

**STANLEY**  
Access Technologies



**Declaration Owner**

**Allegion Access Technologies LLC**

65 Scott Swamp Rd. Farmington, CT 06032  
www.stanleyaccess.com | 860.677.2861

**Product**

Magic Force Automatic Swing Operators  
(UNSPSC 30171510 – Automatic doors)

**Functional Unit**

1 square meter of door opening maintained and operated for 10 years.

**Scope**

The scope of this EPD is Cradle-to-Gate with scenarios

**EPD Number and Period of Validity**

SCS-EPD-09233  
EPD Valid July 18, 2023 through July 17, 2028

**Product Category Rule**

Product Category Rule for Preparing an Environmental Product Declaration for Power-Operated Pedestrian and Revolving Doors. UNPCPC 4212. ASTM International. PCRExt 2022-114, valid through August 31, 2023

**Program Operator**

SCS Global Services  
2000 Powell Street, Ste. 600, Emeryville, CA 94608  
+1.510.452.8000 | www.SCSglobalServices.com



Declaration Owner:	STANLEY Access Technologies
Address:	65 Scott Swamp Rd. Farmington, CT 06032
Products:	Magic Force Automatic Swing Operators
Declaration Number:	SCS-EPD-09233
Declaration Validity Period:	EPD Valid July 18, 2023 through July 17, 2028
Program Operator:	SCS Global Services
Declaration URL Link:	<a href="https://www.scsglobalservices.com/certified-green-products-guide">https://www.scsglobalservices.com/certified-green-products-guide</a>
LCA Practitioner:	Gerard Mansell, Ph.D., SCS Global Services
LCA Software and LCI database:	OpenLCA v1.11 software and the Ecoinvent v3.9 database
Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071	<input type="checkbox"/> internal <input checked="" type="checkbox"/> external
LCA Reviewer:	 Lindita Bushi, Ph.D., Athena Sustainable Materials Institute
Product Category Rule:	Product Category Rule for Preparing an Environmental Product Declaration for Power-Operated Pedestrian and Revolving Doors. UNCPC 4212. ASTM International. PCRExt 2022-114, valid through August 31, 2023
PCR Review conducted by:	
Independent verification of the declaration and data, according to ISO 14025, ISO 21930 and the PCR	<input type="checkbox"/> internal <input checked="" type="checkbox"/> external
EPD Verifier:	 Lindita Bushi, Ph.D., Athena Sustainable Materials Institute
Declaration Contents:	ABOUT STANLEY® Access Technologies.....2 PRODUCT DESCRIPTION.....2 PRODUCT SPECIFICATION.....2 MATERIAL RESOURCES.....3 ADDITIONAL ENVIRONMENTAL INFORMATION.....3 PROCESS FLOW DIAGRAM.....4 LIFE CYCLE ASSESSMENT OVERVIEW.....5 LIFE CYCLE IMPACT ASSESSMENT.....7 ADDITIONAL ENVIRONMENTAL PARAMETERS.....8 SUPPORTING TECHNICAL INFORMATION.....9 REFERENCES.....11
<p><b>Disclaimers:</b> This Environmental Product Declaration (EPD) conforms to ISO 14025, 14040, 14044, and ISO 21930:2017.</p> <p><b>Scope of Results Reported:</b> The PCR requirements limit the scope of the LCA metrics such that the results exclude environmental and social performance benchmarks and thresholds, and exclude impacts from the depletion of natural resources, land use ecological impacts, ocean impacts related to greenhouse gas emissions, risks from hazardous wastes and impacts linked to hazardous chemical emissions.</p> <p><b>Accuracy of Results:</b> Due to PCR constraints, this EPD provides estimations of potential impacts that are inherently limited in terms of accuracy.</p> <p><b>Comparability:</b> The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.</p>	

## ABOUT STANLEY® Access Technologies

STANLEY® Access Technologies is committed to being an industry leader in door automation through exceptional service, high quality product innovation, and lowest total cost of ownership. For over 80 years, we have been designing, building, installing and servicing manual and automatic sliding, swinging, revolving and folding doors as well as sensors and controls.

