DE LA FONTAINE

STEEL DOORS

DE LA FONTAINE

ENVIRONMENTAL PRODUCT DECLARATION

ISO 14025:2006

ASTM INTERNATIONAL

DE LA FONTAINE is pleased to present this environmental product declaration (EPD) for Steel Doors. This EPD was developed in compliance with CAN/CSA-ISO 14025 and has been verified by Lindita Bushi, Athena Sustainable Materials Institute.

The LCA and the EPD were prepared by Vertima Inc. The EPD includes cradle-to-gate life cycle assessment (LCA) results.

For more information about DE LA FONTAINE, visit www.delafontaine.com

For any explanatory material regarding this EPD, please contact the program operator.

1 CONTENT OF THE EPD

PCR GENERAL INFORMATION			
Reference PCR	PCR Part B: Commercial Steel Doors and Steel Frames EPD Requirements UL Environment, v2.0 September 2020 to August 2025		
The PCR review was conducted by:	*Lindita Bushi, Ph.D, LEED Green Associate* *Athena Sustainable Materials Institute* *lindita.bushi@athenasmi.org*	*Tim Weller, AHC/CDC, FDAI* *Allegion* *tim.weller@allegion.com*	*Dan Glover* *ASSA ABLOY Door Group* *dan.glover@assaabloy.com*

EPD GENERAL INFORMATION		
Program Operator	ASTM International 100 Barr Harbor Drive, West Conshohocken, PA 19428 USA www.astm.org	
Declared Products	HC – Honeycomb Steel Core Door PU – Polyurethane Core Steel Door PS – Polystyrene Core Steel Door ST – Steel Stiffened Core Steel Door	
EPD Registration Number EPD-244	**EPD Date of Issue** July 2021	**EPD Period of Validity** July 2021 - July 2026
EPD Recipient Organization	DE LA FONTAINE 3 Normac Road Woburn, MA 01801 USA www.delafontaine.com	
EPD Type/Scope and Declared Unit Product-specific cradle-to-gate EPD with declared unit of one commercial steel door, nominal dimensions of 3 feet x 7 feet considered in isolation.		**Year of Reported Manufacturer Primary Data** September 2019 to August 2020
LCA Software Open LCA v.1.10.3	**LCI Databases** ecoinvent 3.7 and US LCI	**LCIA Methodology** TRACI 2.1, IPCC 2013-100 years

This LCA and EPD were prepared by:	Chantal Lavigne, M.A.Sc. Vertima Inc. www.vertima.ca
This EPD and LCA were independently verified in accordance with CAN/CSA-ISO 14025:2006 and ISO14044:2006, respectively. The UL Environment "Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report," v3.2 (December 2018), in conformity with ISO 21930:2017, serves as the core PCR, with additional considerations from the USGBC/UL Environment Part A Enhancement (2017), and reference PCR. ☐ Internal ☒ External	Lindita Bushi _____ Lindita Bushi, Ph.D. Athena Sustainable Materials Institute

LIMITATIONS

Environmental declarations from different programs (ISO 14025) may not be comparable [1].

Comparison of the environmental performance using EPD information shall consider all relevant information modules over the full life cycle of the products within the building.

The PCR allows EPD comparability only when the same functional requirements between products are ensured and the requirements of ISO 21930:2017 §5.5 are met. It should be noted that different LCA software and background LCI datasets may lead to differences in results upstream or downstream of the life cycle stages declared [2]. Given this EPD is cradle-to-gate in scope[1], comparisons of EPD data from one product to another are not allowed.

[1] Cradle-to-gate EPDs (A1 to A3) are intended for business-to-business (B2B) communications.

2 GENERAL INFORMATION

2.1 DESCRIPTION OF ORGANIZATION

DE LA FONTAINE, registered under DE LA FONTAINE Industries or DE LA FONTAINE Inc., is a North American manufacturer of steel doors and steel door frames for the commercial, institutional and industrial sectors. Its manufacturing facilities are based in Sherbrooke (Quebec), Woburn (Massachusetts), Hyattsville (Maryland) and Grand Prairie (Texas).

2.2 PRODUCT DESCRIPTION

2.2.1 Product Identification

DE LA FONTAINE's commercial steel doors[2] have nominal dimensions of 3 feet x 7 feet and are 1 ¾-inch thick. The doors are made with galvannealed steel and various insulating materials: hexagonal cell Kraft paper core (HC - Honeycomb Steel Core Door); expanded polystyrene core (PS - Polystyrene Core Steel Door); polyisocyanurate core (PU – Polyurethane Core Steel Door); polystyrene, polyurethane or mineral wool (ST – Steel Stiffened Core Steel Door). The steel doors may be primed or powder-coated. End channels, hinge and lock hardware reinforcements are included; however, the hardware itself (e.g., hinges or exit devices) are not included.

DE LA FONTAINE Steel Doors. From left to right: HC - Honeycomb Core Steel Door, PS - Polystyrene Core Steel Door, PU - Polyurethane Core Steel Door and ST - Steel Stiffened Core Steel Door [Photo courtesy of DE LA FONTAINE].

