ALLEGION
PIONEERING SAFETY™

Glynn Johnson Overhead Door Holder – 100 Series

ALLEGION – LCA Optimization Plan

Product Category Rules
Product Category Rule (PCR) for preparing an Environmental Product Declaration (EPD) for Product Group, Builders Hardware UL9004. Version: April 3rd, 2014.

Declared Unit
One overhead door holder for a standard door leaf

Date of Issue: September 15, 2020

Date of Expiry: September 14, 2023

Manufacturer Name and Address	Allegion Plc 2720 Tobey Dr Indianapolis, IN 46219
Declared Product	Glynn-Johnson Overhead Door Stop Holder – 100 Series
Product Type	Door Hardware
Product Description	Door control device
Action Plan Number	AGIN01
Declared Unit as Defined by PCR	One overhead door holder for a standard door leaf
LCA/EPD Action Plan is Based On	EPD – Glynn-Johnson Overhead Door Stops https://spot.ul.com/main-app/products/detail/5d5d78aa55b0e89e705e026a?page_type=Products%20Catalog EPD Number: 4787103471.120.1
LCA/EPD Type	☐ Publicly available, critically reviewed LCA ☐ Internally verified LCA with a product specific EPD ☒ Externally verified Product specific Type III EPD
LCA/EPD Reviewer	Original LCA was reviewed by Thomas P. Gloria, Industrial Ecology Consultants. Original EPD was certified by UL Environment.
Reference PCR(s) for LCA/EPD	Builder's Hardware Manufacturing Association (BHMA) Hardware PCR (UL9004)
LCA/EPD Scope	Cradle-to-Gate with Options
Date of LCA/EPD Issue	April 23, 2019
Date of LCA/EPD Expiration	April 22, 2024
Markets of Applicability	North America
LCA Software and Version Number	GaBi 8.7.1.30
LCI Database and Version Number	GaBi Database Version 8.7, Service Pack 35
LCIA Methodology and Version Number	TRACI 2.1
Action Plan Date of Issue	September 15, 2020
Action Plan Period of Validity	3 years from date of issue
Action Plan Type	Product Specific
Is the action plan applicable to all products listed in the corresponding LCA/EPD or only a subset?	All products specified in the EPD
This Action Plan was prepared by an expert in product specific LCAs/EPDs:	Matt Van Duinen, LCACP Sustainability Director WAP Sustainability
This Action Plan was confirmed by an executive of the manufacturer:	Tim Weller Manager of Codes, Standards and Sustainability Allegion Plc

Product Description

Glynn-Johnson 100 Series holders and stops provide the most reliable and versatile concealed overhead door control. They are designed for installation on virtually all types of doors mounted on conventional type butt hinges, pivots, continuous hinges, swing clear hinges and numerous other specialty hinges. When used in conjunction with many surface-applied door closers, 100 Series holders and stops provide the most effective control for entrance doors and vestibule doors of all types, as well as heavy or often used interior doors. Templates provided allow for variable mounting positions, ranging from 85° - 110° of opening. The CSI division for this product is 08 71 00.

LCA Description

The cradle-to-gate with options, product-specific life cycle assessment and subsequent EPD were created according to the following standards: Builder's Hardware Manufacturing Association (BHMA) Hardware PCR (UL9004), and ISO 14025/40/44. The assessment was performed using the GaBi LCA software. Both the LCA report and EPD were externally reviewed and verified against the previous standards by UL Environment. Allegion associates collected the bill of materials data for the product which was utilized in the model. Additionally, facility level utility data was collected and allocated to each product to generate manufacturing impacts. Finally, transportation data was collected via supplier locations and utilized to generate these impacts.

LCA Results

The cradle-to-gate with options results for the product are shown below using TRACI v2.1 indicators. The dominance analysis shows that the Production Stage (A1-A3) of the life cycle is responsible for the vast majority of impacts (91-100%, on average) across all impact categories. A1-A3 includes the extraction, processing and sourcing of all materials. The life cycle module that contributes the second largest impacts is the installation phase which includes manufacturing of fasteners. These trends are observed for both stainless steel and brass material options.