Everywhere you go, you can find our trusted products throughout a wide variety of commercial, institutional, industrial and transportation applications.

Headquartered in Farmington, CT, STANLEY® Access Technologies is the largest manufacturer, installer and service provider of automatic doors in North America.

## PRODUCT DESCRIPTION

The STANLEY Access *Magic Force Automatic Swing Operators* are manufactured in an ISO 9001 certified facilities in Farmington, Connecticut.

The STANLEY *Magic Force* is a versatile electromechanical swing door operator that can be used in overhead concealed or surface mounted applications. The microprocessor control provides power to the operator and controls all the inputs from activation and safety sensors as well as door position and door functions. The closing speed is controlled by employing the motor as a dynamic break. The closing spring is preloaded for positive closing action so the door will close with or without power. The Magic-Force is UL listed as a fire door operator, has a push to operate feature and can be used for Low Energy or High Energy pedestrian applications. The Magic Force operator is assembled at the Stanley Access Technologies manufacturing facility in Farmington, CT and comes with application specific door arm for push or pull, microprocessor controller and aluminum header of appropriate length.

## PRODUCT SPECIFICATION

**Table 1.** Product specifications for the STANLEY Magic Force Automatic Swing Operators.

Parameter	Value
Header Size	6.0" (152 mm) High x 5.5" (140 mm) Deep
Swing Door Panels	Up to 48" (1,220 mm)
Door Panel Weight	350 lbs+ (160 kg)
Drive System	3/16 HP DC Motor, Gear Drive
Controller	Microprocessor-based with Built-in "Reverse-on-Obstruction" Magic-Touch Activation
Sensor Options	Swing-Guard; Swing Guard LE; SU-100
Activation Sensor Options	Mats, Motion Detectors, Radio Controls or Touch-less wave sensors
Breakout	Automatic Reset (center hung)
Power Required	120 VAC, 5 amps min., 50/60 HZ
Codes and Standards	UL, cUL, ANSI/BHMA A156.10, ANSI/BHMA A156.19, IBC, NFPA 101. CSFM

## MATERIAL RESOURCES

The material composition and availability of raw material resources for the Magic Force Automatic Swing Operators are shown in Table 2. Information on product packaging is shown in Table 3.

**Table 2.** Material composition of the STANLEY Access Magic Force Automatic Swing Operators.

Component	Material	Availability				Magic Force	
		Renewable	Non-Renewable	Recycled (% pre-/post-consumer)	Origin of Materials	(kg/m <sup>2</sup> )	(%)
Recycled Aluminum	Aluminum		Mineral, Abundant	30%/40%	North America	0.85	8.2%
Aluminum	Aluminum		Mineral, Abundant	0%	Global	4.6	44%
Steel	Steel		Mineral, Abundant	0%	Global	3.9	37%
Plastic	Plastic		Fossil, Limited	0%	Global	9.8x10 <sup>-2</sup>	0.94%
Electronic Components	Steel, Plastic,		Mineral, Abundant	0%	Global	0.99	9.6%
<b>Total</b>						<b>10</b>	<b>100%</b>

**Table 3.** Material composition of packaging for the STANLEY Access Magic Force Automatic Swing Operators.

Component	Material	Availability				Magic Force	
		Renewable	Non-Renewable	Recycled (% pre-/post-consumer)	Origin of Materials	(kg/m <sup>2</sup> )	(%)
Paper	Paper	Abundant		0%	Global	0.11	17%
Cardboard	Corrugated	Abundant		0%	Global	0.53	83%
Plastic	Plastic		Fossil, Limited	0%	Global	-	-
<b>Total</b>						<b>0.62</b>	<b>100%</b>

In conformance with the PCR, product materials were reviewed for the presence of any toxic or hazardous chemicals with respect to US regulations<sup>1</sup>. Based on a review of the product components provided by the manufacturer, no regulated chemicals were identified in the product or product components.

