ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

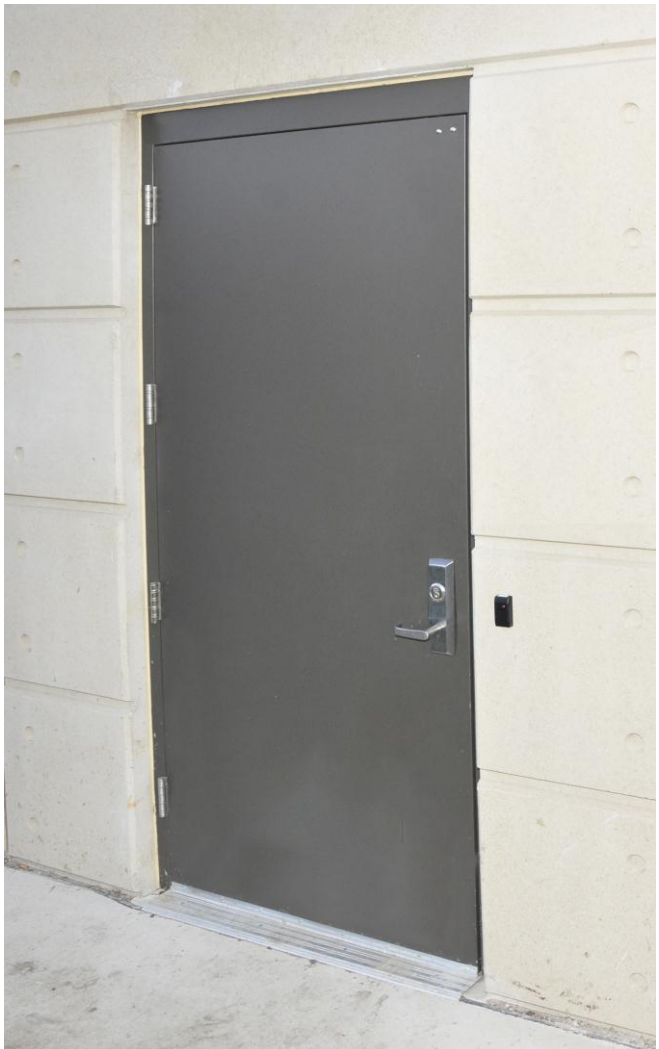
Owner of the Declaration	**ASSA ABLOY Door Group, LLC / Fleming**
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASA-20150077-IBA1-EN
Issue date	10.04.2015
Valid to	09.04.2020

Doors – H-Series steel stiffened door

ASSA ABLOY Door Group, LLC / Fleming

Institut Bauen und Umwelt e.V.

www.bau-umwelt.com / https://epd-online.com



1. General Information

ASSA ABLOY Door Group, LLC/ Fleming	H-Series Steel Stiffened Door
Programme holder IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany	**Owner of the Declaration** ASSA ABLOY Door Group Fleming Door Products 101 Ashbridge Circle Woodbridge, Ontario L4L 3R5 Canada
Declaration number EPD-ASA-20150077-IBA1-EN	**Declared product / Declared unit** This declaration represents 1 Steel Stiffened H-Series Door.
This Declaration is based on the Product Category Rules: Windows and doors, 11.2014 (PCR tested and approved by the independent expert committee (SVR))	**Scope:** This declaration and its LCA study are relevant to Steel Stiffened 1 3/4" (4.445 cm) hollow metal doors manufactured from an option of 16 to 12 gauge cold rolled steel face sheets at a single manufacturing ASSA ABLOY Door Group site - Fleming Door Products, Woodbridge, Ontario, Canada. All Steel Stiffened H-Series Door component assembly and manufacturing processes are performed at our manufacturing factory - Fleming Door Products, Woodbridge, Ontario, Canada. The Steel Stiffened H-Series Doors are marketed under the following ASSA ABLOY Door Group brands: Fleming Door Products, Woodbridge, Ontario, Canada.
Issue date 10.04.2015	
Valid to 09.04.2020	**Verification** The CEN Standard EN 15804 serves as the core PCR Independent verification of the declaration and data according to ISO 14025 ☐ internally ☒ externally
Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)	
Dr.-Ing. Burkhart Lehmannt (Managing Director IBU)	Dr. Wolfram Trinius (Independent verifier appointed by SVR)

2. Product

2.1 Product description

Product name: Steel Stiffened H-Series Door

Product characteristics: Steel Stiffened H-Series Door is intended for exterior commercial applications where security and lasting performance are required. It is designed to withstand the wear and tear of high abuse and high frequency openings as well as commercial security applications.