2.2.2 Product Specification

DE LA FONTAINE steel doors are made from materials conforming to, amongst others, the following SDI and ANSI Standards:

- SDI 117.19 Manufacturing Tolerances for Standard Steel Doors and Frames
- A250.3 Test Procedure and Acceptance Criteria for Factory Applied Finish Painted Steel Surfaces for Steel Doors and Frames
- A250.4 Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frame Anchors and Hardware Reinforcing

[2] Steel doors are classified under the United Nations Standard Products and Services Code (UNSPSC) 30171505 and the Construction Specification Institute (CSI) MasterFormat code 08 13 13.

- A250.6 Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames
- A250.8 Recommended Specifications for Standard Steel Doors and Frames
- A250.10 Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames
- A250.13 Testing and Rating of Severe Windstorm Resistant Components for Swinging Door Assemblies
- A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- C1363 Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus
- E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

2.2.3 Flow Diagram

Figure 1 presents the process flow diagram for Steel Doors and Steel Door Frames and Elevations.

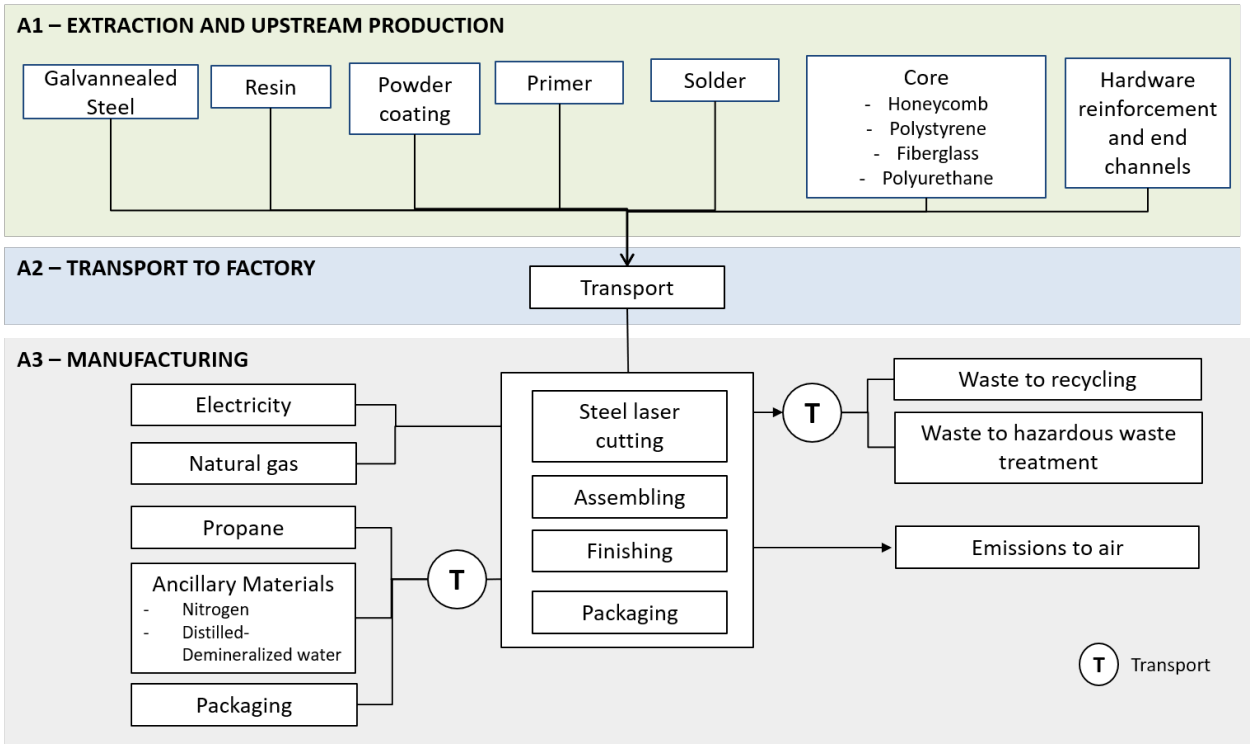


Figure 1: Cradle-to-gate (module A1 to A3) product flow diagram of DE LA FONTAINE's Steel Doors produced in Sherbrooke, Woburn, Hyattsville and Grand Prairie.

2.3 PRODUCT AVERAGE

The production weighted average is calculated based on the mass-weighted average of the production of the four facilities under study for one production year (September 2019 to August 2020).

2.4 APPLICATION

Steel Doors are mainly used in commercial, institutional or industrial building types.

2.5 MATERIAL COMPOSITION

For details on material content, please refer to the Health Product Declarations® (HPD®) available at http://www.hpd-collaborative.org/hpd-public-repository/ .[7]

Material	Steel Doors			
	HC - Honeycomb Core Steel Door	PS - Polystyrene Core Steel Door	ST- Steel Stiffened Core Steel Door	PU - Polyurethane Core Steel Door
Galvannealed Steel	86.6%	88.3%	89.2%	85.2%
Honeycomb	4.30%	0.00%	0.08%	0.34%
Polystyrene	0.00%	3.16%	1.91%	0.00%
Mineral Wool	0.00%	0.00%	1.14%	0.00%
Polyurethane	0.00%	0.00%	0.32%	6.24%
Resin (glue)	1.51%	0.83%	0.72%	0.80%
Primer	1.84%	1.84%	1.82%	1.84%
Powder Paint	0.02%	0.02%	0.02%	0.02%
Solder	0.02%	0.02%	0.02%	0.02%
Hardware Reinforcement and End Channels	5.68%	5.79%	4.79%	5.58%
TOTAL	100.00%	100.00%	100.00%	100.00%