<sup>1</sup> Resource Conservation and Recovery Act (RCRA), Subtitle 3. <https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-overview>

## ADDITIONAL ENVIRONMENTAL INFORMATION

STANLEY® Access Technologies is the only automatic door manufacturer with two US manufacturing facilities; Indianapolis, IN and Farmington, CT.

Stanley's Refurbish Equipment Program means no dumpsters required and no landfills used; oil and grease is recycled.

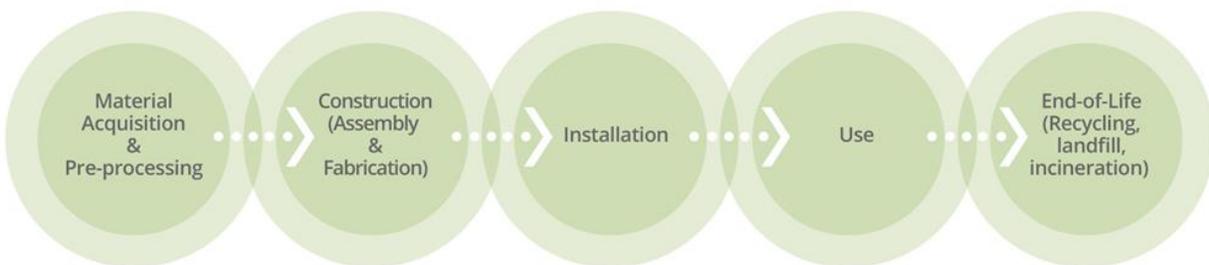
Our Plant Recycling Program recycles oil and grease, cardboard, white paper and scrap aluminum and steel.

In 2017, STANLEY® Access Technologies' Farmington factory installed a combustion-free Bloom Energy Server for clean energy. This server will deliver enhanced sustainability benefits including high efficiency greenhouse gas emissions, avoid air pollutants and significantly reduce water use.

Our aluminum vendors are ISO 14001 and ISO 50001 certified to control their energy usage and environmental impacts.

## PROCESS FLOW DIAGRAM

The diagram below is a representation of the most significant contributions to the life cycle of the STANLEY Access Magic Force Automatic Swing Operators. The following life cycle stages are included: production (Modules A1-A3); construction & installation (Module A4-A5); product use (Modules B1-B7); and end-of-life (Modules C1-C4).



## LIFE CYCLE ASSESSMENT OVERVIEW

The system boundary is cradle-to-gate with scenarios and includes resource extraction and processing, product manufacture and assembly, distribution/transport, use and operational, and end-of-life. The diagram below illustrates the life cycle stages included in this EPD.

Product			Construction Process		Use							End-of-life				Benefits and loads beyond the system boundary
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw material extraction and processing	Transport to manufacturer	Manufacturing	Transport	Construction - installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, recovery and/or recycling potential
X	X	X	X	X	X	MND	MND	MND	MND	X	X	X	X	X	X	MND

X = Included | MND = Module Not Declared

The following provides a brief overview of the Modules included in the product system for the STANLEY Access Technologies Magic Force Automatic Swing Operators.

### Module A1: Raw material extraction and processing

This module includes the potential environmental impacts associated with the extraction and processing of raw materials for various component parts in the door products. The primary components are fabricated of aluminum and steel. The impacts from fabrication processes were based on representative datasets for metal product manufacturing.

### Module A2: Transportation

This module includes transportation of processed raw materials and product components to the STANLEY manufacturing facilities in Connecticut and Indiana.

