+00
High-level radioactive waste, conditioned, to final repository	kg	3.27E-04	2.49E-08	1.40E-04	1.47E-07	5.64E-05	0	3.67E-08	0	3.08E-09
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	6.04E-04	5.24E-08	3.13E-04	3.09E-07	1.02E-04	0	7.71E-08	0	7.11E-09
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	1.06E+00	0.00E+00	6.29E-03	0	0.00E+00	0	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions and removals										
Biogenic carbon removal from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon removal from packaging	kg CO2	0.00E+00	0.00E+00	-3.58E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from packaging	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Calcination carbon emissions	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbonation carbon removals	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions from combustion of waste from renewable and non- renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00

LCIA results, resource use, output & waste flows, and carbon emissions & removals per declared unit (CB0 frames, Phoenix)

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4
LCIA results										
GWPTotal (IPCC 2013)	kg CO2 eq	8.20E+01	2.15E+00	6.54E+00	2.10E+00	1.43E+01	0	2.63E-01	0	3.93E-02
Ozone depletion	kg CFC-11 eq	8.42E-07	3.04E-08	3.75E-07	2.97E-08	9.75E-08	0	1.49E-09	0	7.83E-11
Acidification	kg SO2 eq	1.31E+00	7.60E-03	3.08E-02	7.41E-03	4.34E-02	0	3.72E-04	0	4.12E-05
Eutrophication	kg N eq	6.18E-01	1.94E-03	3.95E-02	1.90E-03	7.79E-03	0	9.51E-05	0	4.09E-04
Smog	kg O3 eq	4.98E+00	2.07E-01	3.92E-01	2.02E-01	5.52E-01	0	1.01E-02	0	1.25E-03
Respiratory effects	kg PM2.5 eq	1.47E-01	7.38E-04	2.88E-03	7.20E-04	2.63E-02	0	3.61E-05	0	5.64E-06
Additional environmental information										
Carcinogenics	CTUh	97.6%	0.0247%	0.362%	0.0241%	2.00%	0	0.00121%	0	0.00016%

Non carcinogenics	CTUh	97.2%	0.1538%	0.871%	0.150%	1.60%	0	0.00752%	0	0.017%
Ecotoxicity	CTUe	98.8%	0.0590%	0.608%	0.0575%	0.400%	0	0.00288%	0	0.018%
Fossil fuel depletion	MJ surplus	7.06E+01	3.84E+00	1.35E+01	3.75E+00	8.48E+00	0	1.88E-01	0	8.91E-03
Resource use indicators										
Renewable primary energy used as energy carrier (fuel)	MJ, NCV	1.03E+02	5.69E-02	4.93E+01	5.56E-02	2.58E+01	0	6.96E-03	0	9.11E-04
Renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	3.56E+01	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of renewable primary resources with energy content	MJ, NCV	1.03E+02	5.69E-02	8.49E+01	5.56E-02	2.58E+01	0	6.96E-03	0	9.11E-04
Non-renewable primary resources used as an energy carrier (fuel)	MJ, NCV	1.01E+03	3.01E+01	1.92E+02	2.93E+01	1.23E+02	0	3.68E+00	0	1.71E-01
Non-renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	8.37E-02	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of non-renewable primary resources with energy content	MJ, NCV	1.01E+03	3.01E+01	1.92E+02	2.93E+01	1.23E+02	0	3.68E+00	0	1.71E-01
Secondary materials	kg	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Recovered energy	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Use of net fresh water resources	m3	3.45E+01	4.81E-02	1.14E+00	4.70E-02	4.87E+00	0	2.35E-03	0	1.90E-04
Abiotic depletion potential, fossil	MJ, NCV	8.71E+02	2.82E+01	1.21E+02	2.75E+01	1.05E+02	0	3.45E+00	0	1.60E-01
Output flows and waste category indicators										
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	3.73E-01	0.00E+00	2.19E+00	0	0.00E+00	0	4.30E+00
High-level radioactive waste, conditioned, to final repository	kg	4.19E-04	3.88E-07	1.80E-04	3.79E-07	5.64E-05	0	4.74E-08	0	3.67E-09
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	7.76E-04	8.16E-07	4.00E-04	7.96E-07	1.02E-04	0	9.97E-08	0	8.44E-09
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	9.81E-01	0.00E+00	6.29E-03	0	0.00E+00	0	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions and removals										
Biogenic carbon removal from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon removal from packaging	kg CO2	0.00E+00	0.00E+00	-3.58E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from packaging	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Calcination carbon emissions	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbonation carbon removals	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions from combustion of waste from renewable and non-renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00

LCIA results, resource use, output & waste flows, and carbon emissions & removals per declared unit (EF frames, Brampton)