2.2 Application

The Steel Stiffened H-Series Door can be used indoors or outdoors. Common applications are: Interior or Exterior door openings, Banks, Police Stations, Motels/Hotels, Office Buildings, Urban Renewal, Health Care, Institutional, Data Processing, Mercantile, Food Processing, School/Training Centers, Public Utility Stations, Warehouses/Factories, Manufacturing Plants, Transportation Terminals, Vehicle Service Facilities, and Government Buildings.

2.3 Technical Data

Steel Stiffened H-Series Doors are available in any size for non rated applications. Fire-rated with cULus and cWHIus labeling for traditional and positive pressure and smoke and draft control up to 3 hours with 4'x10' singles/8'x10' pairs and to 5'x12' singles/10'x12' pairs for 1-1/2 hours. 2007 Florida Building Code compliant, UL Listed, FBC Approved, including the HVHZ (Miami-Dade and Broward Counties) for 4'x8' singles and 8'x8' pairs up to +/- 70 psf Design Load and Large Missile Impact rated. H-Series Doors exceed the ANSI A250.4 performance and acceptance criteria achieving 4 million cycles, 4 times the Level A requirements.

2.4 Placing on the market / Application rules

Steel Stiffened H-Series Doors conform to the Steel Door Institute guide specification, ANSI/SDI A250.8, ANSI/HMMA 861 and CSDMA 08 11 13 - Welded Stiffener Construction requirements.

2.5 Delivery status

Finished Steel Stiffened H-Series Doors are individually packed, stacked horizontally on wooden

pallet and banded to pallet for shipment. A minimum of 1 and a maximum of 20 doors per pallet is considered.

Package Sizes: Package dimensions are proportionate to the door size: e.g. 3'0" x 7'0" door pallet will be 3'0" x 7'0" x 44" (20 doors + 4" high pallet) 4'0" x 8'0" maximum width, 20 doors/pallet = 44" height.

2.6 Base materials / Ancillary materials

The composition of the steel door is as following:

Component	Percentage in mass (%)
Steel	95.12
Plastics	1.40
Fiberglass	3.48
Total	100.0

2.7 Manufacture

Door production process utilizes cutting, forming, stamping, CNC, welding, and grinding. Door skins & components are fabricated from 12, 14, or 16 ga A40 paintable galvanneal steel. Top & Bottom door skins are mechanically interlocked and vertical edge seams are continuously welded. Hardware Reinforcements for most lock preps, including concealed hardware, 7 gauge steel hinge reinforcements. Hinge preparations are handed. Hinge edges are mortised for 4-1/2" or 5" high, standard and heavy weight hinges Core: H-Series Doors are constructed using vertical interlocking 20 ga steel stiffeners located at 6" centers across the door, welded to each face sheet at 6" on center, with the voids between stiffeners filled with batt insulation. Paint: Primer applied to door edges only where welding has occurred.

All Steel Stiffened H-Series Door component assembly and manufacturing processes are performed at our manufacturing factory - Fleming Door Products, Woodbridge, Ontario, Canada.

2.8 Environment and health during manufacturing

ASSA ABLOY Door Group and Fleming Door Products are committed to protecting human health and the environment; meeting or exceeding local laws, regulations, codes, and guidelines; and employing sustainable pollution prevention practices. Painting and welding areas of the manufacturing plant have extraction ventilation system to remove dust, VOC and air borne materials. Sound abatement is implemented where possible and Personal Protective Equipment is provided. Waste water is pre-treated prior to dispensing into city water system.

• Environmental operations, GHG, energy, water, waste, VOC, surface treatment and H&S are being routinely monitored. Inspections, audits, and reviews are conducted periodically to ensure that applicable standards are met and Environmental Management program effectiveness is evaluated.
• Code of Conduct covers human rights, labor practices and decent work. Management of ASSA ABLOY is aware of their roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance.

2.9 Product processing/Installation

Doors are typically installed into commercial applications per local, state and federal building codes, standards and requirements. Personal Protective Equipment should be provided at construction site.

2.10 Packaging

Steel Stiffened H-Series Doors are individually wrapped in protective cardboard and banded with polyethylene to retain door protective packaging. The corrugated packaging is 100% recycled, Packaging material and polyethylene banding should be removed from packaging and collected separately for recycling.