### Module A3: Manufacture of the Door Products

This stage includes all the relevant manufacturing processes and flows, including the impacts from energy use and emissions at the facility. Production of capital goods, infrastructure, manufacturing equipment, and personnel-related activities are not included. This stage also includes the disposal (including transport) of manufacturing wastes (scrap losses)

### Module A4: Transportation & Delivery to the Installation Site

This module includes the impacts associated with delivery of door product to the installation site. Transport by diesel truck an estimated distance of 3,250 km is assumed.

### Module A5: Construction & Installation

This module includes installation of the products. This module includes delivery of the door products to the point of installation (downstream transportation), and installation of the products. This stage also includes the disposal (including

transport) of the product packaging materials. The doors are fabricated for specific door openings and applications with no installation waste.

**Module B1: Normal use of the product**

This module accounts for environmental impacts arising through normal anticipated use of the product. No impacts are associated with the use of the products and the results for this phase are reported as zero.

**Module B2: Maintenance**

Module not declared.

**Module B3: Repair**

Module not declared.

**Module B4: Replacement**

Module not declared.

**Module B5: Refurbishment**

Module not declared.

**Module B6: Operational Energy Use**

This module includes the primary energy consumption (electricity) associated with the operational use of these products. Operational energy use is estimated by the manufacturer as 37 kWh/yr based on the power rating of the product and assumed frequency of use.

**Module B7: Operational Water Use**

No water use occurs during the operation of the product and impacts are zero.

**Module C1-C4: End-of-Life**

The end-of-life stage of the product starts when it is replaced, dismantled or deconstructed from the building. There are no impacts associated with the deconstruction and dismantling processes as these are manual processes completed with hand tools and does not require any energy input for removal of the product. The impacts associated with transportation of waste materials to processing facilities, waste processing of material components and waste disposal of the product are included in these modules.

## LIFE CYCLE IMPACT ASSESSMENT

Impact category indicators are calculated using the TRACI 2.1 and CML-IA characterization methods. TRACI 2.1 impact category indicators include global warming potential (100 years), acidification potential, smog potential, ozone depletion potential, and eutrophication potential. CML-IA impact category indicators include global warming potential (100 years), acidification potential, eutrophication potential, Photochemical Ozone Creation potential, ozone depletion potential, and abiotic resource depletion, in accordance with the PCR. The LCIA results are calculated using openLCA 1.11 software. The results for these indicators are shown in Table 4.

**Table 4.** Life Cycle Impact Assessment results for the STANLEY Access Magic Force Automatic Swing Operators per functional unit. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.