2.6 TECHNICAL REQUIREMENTS

Name	Value
Sound transmission coefficient (ASTM E90-09, Standard Test Method for Laboratory Measurement of Transmission Loss of Building Partitions)	Assemblies (doors with frames) STC32 to STC38 or STC39 to STC48
Thermal transmittance U Value (ASTMC1363-05, Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus)	PS – Polystyrene Core Steel Door: 2.33 W/m^2 °K (0.41 BTU/h °F ft^2) PU – Polyurethane Core Steel Door 2.16 W/m^2 °K (0.38 BTU/h °F ft^2) ST – Steel Stiffened Core Steel Door 3.12 W/m^2 °K (0.55 BTU/h °F ft^2)
Fire rating	HC – Honeycomb, PS – Polystyrene or PU – Polyurethane Core Steel Door: up to 3 hours ST – Steel Stiffened Core Steel Door: up to 1.5 hours
Steel door face skin gauge size	12-gauge to 20-gauge, 18-gauge steel being the most common.

2.7 PROPERTIES OF DECLARED PRODUCT AS DELIVERED

DE LA FONTAINE's commercial galvannealed steel doors delivered to customers have nominal dimensions of 3 feet x 7 feet and are 1¾-inch thick.

3 METHODOLOGICAL FRAMEWORK

3.1 DECLARED UNIT

The selected functional unit (FU) for this study is **one commercial steel door, nominal dimensions of 3 feet x 7 feet considered in isolation**.

Name	Steel Doors				Unit
	HC - Honeycomb Core Steel Door	PS - Polystyrene Core Steel Door	ST- Steel Stiffened Core Steel Door	PU - Polyurethane Core Steel Door	
Declared Unit	One commercial steel door, nominal dimensions of 3 feet x 7 feet considered in isolation				No. Items
Reference	1.95				m^2
	21				ft^2
Mass	41.8	41.0	49.5	42.5	kg
	92.1	90.3	109.2	93.7	lbs
Door Thickness	0.0445				m
	1.75				inch
Density	481.6	472.3	570.9	490.0	kg/m^3
	0.017	0.017	0.021	0.018	$lbs/inch^3$
Door Scaling Factor	21.42	21.00	25.39	21.79	kg/m2
	4.38	4.30	5.20	4.46	lbs/ft2

3.2 SYSTEM BOUNDARIES

The system boundaries are cradle-to-gate, i.e., cover the production life cycle stage as illustrated in Table 1. Within this life cycle stage, three (3) modules are considered, namely A-1) Extraction and upstream production, A-2) Transport to factory and A-3) Manufacturing. Construction (A-4; A-5), Use (B-1 to B 7) and End-of-Life (C-1 to C-4) stages are not included in this EPD.

Table 1: Description of the system boundary modules

PRODUCTION STAGE			CONSTRUC-TION PROCESS STAGE		USE STAGE							END-OF-LIFE STAGE			
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
Extraction and Upstream Production	Transport to Factory	Manufacturing	Transport to site	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction/ Demolition	Transport to Waste Processing or Disposal	Waste Processing	Disposal of waste
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Key: X = included; MND = module not declared (excluded)

Extraction and upstream production: This module includes the extraction and transformation of raw materials included in the steel doors.

Transport to factory: This module includes the transportation of raw materials from DE LA FONTAINE's suppliers to DE LA FONTAINE's facilities.

Manufacturing: This module includes energy for the manufacturing processes and heating of the building. Emissions to air from the application of primer have been considered. There are no water consumption or water emissions. This module also includes process ancillary materials needed to produce the products (e.g., nitrogen and distilled-demineralized water for laser cutting), but excludes products needed for product installation such as hinges, door handles and locks.

Manufacturing losses (e.g., trims) during the production process, as well as product losses, generate waste which is sent to a recycling center. Empty aerosol cans are sent to hazardous waste treatment.

Finally, packaging materials to make the products ready for shipment, as well as their transport to DE LA FONTAINE's manufacturing plants, are covered by this module.

3.3 ALLOCATION

Data relative to energy consumption (electricity, natural gas, and propane), water consumption, emissions flows, process ancillary materials, waste and packaging was provided for the whole manufacturing plant or as a sum of all four manufacturing plants. In this EPD, mass allocation was used.

Waste processing of the material flows undergoing recycling processes are included up to the system boundary of the end-of-waste state [2]. In order words, a cut-off approach was used as further processing of the recycled material is part of raw material preparation of another product system (open-loop recycling).

3.4 CUT-OFF CRITERIA

In this EPD, no primary data (input material, energy consumption) was excluded from the system boundaries.

Also, no data on the construction, maintenance or dismantling of the capital assets, daily employee transport, office work, business trips and other activities by DE LA FONTAINE's employees was included in the model. The model only takes into account the processes associated with infrastructure that are already included in the ecoinvent unit processes.