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4
LCIA results										
GWPTotal (IPCC 2013)	kg CO2 eq	1.23E+02	2.85E-01	-1.29E+00	1.55E+00	1.43E+01	0	4.19E-01	0	4.62E-02
Ozone depletion	kg CFC-11 eq	1.19E-06	4.03E-09	2.47E-07	2.19E-08	9.75E-08	0	2.37E-09	0	1.21E-10
Acidification	kg SO2 eq	1.61E+00	1.01E-03	9.53E-03	5.47E-03	4.34E-02	0	5.92E-04	0	6.40E-05
Eutrophication	kg N eq	9.11E-01	2.57E-04	2.81E-02	1.40E-03	7.79E-03	0	1.51E-04	0	4.12E-04
Smog	kg O3 eq	7.27E+00	2.74E-02	1.83E-01	1.49E-01	5.52E-01	0	1.61E-02	0	1.97E-03
Respiratory effects	kg PM2.5 eq	2.08E-01	9.76E-05	1.70E-03	5.32E-04	2.63E-02	0	5.75E-05	0	8.79E-06
Additional environmental information										
Carcinogenics	CTUh	98.5%	0.0021%	0.193%	0.0117%	1.30%	0	0.00126%	0	0.00011%
Non carcinogenics	CTUh	98.3%	0.0144%	0.441%	0.078%	1.10%	0	0.00846%	0	0.012%
Ecotoxicity	CTUe	99.3%	0.0052%	0.348%	0.0283%	0.300%	0	0.00306%	0	0.012%
Fossil fuel depletion	MJ surplus	1.03E+02	5.09E-01	2.83E+00	2.77E+00	8.48E+00	0	2.99E-01	0	1.38E-02

Resource use indicators										
Renewable primary energy used as energy carrier (fuel)	MJ, NCV	1.52E+02	7.54E-03	4.22E+01	4.10E-02	2.58E+01	0	1.11E-02	0	1.32E-03
Renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	3.56E+01	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of renewable primary resources with energy content	MJ, NCV	1.52E+02	7.54E-03	7.78E+01	4.10E-02	2.58E+01	0	1.11E-02	0	1.32E-03
Non-renewable primary resources used as an energy carrier (fuel)	MJ, NCV	1.49E+03	3.98E+00	7.50E+01	2.17E+01	1.23E+02	0	5.85E+00	0	2.65E-01
Non-renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	8.37E-02	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of non-renewable primary resources with energy content	MJ, NCV	1.49E+03	3.98E+00	7.51E+01	2.17E+01	1.23E+02	0	5.85E+00	0	2.65E-01
Secondary materials	kg	8.75E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Recovered energy	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Use of net fresh water resources	m3	3.43E+01	4.99E-03	7.58E-01	2.72E-02	4.87E+00	0	2.94E-03	0	2.08E-04
Abiotic depletion potential, fossil	MJ, NCV	1.29E+03	3.73E+00	2.58E+01	2.03E+01	1.05E+02	0	5.49E+00	0	2.48E-01
Output flows and waste category indicators										
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	3.94E-01	0.00E+00	2.19E+00	0	0.00E+00	0	6.82E+00
High-level radioactive waste, conditioned, to final repository	kg	5.75E-04	5.13E-08	1.40E-04	2.80E-07	5.64E-05	0	7.55E-08	0	5.19E-09
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	1.08E-03	1.08E-07	3.13E-04	5.88E-07	1.02E-04	0	1.59E-07	0	1.19E-08
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	1.06E+00	0.00E+00	6.29E-03	0	0.00E+00	0	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions and removals										
Biogenic carbon removal from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon removal from packaging	kg CO2	0.00E+00	0.00E+00	-3.58E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from packaging	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Calcination carbon emissions	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbonation carbon removals	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions from combustion of waste from renewable and non-renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00

LCIA results, resource use, output & waste flows, and carbon emissions & removals per declared unit (KERF frames, Brampton)

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4
LCIA results										
GWPTotal (IPCC 2013)	kg CO2 eq	7.06E+01	1.54E-01	-1.29E+00	8.93E-01	1.43E+01	0	2.27E-01	0	3.77E-02
Ozone depletion	kg CFC-11 eq	7.25E-07	2.18E-09	2.47E-07	1.26E-08	9.75E-08	0	1.28E-09	0	6.83E-11
Acidification	kg SO2 eq	1.12E+00	5.44E-04	9.53E-03	3.16E-03	4.34E-02	0	3.20E-04	0	3.58E-05
Eutrophication	kg N eq	5.32E-01	1.39E-04	2.81E-02	8.08E-04	7.79E-03	0	8.19E-05	0	4.09E-04
Smog	kg O3 eq	4.29E+00	1.48E-02	1.83E-01	8.59E-02	5.52E-01	0	8.71E-03	0	1.08E-03
Respiratory effects	kg PM2.5 eq	1.27E-01	5.28E-05	1.70E-03	3.07E-04	2.63E-02	0	3.11E-05	0	4.91E-06
Additional environmental information										
Carcinogenics	CTUh	97.4%	0.0020%	0.340%	0.0119%	2.30%	0	0.00121%	0	0.00019%
Non carcinogenics	CTUh	97.3%	0.0128%	0.725%	0.074%	1.80%	0	0.00753%	0	0.019%
Ecotoxicity	CTUe	98.9%	0.0049%	0.606%	0.0284%	0.500%	0	0.00289%	0	0.021%
Fossil fuel depletion	MJ surplus	6.08E+01	2.75E-01	2.83E+00	1.60E+00	8.48E+00	0	1.62E-01	0	7.76E-03
Resource use indicators										
Renewable primary energy used as energy carrier (fuel)	MJ, NCV	8.88E+01	4.07E-03	4.22E+01	2.37E-02	2.58E+01	0	6.00E-03	0	8.14E-04

Renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	3.56E+01	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of renewable primary resources with energy content	MJ, NCV	8.88E+01	4.07E-03	7.78E+01	2.37E-02	2.58E+01	0	6.00E-03	0	8.14E-04
Non-renewable primary resources used as an energy carrier (fuel)	MJ, NCV	8.70E+02	2.15E+00	7.50E+01	1.25E+01	1.23E+02	0	3.17E+00	0	1.49E-01
Non-renewable primary resources with energy content used as material	MJ, NCV	0.00E+00	0.00E+00	8.37E-02	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Total use of non-renewable primary resources with energy content	MJ, NCV	8.70E+02	2.15E+00	7.51E+01	1.25E+01	1.23E+02	0	3.17E+00	0	1.49E-01
Secondary materials	kg	4.44E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-renewable secondary fuels	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Recovered energy	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Use of net fresh water resources	m3	3.30E+01	4.75E-03	1.12E+00	2.76E-02	4.87E+00	0	2.80E-03	0	2.18E-04
Abiotic depletion potential, fossil	MJ, NCV	7.50E+02	2.02E+00	2.58E+01	1.17E+01	1.05E+02	0	2.97E+00	0	1.40E-01
Output flows and waste category indicators										
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	3.94E-01	0.00E+00	2.19E+00	0	0.00E+00	0	3.71E+00
High-level radioactive waste, conditioned, to final repository	kg	3.61E-04	2.78E-08	1.40E-04	1.61E-07	5.64E-05	0	4.09E-08	0	3.31E-09
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	6.68E-04	5.84E-08	3.13E-04	3.39E-07	1.02E-04	0	8.59E-08	0	7.63E-09
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	1.06E+00	0.00E+00	6.29E-03	0	0.00E+00	0	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions and removals										
Biogenic carbon removal from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from product	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon removal from packaging	kg CO2	0.00E+00	0.00E+00	-3.58E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from packaging	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E+00	0	0.00E+00	0	0.00E+00
Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Calcination carbon emissions	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbonation carbon removals	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00
Carbon emissions from combustion of waste from renewable and non-renewable sources used in production processes	kg CO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0	0.00E+00



SM Transparency Report (EPD)™

VERIFICATION

LCA

3rd-party reviewed



Transparency Report (EPD)

3rd-party verified



Validity: 07/14/2026 – 07/14/2031
SM-DAY – 20260714 – 002

MATERIAL HEALTH

Material
evaluation

Self-declared



This environmental product declaration (EPD) was externally verified by Beth Cassese, LCACP, CLAR according to ISO 21930:2017; UL Part A; UL Part B for Commercial Steel Doors and Steel Frames; and ISO 14025:2006.

In accordance with ISO 14044 and the reference PCR, this life cycle assessment was conducted by Sustainable Minds and reviewed by Beth Cassese, LCACP, CLAR.

Horizon LCA Services
910-356-5720
admin@horizonlca.com



SUMMARY

Reference PCR

UL Part B: Commercial Steel Doors and Steel Frames

Regions; system boundaries

North America; Cradle-to-gate with options

Declared unit

One commercial three-sided steel frame that can fit a 3-feet x 7-feet door

LCIA methodology

IPCC & TRACI 2.1

LCA software; LCI databases

SimaPro 10.2; ecoinvent v3.12

Public LCA

LCA of Daybar Commercial Steel Doors and Frames

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daybar.com

Contact us

How we make it greener

Frames

Collapse all

RAW MATERIAL EXTRACTION AND TRANSPORTATION

Daybar incorporates recycled content into its steel, sourced from mills that utilize both blast furnace and electric arc furnace technology. Materials are procured from local vendors and transported via truck & trailer / freight, reducing supply chain distances. Many of the materials used are recyclable.



MANUFACTURING

The manufacturing process is designed to minimize waste and recycle materials wherever possible. Water-based paints and low-VOC materials are used throughout production to reduce harmful emissions, while air filtration systems maintain high air quality standards within the facility. Operations are powered by clean energy machinery, ensuring clean air emissions, and products are packaged using minimal, recyclable packaging.



END OF LIFE

At the end of their life cycle, products are designed for non-destructive removal, making the process clean and sustainable. The products are highly recyclable, supporting responsible disposal and material recovery.



SM Transparency Report (EPD)™

VERIFICATION	LCA
3rd-party reviewed	✓
Transparency Report (EPD)	
3rd-party verified	✓
Validity: 07/14/2026 – 07/14/2031 SM-DAY – 20260714 – 002	
MATERIAL HEALTH	Material evaluation
Self-declared	✓

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