Impact Category	Unit	Raw Materials	Transport	Manufacturing	Construction	Use	Disposal
<b>TRACI</b>							
Global warming	kg CO <sub>2</sub> eq	114	2.60	8.04	6.96	87.4	1.04
	%	52%	1.2%	3.7%	3.2%	40%	0.47%
Acidification	kg N eq	0.662	1.46x10 <sup>-2</sup>	1.76x10 <sup>-2</sup>	2.72x10 <sup>-2</sup>	0.487	2.72x10 <sup>-3</sup>
	%	55%	1.2%	1.5%	2.2%	40%	0.22%
Eutrophication	kg N eq	0.732	2.52x10 <sup>-3</sup>	1.79x10 <sup>-2</sup>	7.35x10 <sup>-3</sup>	0.247	6.14x10 <sup>-3</sup>
	%	72%	0.25%	1.8%	0.73%	24%	0.61%
Smog formation	kg O <sub>3</sub> eq	7.73	0.335	0.252	0.687	4.66	7.83x10 <sup>-2</sup>
	%	56%	2.4%	1.8%	5.0%	34%	0.57%
Ozone depletion	kg CFC-11 eq	4.48x10 <sup>-6</sup>	4.56x10 <sup>-8</sup>	1.73x10 <sup>-7</sup>	1.20x10 <sup>-7</sup>	2.03x10 <sup>-6</sup>	9.30x10 <sup>-9</sup>
	%	65%	0.67%	2.5%	1.7%	30%	0.14%
Fossil fuel depletion	MJ surplus	91.6	5.20	15.5	13.7	135	1.05
	%	35%	2.0%	5.9%	5.2%	51%	0.40%
<b>CML</b>							
Global warming	kg CO <sub>2</sub> eq	115	2.62	8.23	7.06	88.1	1.15
	%	52%	1.2%	3.7%	3.2%	40%	0.52%
Acidification	kg SO <sub>2</sub> eq	0.653	1.27x10 <sup>-2</sup>	1.69x10 <sup>-2</sup>	2.28x10 <sup>-2</sup>	0.505	2.15x10 <sup>-3</sup>
	%	54%	1.0%	1.4%	1.9%	42%	0.18%
Eutrophication	kg (PO <sub>4</sub> ) <sup>3-</sup> eq	0.344	2.55x10 <sup>-3</sup>	8.42x10 <sup>-3</sup>	6.09x10 <sup>-3</sup>	0.126	2.67x10 <sup>-3</sup>
	%	70%	0.52%	1.7%	1.2%	26%	0.55%
Photochemical oxidation	kg C <sub>2</sub> H <sub>4</sub> eq	3.94x10 <sup>-2</sup>	5.14x10 <sup>-4</sup>	1.08x10 <sup>-3</sup>	1.14x10 <sup>-3</sup>	2.10x10 <sup>-2</sup>	2.06x10 <sup>-4</sup>
	%	62%	0.81%	1.7%	1.8%	33%	0.32%
Ozone layer depletion	kg CFC-11 eq	3.96x10 <sup>-6</sup>	3.46x10 <sup>-8</sup>	1.29x10 <sup>-7</sup>	9.10x10 <sup>-8</sup>	1.40x10 <sup>-6</sup>	7.06x10 <sup>-9</sup>
	%	70%	0.62%	2.3%	1.6%	25%	0.13%
Abiotic depletion, fossil fuels	MJ	1,180	36.5	106	96.3	1,150	7.05
	%	46%	1.4%	4.1%	3.7%	45%	0.27%

## ADDITIONAL ENVIRONMENTAL PARAMETERS

ISO 21930 requires that several parameters be reported in the EPD, including resource use, waste categories and output flows, and other environmental information. The results for these parameters are shown in Table 5. As the products do not contain significant amounts of bio-based materials, biogenic carbon emissions and removals are not declared.

**Table 5.** Resource use and waste flows for the automatic doors per functional unit. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.

Parameter	Unit	Raw Materials	Transport	Manufacturing	Construction	Use	Disposal
<b>Energy Resource Use</b>							
Use of renewable primary energy excluding resources used as raw materials	MJ	223	0.457	22.6	1.24	162	4.81x10 <sup>-2</sup>
	%	54%	0.11%	5.5%	0.30%	40%	0.01%
Use of renewable primary energy resources used as raw materials	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of non renewable primary energy excluding resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA
	MJ	INA	INA	INA	INA	INA	INA
Use of secondary materials	kg	3.24	0.00	0.00	0.00	0.00	0.00
	%	100%	0.00%	0.00%	0.00%	0.00%	0.00%
Use of secondary fuels	MJ	N/A	N/A	N/A	N/A	N/A	N/A
Recovered energy	MJ	N/A	N/A	N/A	N/A	N/A	N/A
Use of net fresh water	m <sup>3</sup>	6.07	2.73x10 <sup>-2</sup>	0.345	7.45x10 <sup>-2</sup>	8.57	3.83x10 <sup>-3</sup>
	%	40%	0.18%	2.3%	0.49%	57%	0.03%
<b>Wastes</b>							
Hazardous waste disposed	kg	7.20x10 <sup>-3</sup>	2.35x10 <sup>-4</sup>	4.61x10 <sup>-4</sup>	6.31x10 <sup>-4</sup>	3.98x10 <sup>-3</sup>	4.69x10 <sup>-5</sup>
	%	57%	1.9%	3.7%	5.0%	32%	0.37%
Non-hazardous waste disposed	kg	20.5	1.68	1.29	4.85	11.4	4.54
	%	46%	3.8%	2.9%	11%	26%	10%
High-level radioactive wastes disposed	kg	5.54x10 <sup>-4</sup>	2.14x10 <sup>-6</sup>	6.56x10 <sup>-5</sup>	5.83x10 <sup>-6</sup>	1.37x10 <sup>-3</sup>	2.50x10 <sup>-7</sup>
	%	28%	0.11%	3.3%	0.29%	69%	0.01%
Low-level radioactive wastes disposed	kg	1.34x10 <sup>-3</sup>	5.10x10 <sup>-6</sup>	3.29x10 <sup>-4</sup>	1.39x10 <sup>-5</sup>	6.98x10 <sup>-3</sup>	6.11x10 <sup>-7</sup>
	%	15%	0.06%	3.8%	0.16%	81%	0.01%
Components for Re-use	kg	0.00	0.00	0.00	0.00	0.00	0.00
Materials for Recycling	kg	0.00	0.00	0.00	0.478	0.00	4.84
	%	0.00%	0.00%	0.00%	9.0%	0.00%	91%
Materials for energy recovery	kg	N/A	N/A	N/A	N/A	N/A	N/A
Exported energy	MJ	N/A	N/A	N/A	N/A	N/A	N/A