Material	Value (%)
Paper	0.03
Plastics	0.01
Wood	99.96
Total	100.0

2.11 Condition of use

Doors are not finished and should receive a finish paint topcoat per S.D.I. / NAAMM / HMMA standards for performance. Gasketing and thresholds are used to control the flow of air, smoke, heat or cold, water, and sound through the door opening. The location or intended use of the door assembly, the environment to which it is exposed, and the performance expected will dictate the selection of gasketing and threshold products and the amount of maintenance required. Typical maintenance is to service the painted surface by re-coating the doors as necessary (location and environment will vary the time). This is usually after about 5 years in the field (but can be longer depending on exposure and environment). Repairs or replacement are not usually necessary. No cleaning efforts need to be taken into consideration.

2.12 Environment and health during use

There is no harmful emissive potential. No damage to health or impairment is expected under normal use corresponding to the intended use of the product.

2.13 Reference service life

Properly installed and maintained steel hollow metal doors have a service life of 30 years. Steel Door Institute test standard (ANSI/SDI A250.4- 2001) Level A requires 1,000,000 cycles - Steel Stiffened H-Series Doors have cycle tested (open/closed) 4,000,000 cycles with no issues. The location and intended use of the steel door assembly, the environment to which it is exposed, and the cycling of the door assembly will determine the steel door assembly life expectancy.

2.14 Extraordinary effects

Fire

Fire Protection

Fire Door Labeling Agency: UL and Warnock Hersey
Test: UL10C, UL10B NFPA 252
Rating: UL 20 min. to 3 Hours Max size: 4'0" x 10'0" single, Max size 8'0" x 10'0" Pair

WH 20 min. to 1 1/2 hour Max size: 5'0" x 12'0" single, Max size 10'0" x 12'0" Pair

Water
No substances are used which have a negative impact on ecological water quality on contact by the door with water. Steel doors subjected to unforeseeable flooding conditions will increase the potential for developing surface rust. The door is designed for traditional locations and is not intended for flood protection.

Mechanical destruction
No danger to the environment can be anticipated during mechanical destruction.

2.15 Re-use phase
The product is possible to reuse during the reference service life and be moved from one similar door opening to another. The majority, by weight, of door components is steel which can be recycled. In collaboration with the Steel Recycling Institute, customers can utilize a locator tool, allowing them to find a recycling center near them. The locator tool is hosted on the Steel Recycling Institute's website (www.recycle-steel.org); it simply asks the user for location information, and provides the nearest recycling location. The tool is free to use and allows the consumer to travel just a short distance and properly recycle and/or dispose their materials. This free program provides recycling and/or disposal of door and frame products that have reached the end of their life cycle and are beyond the product's warranty period.

2.16 Disposal
Product parts made of fiberglass (2.10% of product weight including packaging) were disposed. The locator tool hosted on the Steel Recycling Institute's website (www.recycle-steel.org) allows the consumer to travel just a short distance and properly dispose their materials.

2.17 Further information
For additional information on our products, please visit our web sites:
ASSA ABLOY Door Security Solutions
www.assaabloydss.com, or Fleming Door Products www.flemingdoor.com

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of H-Series steel stiffened door as specified in Part B requirements on the EPD for Windows and doors/IBU PCR Part B/.

Declared unit

Name	Value	Unit
Declared unit	1	piece of H-Series steel door
Conversion factor to 1 kg	0.012	
Area	1.95	sqm/pc
Ratio to reference door	0.728	Measuring 1.23 m x 2.18 m = 2.68 sqm/pc (reference door based on EN14351-1)

3.2 System boundary

Type of the EPD: cradle to gate - with options.
The following life cycle phases were considered for H-Series steel door:

A1-A3 Production stage:

- A1 – Raw material extraction and processing
- A2 – Transport to the manufacturer and
- A3 – Manufacturing.

A4-A5 Construction stage:

- A4 - Transport from the gate to the site
- A5 – Packaging waste processing

End-of-life stage:

- C2 – Transport to waste processing,
- C3 – Waste processing
- C4 – Disposal (landfill)

These information modules include provision and transport of all materials, products, as well as energy and water provisions, waste processing up to the end-of-waste state or disposal of final residues.

Module D:

- Declaration of all benefits or recycling potential from EoL and A5

3.3 Estimates and assumptions

Transport:
For materials and pre-products the actual means of transport and distances, provided by the suppliers, were considered.