3.5 DATA SOURCES, DATA QUALITY, ESTIMATES, ASSUMPTIONS AND PERIOD UNDER REVIEW

Data Quality Parameter	Data Quality Discussion
Source of manufacturing data: Description sources of data	Manufacturing data was collected from DE LA FONTAINE's manufacturing plants located in Sherbrooke (Quebec), Woburn (Massachusetts), Hyattsville (Maryland) and Grand Prairie (Texas). This data included: total annual mass of products produced at the manufacturing plants, raw materials entering the production of the products under study, losses of materials, transport distance of materials, energy consumption, ancillary material consumption, emissions to the environment at the manufacturing plants, waste treatment, and packaging.
Source of secondary data: Description of the source of raw material, energy, waste and packaging data	Data used for steel manufacturing, polyurethane, mineral wool, primer and powder paint were taken from published EPDs. For other raw materials and other processes, background data was taken, when available, from ecoinvent 3.7 "cut-off" datasets representative of the production regions [8]. When appropriate, the grid mix was changed for the grid mix of the province or country where production takes place. Otherwise, ecoinvent data representative of the global market or "rest-of-the-world" were selected as proxies. Wood and transport data were taken from the US LCI database [9], which is specific to a North American context.
Geographical representativeness	Manufacturing facilities are based in Quebec, Massachusetts, Maryland, and Texas; hence electricity consumption is based on the Quebec, NPCC, RFC and TRE grid mix. Natural gas consumption is based on the Quebec supply for the Quebec facility and the "Rest of the World" for the facilities in the United States. Geographical correlation of the material supply and the selected datasets are predominantly representative of their production area. When this was not possible, datasets that represent a larger geographical area were used.
Temporal representativeness (Includes period under review)	Primary data was collected so as to be representative of one full year starting in September 2019 and ending in August 2020. Life cycle inventory datasets selected from published EPDs were published within the last ten years, while this was not always the case for ecoinvent and US LCI datasets. Nevertheless, ecoinvent and US LCI remain the reference LCI databases.
Technological representativeness	Primary data, obtained from the manufacturer, is representative of the current technologies and materials used by this company.
Completeness	All relevant process steps were considered and modelled to satisfy the goal and scope. No known flows were cut-off.

3.1 TREATMENT OF BIOGENIC CARBON

The TRACI impact assessment method does not include the biogenic uptake and emissions of CO_2; thus, they are not reported in this EPD [5].

3.2 UNITS

Life cycle assessment results are reported in SI units only [2]. No optional units are included in this EPD.

4 TECHNICAL INFORMATION

4.1 MANUFACTURING

All four DE LA FONTAINE facilities follow the same manufacturing process. First, the steel is cut to size using lasers. The products are then assembled and soldered where needed. Finally, the products are either primed or powder-coated before being packaged for shipment. Products that do not meet the product quality specifications are sent to recycling. Scrap products, steel, honeycomb and polystyrene are 100% recycled.

4.2 PACKAGING

DE LA FONTAINE's Steel Doors are strapped with nylon and polyester straps, shrink wrapped and stacked on wooden pallets. Cardboard slats are used to separate the steel doors and product corners are protected with cardboard corners.

4.3 PRODUCT INSTALLATION

Please refer to specific guidelines for product installation: https://www.delafontaine.com/library-steel-doors-and-frames/.

4.4 USE CONDITIONS

DE LA FONTAINE INC and DE LA FONTAINE INDUSTRIES INC. warrant all material manufactured by them to be free from defects in material and workmanship that could happen under normal conditions of use and maintenance within one year following the date of their delivery. Details on warranties and maintenance can be found online at https://www.delafontaine.com/library-steel-doors-and-frames/.

4.5 RE-USE PHASE

Steel Doors can be re-used if they are not damaged.

4.6 DISPOSAL

Steel Doors are, by weight, mostly made of steel, which can be recycled.

5 ENVIRONMENTAL INDICATORS DERIVED FROM LCA

Results are presented for one (1) commercial steel door, nominal dimensions of 3 feet x 7 feet considered in isolation. It should be noted that LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

"*EPDs can complement but cannot replace tools and certifications that are designed to address environmental impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, etc.*" [2]

"*EPDs regularly rely on estimations of impacts; the level of accuracy in estimation of effect differs for any product line and reported impact when averaging data. Variability was estimated in this EPD by*" sensitivity analysis. [2]

Environmental Indicator		Unit	HC - Honeycomb Core Steel Door (per door)	PS - Polystyrene Core Steel Door (per door)	PU - Polyurethane Core Steel Door (per door)	ST - Steel Stiffened Core Steel Door (per door)
TRACI 2.1						
GWP[(1)(2)]	Global warming potential	kg CO_2 eq.	1.11E+02	1.14E+02	1.11E+02	1.36E+02
ODP[(1)]	Ozone layer depletion potential	kg CFC-11 eq.	1.76E-06	1.66E-06	2.08E-06	1.99E-06
AP[(1)]	Acidification potential	kg SO_2 eq.	7.41E-01	7.53E-01	7.44E-01	8.98E-01
EP[(1)]	Eutrophication potential	kg N eq.	7.13E-02	4.66E-02	5.54E-02	5.34E-02
SFP[(1)]	Smog formation potential	kg O_3 eq.	1.07E+01	1.10E+01	1.03E+01	1.29E+01
ADP-f[(1)]	Abiotic resource depletion potential - fossil fuels	MJ Surplus	5.08E+01	6.44E+01	6.28E+01	7.09E+01

(1): Calculated as per U.S EPA TRACI 2.1[10], OpenLCA v 1.10.3 [11].