INA = Indicator not assessed. No classification scheme is available in OpenLCA to estimate these indicators.

## SUPPORTING TECHNICAL INFORMATION

### Data Sources

Component	Material Dataset	Processing Dataset	Data Source	Publication Date
<b>PRODUCT COMPONENT</b>				
Recycled Aluminum	market for aluminium, primary, ingot   aluminium, primary, ingot   Cutoff, S/IAI Area, NA	metal working, average for aluminium product manufacturing   metal working, average for aluminium product manufacturing   Cutoff, S/RoW	El v3.9	2022
	market for aluminium scrap, new   aluminium scrap, new   Cutoff, S/RoW		El v3.9	2022
	market for aluminium scrap, post-consumer   aluminium scrap, post-consumer   Cutoff, S/GLO		El v3.9	2022
Aluminum	market for aluminium, primary, ingot   aluminium, primary, ingot   Cutoff, S/IAI Area, North America	metal working, average for aluminium product manufacturing   metal working, average for aluminium product manufacturing   Cutoff, S/RoW	El v3.9	2022
Steel	steel production, converter, low-alloyed   steel, low-alloyed   Cutoff, S/RoW	metal working, average for steel product manufacturing   metal working, average for steel product manufacturing   Cutoff, S/RoW	El v3.9	2022
Plastic	polyethylene production, high density, granulate   polyethylene, high density, granulate   Cutoff, S/RoW	injection moulding   injection moulding   Cutoff, S/RoW	El v3.9	2022
	polyvinylchloride production, bulk polymerisation   polyvinylchloride, bulk polymerised   Cutoff, S/RER		El v3.9	2022
	acrylonitrile-butadiene-styrene copolymer production   acrylonitrile-butadiene-styrene copolymer   Cutoff, S/RER		El v3.9	2022
	Polyoxymethylene (POM) PlasticsEurope/EU-27		El v3.9	2022
	polyurethane production, rigid foam   polyurethane, rigid foam   Cutoff, S/RoW		El v3.9	2022
	polyvinylchloride production, bulk polymerisation   polyvinylchloride, bulk polymerised   Cutoff, S/RoW		El v3.9	2022
	synthetic rubber production   synthetic rubber   Cutoff, S/RoW		El v3.9	2022
nylon 6-6 production   nylon 6-6   Cutoff, S/RoW	El v3.9	2022		
Electronics/Motor Assembly	Electronics, for control units {GLO}  market for   Alloc Rec (46% steel (housing), 32% plastics, 14% printed wiring boards and 8% cables)	Included with material dataset	El v3.9	2022
<b>PACKAGING</b>				
Cardboard	containerboard production, linerboard, kraftliner   containerboard, linerboard   Cutoff, S/RoW	Included with material dataset	El v3.9	2022
Plastic Wrap	packaging film production, low density polyethylene   packaging film, low density polyethylene   Cutoff, S/RoW	Included with material dataset	El v3.9	2022
Paper	kraft paper production   kraft paper   Cutoff, S/RoW	Included with material dataset	El v3.9	2022
<b>TRANSPORTATION</b>				
Road transport	Diesel Truck	transport, freight, lorry 16-32 metric ton, EURO4   transport, freight, lorry 16-32 metric ton, EURO4   Cutoff, S/RoW	El v3.9	2022
Ship transport	Transoceanic Ship	transport, freight, sea, container ship   transport, freight, sea, container ship   Cutoff, S/GLO	El v3.9	2022
<b>RESOURCES</b>				
Electricity	RFCW eGRID sub-region electricity grid	Electricity, medium voltage, at grid/RFCW	El v3.9;eGRID	2022; 2020
Electricity	NEWE eGRID sub-region electricity grid	Electricity, medium voltage, at grid/NEWE	El v3.9;eGRID	2022; 2020
Electricity	US average electricity grid	Electricity, medium voltage, {US}   market for   Alloc	El v3.9	2022
Natural gas combustion	Natural gas	heat production, natural gas, at boiler modulating >100kW   heat, district or industrial, natural gas   Cutoff, S/RoW	El v3.9	2022