EoL:
In the End-of-Life phase, for all the materials which can be recycled, a recycling scenario with 100% collection rate was assumed.

3.4 Cut-off criteria

In the assessment, all available data from the production process are considered, i.e. all raw materials used, auxiliary materials (e.g. lubricants), thermal energy consumption and electric power consumption - including material and energy flows contributing less than 1% of mass or energy (if available). In case a specific flow contributing less than 1% in mass or energy is not available, worst case assumption proxies are selected to represent the respective environmental impacts.

Impacts relating to the production of machines and facilities required during production are out of the scope of this assessment.

3.5 Background data

For life cycle modeling of the considered products, the GaBi 6 Software System for Life Cycle Engineering, developed by PE INTERNATIONAL AG, is used /GaBi 6 2013/. The GaBi-database contains consistent and documented datasets which are documented in the online
GaBi-documentation /GaBi 6 2013D/.
To ensure comparability of results in the LCA, the basic data of GaBi database were used for energy, transportation, and auxiliary materials.

3.6 Data quality

The requirements for data quality and background data correspond to the specifications of the /IBU PCR PART A/.
PE INTERNATIONAL performed a variety of tests and validations during the commission of the present study in order to ensure its quality of the present document and results. This obviously includes an extensive review of project-specific LCA models as well as the background data used.
The technological background of the collected data reflects the physical reality of the declared products. The datasets are complete and conform to the system boundaries and the criteria for the exclusion of inputs and outputs.
All relevant background datasets are taken from the GaBi 6 software database. The last revision of the used background data has taken place not longer than 10 years ago.

3.7 Period under review

The period under review is 2013/14 (12 month average).

3.8 Allocation

Regarding incineration, the software model for the waste incineration plant (WIP) is adapted according to the material composition and heating value of the combusted material. In this EPD the following specific life cycle inventories for the WIP are considered:
• Waste incineration of plastic
• Waste incineration of paper
• Waste incineration of wood

Regarding the recycling material of metals, the metal parts in the EoL are declared as end-of-waste status. Thus, these materials are considered in module D. Specific information on allocation within the background data is given in the GaBi dataset documentation.

3.9 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to EN 15804 and the building context, respectively the product-specific characteristics of performance, are taken into account.

4. LCA: Scenarios and additional technical information

In the EPD scenarios and/or technical information for Modules A5, C1-C4 and D are given.

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site (Plastics packaging)	0.02	kg
Output substances following waste treatment on site (Paper packaging)	0.01	kg
Output substances following waste treatment on site (Wood packaging)	53.01	kg

Reference service life

Name	Value	Unit
Reference service life	30	a

End of life (C1-C4)

Name	Value	Unit
Collected separately Steel	76.94	kg
Collected separately Plastics	1.14	kg
Collected as mixed construction waste (Fiberglass)	2.81	kg
Recycling Steel	76.94	kg
Thermal Treatment Plastics	1.14	kg
Landfilling	2.81	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	Value	Unit
Collected separately waste type Steel door (including packaging)	133.93	kg
Recycling steel recycling	57.45	%
Thermal Treatment Plastics	0.85	%
Landfill Construction waste for landfilling (no recycling potential)	2.10	%
Reuse Packaging (paper, plastic, wood) (from A5)	39.60	%

5. LCA: Results

Results shown below were calculated using CML Methodology.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement[1)]	Refurbishment[1)]	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling- potential
A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 piece of H-Series Steel Stiffened Door

Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
Global warming potential	[kg CO_2-Eq.]	1.23E+02	3.18E+00	8.54E+01	3.18E+00	0.00E+00	4.53E+00	-1.61E+02
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	7.23E-09	1.52E-11	3.47E-10	1.52E-11	0.00E+00	2.15E-11	-9.07E-09
Acidification potential of land and water	[kg SO_2-Eq.]	7.44E-01	1.46E-02	9.05E-03	1.46E-02	0.00E+00	1.72E-03	-5.60E-01
Eutrophication potential	[kg $(PO_4)^{3-}$- Eq.]	6.72E-02	3.33E-03	1.60E-03	3.33E-03	0.00E+00	2.75E-04	-4.56E-02
Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	1.25E-01	-4.70E-03	5.32E-04	-4.70E-03	0.00E+00	1.01E-04	-7.86E-02
Abiotic depletion potential for non fossil resources	[kg Sb Eq.]	6.20E-03	1.20E-07	1.13E-06	1.20E-07	0.00E+00	1.74E-07	-5.24E-06
Abiotic depletion potential for fossil resources	[MJ]	2.28E+03	4.39E+01	1.17E+01	4.39E+01	0.00E+00	1.77E+00	-1.69E+03