(2): TRACI v2.1 indicator updated with IPCC 2014 AR5 [12].

Environmental Indicator		Unit	HC - Honeycomb Core Steel Door (per door)	PS - Polystyrene Core Steel Door (per door)	PU - Polyurethane Core Steel Door (per door)	ST - Steel Stiffened Core Steel Door (per door)
Resource use						
RPR_E[1]	Renewable primary resources used as energy carrier (fuel)	MJ, LHV	1.55E+02	1.40E+02	1.50E+02	1.74E+02
RPR_M[2]	Renewable primary resources with energy content used as material	MJ, LHV	3.04E+01	8.40E-05	3.59E+00	7.39E-01
$NRPR_E$[3]	Non-renewable primary resources used as energy carrier (fuel)	MJ, LHV	1.33E+03	1.38E+03	1.33E+03	1.62E+03
$NRPR_M$[4]	Non-renewable primary resources with energy content used as material	MJ, LHV	1.16E+01	4.63E+01	6.90E+01	6.22E+01
SM[5]	Secondary materials	kg	1.33E+01	1.33E+01	1.39E+01	1.61E+01
RSF	Renewable secondary fuels	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Non-renewable secondary fuels	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW[6]	Use of net fresh water resources	m^3	3.42E+00	3.29E+00	3.34E+00	3.97E+00

(1): $RPR_E = RPR_T - RPR_M$, where RPR_T is equal to the value for renewable energy obtained using the CED LHV methodology.

(2): Calculated as per ACLCA ISO 21930 Guidance [13], 6.2 Renewable primary resources with energy content used as a material, RPRM.

(3): $NPRR_E = NRPR_T - NRPR_M$, where $NRPR_T$ is equal to the value for non-renewable energy obtained using the CED LHV methodology.

(4): Calculated as per ACLCA ISO 21930 Guidance [13], 6.4 Non-renewable primary resources with energy content used as a material, $NRPR_M$.

(5): Calculated as per ACLCA ISO 21930 Guidance [13], 6.5 Secondary materials, SM.

(6): Represents the use of net fresh water, i.e., water consumption.

Environmental Indicator		Unit	HC - Honeycomb Core Steel Door (per door)	PS - Polystyrene Core Steel Door (per door)	PU - Polyurethane Core Steel Door (per door)	ST - Steel Stiffened Core Steel Door (per door)
Output flows and waste categories						
HWD[(1)]	Hazardous waste disposed	kg	4.45E-01	4.47E-01	4.38E-01	5.37E-01
NHWD[(2)]	Non-hazardous waste disposed	kg	9.47E+00	4.80E+00	4.04E+00	4.31E+00
HLRW[(3)]	High-level radioactive waste, conditioned, to final repository	m^3	5.29E-05	5.29E-05	5.29E-05	6.39E-05
ILLRW[(4)]	Intermediate- and low-level radioactive waste, conditioned to final repository	m^3	4.60E-08	1.50E-08	1.66E-08	1.70E-08
CRU	Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR[(5)]	Materials for recycling	kg	5.33E+00	5.17E+00	5.18E+00	6.27E+00
MER	Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	Exported energy	MJ, LHV	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(1): Calculated from life cycle inventory results, based on datasets marked as "hazardous" and EPD values.

(2): Calculated from life cycle inventory results, based on waste that is neither "hazardous" nor "radioactive" and EPD values.

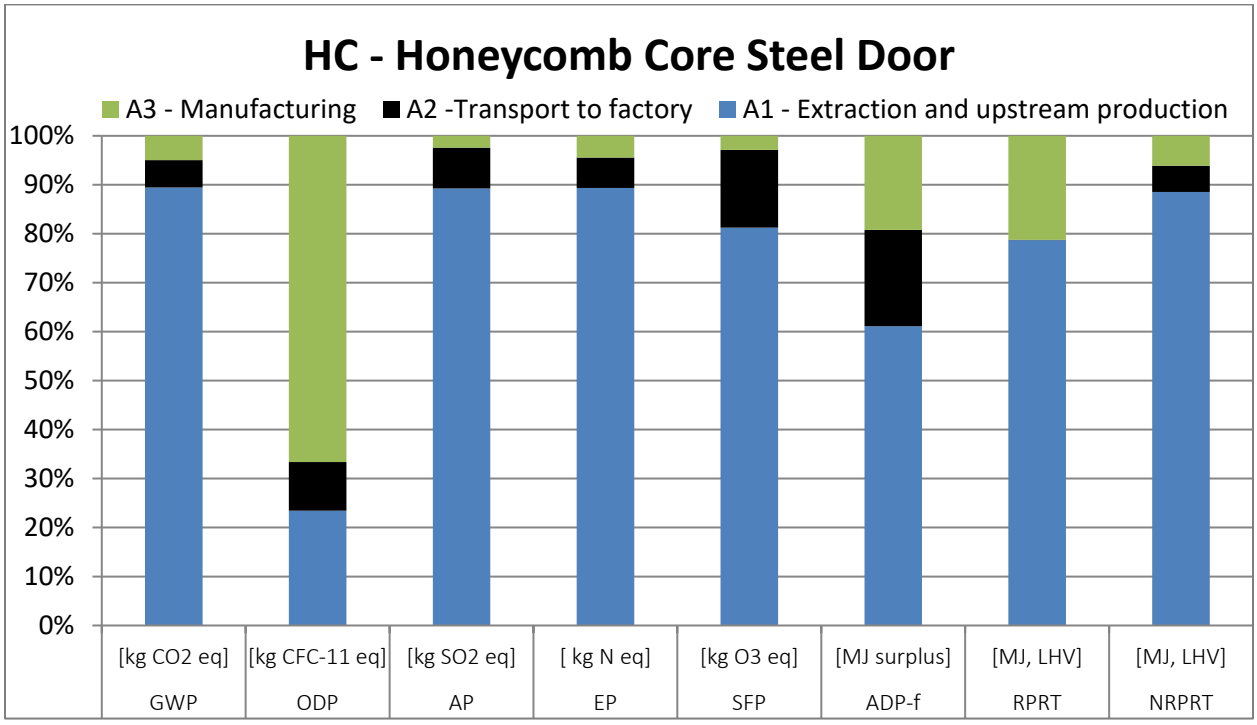
(3): Calculated, as per ACLCA ISO 21930 Guidance section 10.3 High-level radioactive waste, conditioned, to final repository [13], from life cycle inventory results, based on datasets "treatment of high-level radioactive waste, conditioned, to final repository" and EPD values" (ISO 21930:2017, clause 7.2.14 [6]).