## Data Quality

Data Quality Parameter	Data Quality Discussion
<b>Time-Related Coverage</b> Age of data and the minimum length of time over which data should be collected	The most recent available data are used, based on other considerations such as data quality and similarity to the actual operations. Typically, these data are less than 10 years old. All of the data used represented an average of at least one year's worth of data collection, and up to three years in some cases. Manufacturer-supplied data (primary data) are based on annual production for 2021.
<b>Geographical Coverage</b> Geographical area from which data for unit processes should be collected to satisfy the goal of the study	The data used in the analysis provide the best possible representation available with current data. Electricity use for product manufacture is modeled using representative data for the appropriate eGRID electricity grid mixes. Surrogate data used in the assessment are representative of North American or global operations. Data representative of global operations are considered sufficiently similar to actual processes. Data representing product disposal are based on US statistics.
<b>Technology Coverage</b> Specific technology or technology mix	For the most part, data are representative of the actual technologies used for processing, transportation, and manufacturing operations. Representative datasets are used to represent the actual processes, as appropriate.
<b>Precision</b> Measure of the variability of the data values for each data expressed (e.g. variance)	Precision of results are not quantified due to a lack of data. Data collected for operations were typically averaged for one or more years and over multiple operations, which is expected to reduce the variability of results.
<b>Completeness</b> Percentage of flow that is measured or estimated	The LCA model included all known mass and energy flows for production of the door products. In some instances, surrogate data used to represent upstream and downstream operations may be missing some data which is propagated in the model. No known processes or activities contributing to more than 1% of the total environmental impact for each indicator are excluded. In total, these missing data represent less than 5% of the mass or energy flows.
<b>Representativeness</b> Qualitative assessment of the degree to which the data set reflects the true population of interest (i.e. geographical coverage, time period, and technology coverage)	Data used in the assessment represent typical or average processes as currently reported from multiple data sources and are therefore generally representative of the range of actual processes and technologies for production of these materials. Considerable deviation may exist among actual processes on a site-specific basis; however, such a determination would require detailed data collection throughout the supply chain back to resource extraction.
<b>Consistency</b> Qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis	The consistency of the assessment is considered to be high. Data sources of similar quality and age are used; with a bias towards Ecoinvent v3.9 data where available. Different portions of the product life cycle are equally considered; however, it must be noted that final disposition of the product is based on assumptions of current average practices in the United States.
<b>Reproducibility</b> Qualitative assessment of the extent to which information about the methodology and data values would allow an independent practitioner to reproduce the results reported in the study	Based on the description of data and assumptions used, this assessment would be reproducible by other practitioners. All assumptions, models, and data sources are documented.
<b>Sources of the Data</b> Description of all primary and secondary data sources	Data representing energy use at the STANLEY manufacturing facilities represent an annual average and are considered of high quality due to the length of time over which these data are collected, as compared to a snapshot that may not accurately reflect fluctuations in production. For secondary LCI datasets, Ecoinvent v3.9 LCI data are used.