RESULTS OF THE LCA - RESOURCE USE: 1 piece of H-Series Steel Stiffened Door

Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
Renewable primary energy as energy carrier	[MJ]	1.07E+03	-	-	-	-	-	-
Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
Total use of renewable primary energy resources	[MJ]	1.07E+03	1.73E+00	2.02E+00	1.73E+00	0.00E+00	1.44E-01	-2.42E+01
Non renewable primary energy as energy carrier	[MJ]	2.39E+03	-	-	-	-	-	-
Non renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
Total use of non renewable primary energy resources	[MJ]	2.39E+03	4.41E+01	1.57E+01	4.41E+01	0.00E+00	2.03E+00	-1.71E+03
Use of secondary material	[kg]	8.29E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	[m^3]	9.64E-01	1.22E-03	2.22E-01	1.22E-03	0.00E+00	1.29E-02	-1.82E-01

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 piece of H-Series Steel Stiffened Door

Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
Hazardous waste disposed	[kg]	4.04E-02	1.00E-04	2.11E-03	1.00E-04	0.00E+00	1.38E-04	4.92E-02
Non hazardous waste disposed	[kg]	5.27E+00	5.54E-03	1.21E+00	5.54E-03	0.00E+00	2.08E-01	-1.89E+00
Radioactive waste disposed	[kg]	4.26E-02	5.77E-05	1.58E-03	5.77E-05	0.00E+00	1.01E-04	-7.97E-03
Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
Materials for recycling	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E+02	0.00E+00	-
Materials for energy recovery	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
Exported electrical energy	[MJ]	0.00E+00	0.00E+00	1.00E+02	0.00E+00	0.00E+00	5.17E+00	-
Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.82E+02	0.00E+00	0.00E+00	1.47E+01	-

6. LCA: Interpretation

This chapter contains an interpretation of the Life Cycle Impact Assessment categories. Stated percentages in the whole interpretation are related to the overall life cycle, excluding credits (module D).

Production phase (module A1-A3) contributes between 89 and 100% to total impact assessment for all considered impact categories with exception for Global Warming Potential – GWP (56%). This stage is dominated by upstream emissions associated with steel manufacturing processes. Steel accounts with app. 57% to the overall mass of the product, therefore, the impacts are in line with the mass composition of the product. The environmental impacts for the transport (A2) have a negligible impact within this stage.

In the end-of-life phase, there are loads and benefits (module D, negative values) considered. The benefits are considered beyond the system boundaries and are declared for the recycling potential of the metals and for the credits from the incineration process (energy substitution).

7. Requisite evidence

Not applicable in this EPD.

8. References

Institut Bauen und Umwelt
Institut Bauen und Umwelt e.V., Berlin (pub.): Generation of Environmental Product Declarations (EPDs);

General principles
for the EPD range of Institut Bauen und Umwelt e.V. (IBU), 2013-04
www.bau-umwelt.de

IBU PCR Part A
IBU PCR Part A: Institut Bauen und Umwelt e.V., Königswinter (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report. April 2013
www.bau-umwelt.de

IBU PCR Part B
IBU PCR Part B: PCR Guidance-Texts for Building-Related Products and Services. From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU). Part B: Requirements on the EPD for Windows and doors.
www.bau-umwelt.com

ANSI / HMMA 861
ANSI / HMMA 861: Guide Specifications for Commercial Hollow Metal Doors and Frames (American National Standard/Hollow Metal Manufacturers Association)

ANSI / SDI A250.4-2011
ANSI / SDI A250.4-2011: Physical Endurance for Steel Doors, Frames & Frame Anchors Physical endurance testing

CSDMA 08 11 13
CSDMA 08 11 13: Recommended Specifications for Commercial Steel Doors and Frames (Canadian Steel Door Manufacturer's Association)

DIN EN ISO 14025
DIN EN ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

EN 15804
EN 15804:2012+A1:2014: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

GaBi 6 2013
GaBi 6 2013: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Echterdingen, 1992-2013.