(4): Calculated, as per ACLCA ISO 21930 Guidance [3] section 10.4 Intermediate- and low-level radioactive waste, conditioned, to final repository from life cycle inventory results, based on dataset "treatment of low level radioactive waste for final repository" (ISO 21930:2017, clause 7.2.14 [6]).

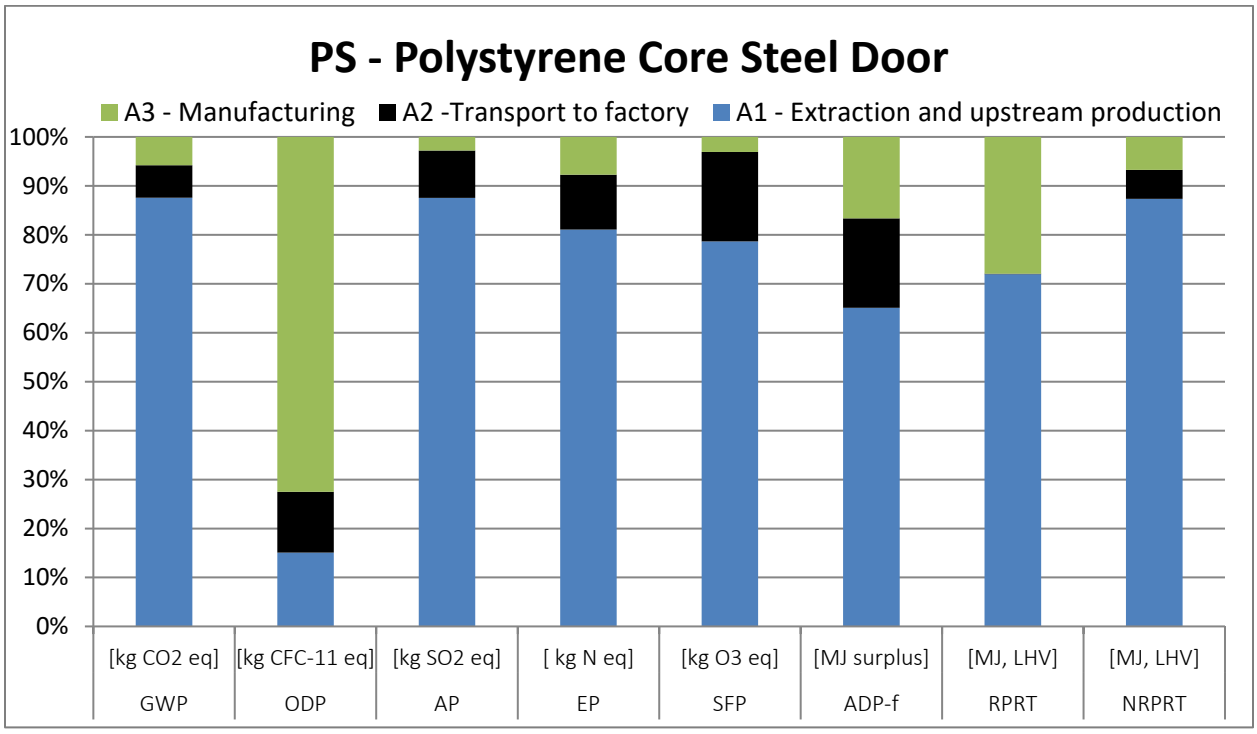
(5): Calculated based on the amounts leaving the system boundary when they have reached the end-of-waste state.