## Allocation

Annual energy resource use and emissions at the STANLEY manufacturing facilities were reported separately for electricity and fuel consumption (natural gas) and allocated to the product based on the cost of production of the product as a fraction of the total facility production costs (i.e., economic allocation).

The product system includes some recycled materials, which were allocated using the recycled content allocation method (also known as the 100-0 cut off method). Using the recycled content allocation approach, system inputs with recycled content do not receive any burden from the previous life cycle other than reprocessing of the waste material. At end of life, materials which are recycled leave the system boundaries with no additional burden.

Impacts from transportation were allocated based on the mass of material and distance transported.

## Cut-off criteria

According to the PCR, cumulative omitted mass or energy flows within the product boundary shall not exceed 1%. In the present study, except as noted, all known materials and processes were included in the life cycle inventory.

## REFERENCES

1. Product Category Rule for Preparing an Environmental Product Declaration for Power-Operated Pedestrian and Revolving Doors. UNCPC 4212. ASTM International. September 2016.
2. CML-IA Characterization Factors. Institute of Environmental Sciences. Leiden University. Netherlands.
3. Ecoinvent Centre (2022) Ecoinvent data from v3.9. Swiss Center for Life Cycle Inventories, Dubendorf, 2022, <http://www.ecoinvent.org>
4. ISO 14040:2006/AMD 1:2020 Environmental Management – Life cycle assessment – Principles and framework.
5. ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures.
6. ISO 14044:2006/AMD 1:2017/ AMD 2:2020 Environmental Management – Life cycle assessment – Requirements and Guidelines.
7. SCS Type III Environmental Declaration Program: Program Operator Manual. V11.0 November 2021. SCS Global Services.
8. Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI). Dr. Bare, J., <https://www.epa.gov/chemical-research/tool-reduction-and-assessment-chemicals-and-other-environmental-impacts-traci>
9. SCS Global Services. Life Cycle Assessment of Power-Operated Doors. July 2023. Draft Report. Prepared for STANLEY Access Technologies.
10. US EPA. Advancing Sustainable Materials Management:2018 Fact Sheet Assessing Trends in Materials Generation and Management in the United States. November 2020. [https://www.epa.gov/sites/production/files/2020-11/documents/2018\\_ff\\_fact\\_sheet.pdf](https://www.epa.gov/sites/production/files/2020-11/documents/2018_ff_fact_sheet.pdf).
11. US EPA. WARM Model Transportation Research - Draft. Memorandum from ICF Consulting to United States Environmental Protection Agency. September 7, 2004. <http://epa.gov/epawaste/conserva/tools/warm/SWMGHGreport.html#background>
12. ANSI/BHMA A156.10-2017 Power Operated Pedestrian Doors
13. ANSI/BHMA A156.19- Power Assist & Low Energy Power Operated Doors
14. ACLCA 2019, Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017. The American Centre for Life Cycle Assessment. May 2019

For more information contact:

**STANLEY**<sup>®</sup>  
Access Technologies

**Allegion Access Technologies LLC**  
65 Scott Swamp Rd. Farmington, CT 06032  
[www.stanleyaccess.com](http://www.stanleyaccess.com) | 860.677.2861



**SCS Global Services**  
2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA  
Main +1.50.452.8000 | fax +1.510.452.8001