GaBi 6 2013D
GaBi 6 2013D: Documentation of GaBi 6: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Echterdingen, 1992-2013.
http://documentation.gabi-software.com/

HVHZ
HVHZ: High Velocity Hurricane Zone, Florida Building Code

UL 10b
UL 10b: Fire Tests of Door Assemblies

UL 10C
UL 10c: Positive Pressure Fire Tests of Door Assemblies

9. Annex

Results shown below were calculated using TRACI Methodology.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement[1)]	Refurbishment[1)]	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling- potential
A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 piece of H-Series Steel Stiffened Door

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	1.23E+02	3.18E+00	8.54E+01	3.18E+00	0.00E+00	4.53E+00	-1.61E+02
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	7.69E-09	1.62E-11	3.69E-10	1.62E-11	0.00E+00	2.29E-11	-9.65E-09
AP	Acidification potential of land and water	[kg SO_2-Eq.]	7.55E-01	1.90E-02	1.08E-02	1.90E-02	0.00E+00	2.09E-03	-5.65E-01
EP	Eutrophication potential	[kg N-eq.]	3.87E-02	1.34E-03	5.88E-04	1.34E-03	0.00E+00	1.07E-04	-2.69E-02
Smog	Ground-level smog formation potential	[kg O_3-eq.]	1.12E+01	3.92E-01	2.18E-01	3.92E-01	0.00E+00	4.74E-02	-8.14E+00
Resources	Resources	[MJ]	8.75E+01	6.32E+00	2.31E+00	6.32E+00	0.00E+00	1.99E-01	-5.08E+01

RESULTS OF THE LCA - RESOURCE USE: 1 piece of H-Series Steel Stiffened Door

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	1.07E+03	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	1.07E+03	1.73E+00	2.02E+00	1.73E+00	0.00E+00	1.44E-01	-2.42E+01
PENRE	Non renewable primary energy as energy carrier	[MJ]	2.39E+03	-	-	-	-	-	-
PENRM	Non renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-
PENRT	Total use of non renewable primary energy resources	[MJ]	2.39E+03	4.41E+01	1.57E+01	4.41E+01	0.00E+00	2.03E+00	-1.71E+03
SM	Use of secondary material	[kg]	8.29E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of non renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of net fresh water	[m^3]	9.64E-01	1.22E-03	2.22E-01	1.22E-03	0.00E+00	1.29E-02	-1.82E-01

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 piece of H-Series Steel Stiffened Door

Parameter	Parameter	Unit	A1-3	A4	A5	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	4.04E-02	1.00E-04	2.11E-03	1.00E-04	0.00E+00	1.38E-04	4.92E-02
NHWD	Non hazardous waste disposed	[kg]	5.27E+00	5.54E-03	1.21E+00	5.54E-03	0.00E+00	2.08E-01	-1.89E+00
RWD	Radioactive waste disposed	[kg]	4.26E-02	5.77E-05	1.58E-03	5.77E-05	0.00E+00	1.01E-04	-7.97E-03
CRU	Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
MFR	Materials for recycling	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E+02	0.00E+00	-
MER	Materials for energy recovery	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
EEE	Exported electrical energy	[MJ]	0.00E+00	0.00E+00	1.00E+02	0.00E+00	0.00E+00	5.17E+00	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.82E+02	0.00E+00	0.00E+00	1.47E+01	-

Publisher
Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Tel +49 (0)30 3087748- 0
Fax +49 (0)30 3087748- 29
Mail info@bau-umwelt.com
Web **www.bau-umwelt.com**

Programme holder
Institut Bauen und Umwelt e.V.
Panoramastr 1
10178 Berlin
Germany

Tel +49 (0)30 - 3087748- 0
Fax +49 (0)30 – 3087748 - 29
Mail info@bau-umwelt.com
Web **www.bau-umwelt.com**

Author of the Life Cycle Assessment
PE INTERNATIONAL AG
Hauptstraße 111
70771 Leinfelden-Echterdingen
Germany

Tel +49 711 34 18 17 22
Fax +49 711 34 18 17 25
Mail consulting@pe-international.com
Web **www.pe-international.com**

Owner of the Declaration
ASSA ABLOY Door Group
Fleming Door Products
101 Ashbridge Circle
Woodbridge,
Ontario L4L3R5
Canada

Tel +1-731-686-4308
Fax +1-731-686-4285
Mail dglover@aadoorgroup.com
Web **www.flemingdoor.com**