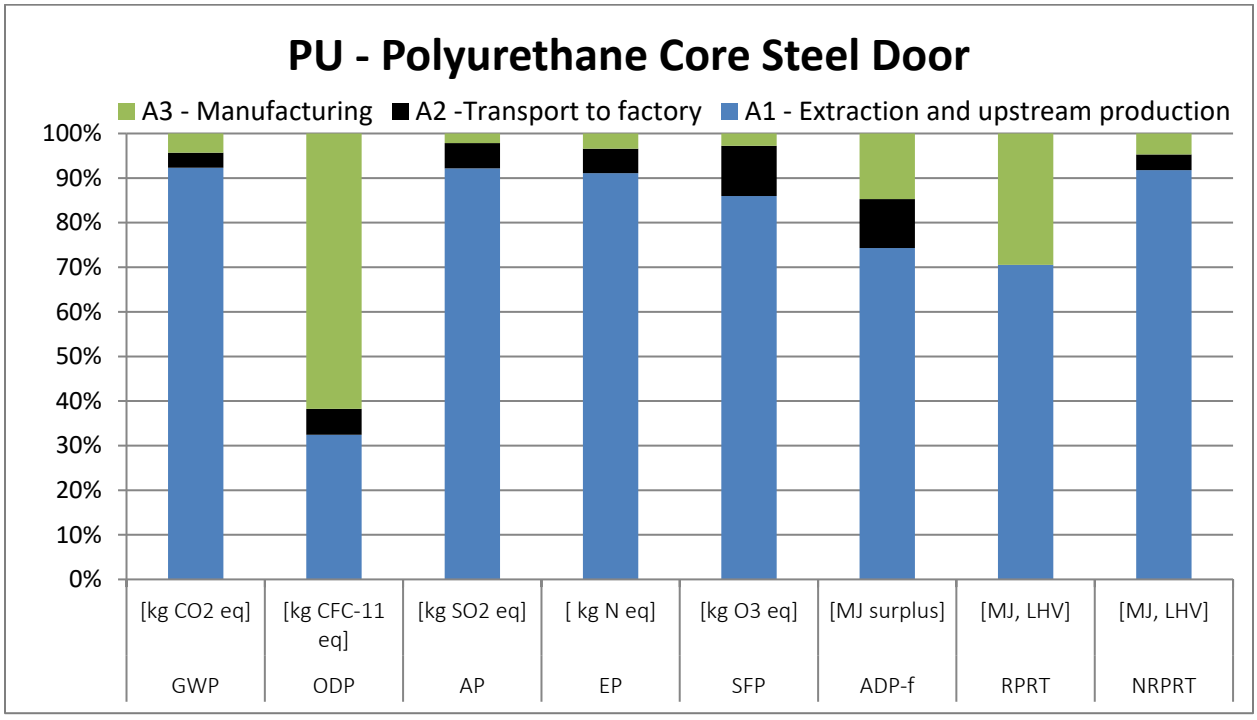
6 INTERPRETATION

For all steel doors, the life cycle module *extraction and upstream production* is the largest contributor to 5 environmental impact indicators out of 6, and to total use of renewable and non-renewable primary energy resources (RPRT, NRPRT). *Manufacturing* is the main contributor to ozone layer depletion potential (ODP).

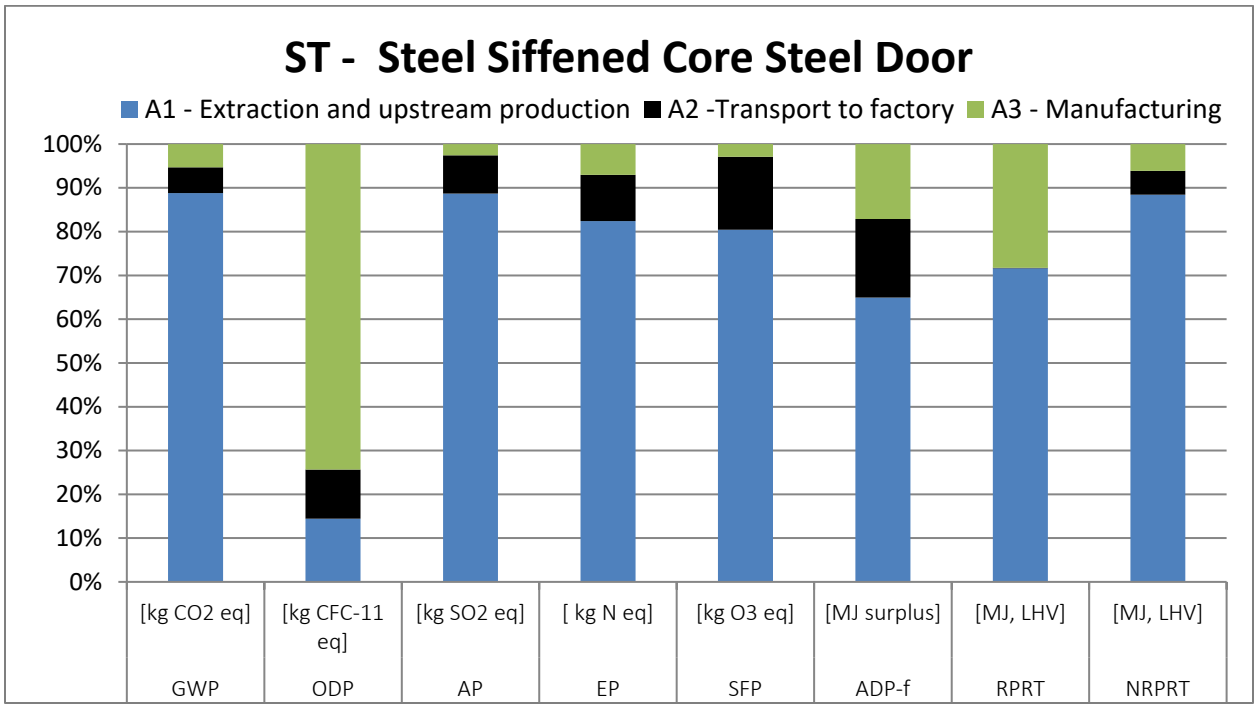


GWP: 100-year global warming potential; **ODP**: Ozone layer depletion potential; **AP**: Acidification potential; **EP**: Eutrophication potential; **SFP**: Smog formation potential; **ADP-f**: Abiotic resource depletion potential – fossil fuel; **RPRT**: Total renewable primary resources; **NRPRT**: Total non-renewable primary resources.





GWP: 100-year global warming potential; **ODP**: Ozone layer depletion potential; **AP**: Acidification potential; **EP**: Eutrophication potential; **SFP**: Smog formation potential; **ADP-f**: Abiotic resource depletion potential – fossil fuel; **RPRT**: Total renewable primary resources; **NRPRT**: Total non-renewable primary resources.



GWP: 100-year global warming potential; **ODP**: Ozone layer depletion potential; **AP**: Acidification potential; **EP**: Eutrophication potential; **SFP**: Smog formation potential; **ADP-f**: Abiotic resource depletion potential – fossil fuel; **RPRT**: Total renewable primary resources; **NRPRT**: Total non-renewable primary resources.

7 ADDITIONAL ENVIRONMENTAL INFORMATION

7.1 REPORTING OF REGULATED HAZARDOUS SUBSTANCES

No substances required to be reported as hazardous are associated with the production of this product.

7.2 RELEASE OF DANGEROUS SUBSTANCES

No dangerous substances are known to be associated with the production of these products.

7.3 VALIDATED ECO-DECLARATION® AND HEALTH PRODUCT DECLARATION®

In addition, DE LA FONTAINE is part of a third-party verification process with Vertima Inc. where DE LA FONTAINES's products and its entire supply chain are assessed. At the end of the process, they have received a Validated Eco-Declaration® summarizing verified environmental claims.

DE LA FONTAINE has also published a Health Product Declaration® for HC – Honeycomb Core Steel Door, PS – Polystyrene Core Steel Door, PU – Polyurethane Core Steel Door and ST – Steel Stiffened Core Steel Door. More details are available on the HPDC public repository: https://www.hpd-collaborative.org/hpd-public-repository/.

8 REFERENCES

[1] International Organization for Standardization (ISO), "ISO 14025 Environmental labels and declarations - Type III environmental declarations - Principles and procedures," 2006.

[2] UL Environment, "PCR Part B: Commercial Doors and Steel Frames EPD Requirements," 2020 [Online]. Available: https://www.ul.com/services/product-category-rules-pcrs#uledev.

[3] International Organization for Standardization (ISO), "ISO 14044:2006/AMD1:2017/AMD 2:2020 Environmental management - Life cycle assessment - Requirements and guidelines," 2006.

[4] Vertima, "Life Cycle Assessment of DE LA FONTAINE's Steel Doors and Steel Door Frames," 2021.

[5] UL environment, "Product Caterogy Rules for Building-Related Products and Services - Part A: Life Cycle Assessment Calculation Rules and Report Requirements Version 3.2," 2018 [Online]. Available: https://www.ul.com/offerings/product-category-rules-pcrs#uledev.

[6] International Organization for Standardization (ISO), "ISO 21930:2017(E) Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services," 2017.

[7] HPDC, "HPD Public Repository," 2020 [Online]. Available: https://www.hpd-collaborative.org/hpd-public-repository/.

[8] F. R. *et al.*, "Overview and Methodology. ecoinvent report No. 1," Dübendorf, 2007.

[9] National Renewable Energy Laboratory, "U.S. Life Cycle Inventory Database," 2012 [Online]. Available: https://www.lcacommons.gov/nrel/search. [Accessed: 03-Feb-2020].

[10] J. C. Bare, "Traci - The Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts," *J. Ind. Ecol.*, vol. 6, no. 3–4, pp. 49–78, 2002.

[11] GreenDelta, "About openLCA," 2020 [Online]. Available: http://www.openlca.org/the-idea/.

[12] IPCC, "Climate Change 2013: The Physical Science Basis. Contribution of Working Groups I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change," Geneva, Switzerland, 2013 [Online]. Available: https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf.

[13] PCR Committee of the American Center for Life Cycle Assessment (ACLCA), "ACLCA Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017" [Online]. Available: https://aclca.org/aclca-iso-21930-guidance/.

[14] ASTM International, "ASTM Program Operator Rules. Version: 8.0, Revised 04/29/20," 2020 [Online]. Available: www.astm.org.

DE LA FONTAINE

3 Normac Road

Woburn, MA 01801

USA

www.delafontaine.com

EPD

This LCA and EPD were prepared by Vertima Inc.

604 Saint Viateur Street,
Quebec, QC
(418) 990-2800
G2L 2K8 CANADA

Vertima | ENVIRONMENTAL CERTIFICATIONS EXPERTS

vertima.ca