LCA Results from EPD – Stainless Steel Option							
Impact Category	A1-A3	A4	A5	B1	B2	B3	B4
AP [kg SO2 eq]	1.50E-02	1.36E-04	1.04E-03	MND	MND	MND	MND
EP [kg N eq]	1.80E-03	1.13E-05	3.67E-05	MND	MND	MND	MND
GWP [kg CO2 eq]	8.76E+00	3.00E-02	1.97E-01	MND	MND	MND	MND
ODP [kg CFC 11 eq]	3.40E-08	-1.59E-16	-6.09E-15	MND	MND	MND	MND
Resources [MJ]	5.57E-02	1.52E-01	0.00E+00	MND	MND	MND	MND
POCP [kg O3 eq]	2.45E-01	3.17E-03	1.10E-02	MND	MND	MND	MND

Impact Category	B5	B6	B7	C1	C2	C3	C4	D
AP [kg SO2 eq]	MND	MND	MND	0.00E+00	4.72E-05	0.00E+00	4.98E-05	MND
EP [kg N eq]	MND	MND	MND	0.00E+00	4.59E-06	0.00E+00	5.60E-06	MND
GWP [kg CO2 eq]	MND	MND	MND	0.00E+00	0.00E+00	1.75E-02	0.00E+00	MND
ODP [kg CFC 11 eq]	MND	MND	MND	0.00E+00	0.00E+00	-9.37E-17	0.00E+00	MND
Resources [MJ]	MND	MND	MND	0.00E+00	3.29E-02	0.00E+00	1.79E-s02	MND
POCP [kg O3 eq]	MND	MND	MND	0.00E+00	1.06E-03	0.00E+00	8.24E-04	MND

LCA Results from EPD – Brass Option							
Impact Category	A1-A3	A4	A5	B1	B2	B3	B4
AP [kg SO2 eq]	1.66E-02	1.55E-04	1.04E-03	MND	MND	MND	MND
EP [kg N eq]	1.75E-03	1.29E-05	3.67E-05	MND	MND	MND	MND
GWP [kg CO2 eq]	7.89E+00	3.42E-02	1.97E-01	MND	MND	MND	MND
ODP [kg CFC 11 eq]	3.40E-08	-1.81E-16	-6.09E-15	MND	MND	MND	MND
Resources [MJ]	8.53E+00	6.36E-02	1.52E-01	MND	MND	MND	MND
POCP [kg O3 eq]	1.81E-01	3.63E-03	1.10E-02	MND	MND	MND	MND

Impact Category	B5	B6	B7	C1	C2	C3	C4	D
AP [kg SO2 eq]	MND	MND	MND	0.00E+00	4.94E-05	0.00E+00	5.21E-05	MND
EP [kg N eq]	MND	MND	MND	0.00E+00	4.80E-06	0.00E+00	5.85E-06	MND
GWP [kg CO2 eq]	MND	MND	MND	0.00E+00	1.83E-02	0.00E+00	9.35E-03	MND
ODP [kg CFC 11 eq]	MND	MND	MND	0.00E+00	-9.80E-17	0.00E+00	-4.91E-16	MND
Resources [MJ]	MND	MND	MND	0.00E+00	3.44E-02	0.00E+00	1.88E-02	MND
POCP [kg O3 eq]	MND	MND	MND	0.00E+00	1.11E-03	0.00E+00	8.61E-04	MND

The results presented in the table above are equivalent to those presented in the EPD. Values are for one door holder.

Impact Reduction Action Plan

At an organizational level, Allegion is pioneering safety by protecting people where they live and work and protecting the environment at the same time. Allegion promotes the health and safety of its employees, customers, and local community members worldwide through its commitment to conducting business in a safe and environmentally responsible manner.

Allegion operates with principles that support its proactive commitment. The set of principles includes making continuous improvements in environmental, health, safety (EHS) and sustainability management systems and performance through a reduction of usage of natural resources, waste minimization, and prevention of pollution. Additionally, Allegion is dedicated to designing and operating facilities in a manner that minimizes negative EHS and sustainability impacts. For more information Allegion's sustainability efforts, please visit:
https://us.allegion.com/en/home/trade/architect/resources/sustainable-building.html

As indicated by the results on the previous page, the vast majority of the impacts across the cycle stage are due to the materials chosen for use in the product. Since Allegion does not have direct control over manufacturing of these materials as the majority of the raw material parts are pre-formed by suppliers, there are various challenges in determining which impact reduction steps to take. That being said, the following items have been identified as steps that Allegion will be taking over the course of the next three years to reduce the impacts of our products, listed in decreasing order of priority.

Impact Reduction Steps	Reduction Scope	Expected Outcomes	Responsible Team(s)	Due Date
Communicate request for additional recycled content to brass and steel suppliers	Formulation Change/ Supplier Change	Average recycled content of brass and steel increases each by >15%	Sustainability/ Sourcing	Q4 2021
Logistics optimization	Distribution	Supply chain map with shipping criteria to reduce impacts	Sourcing/ Logistics	Q1 2022
Communicate need for ability to track manufacturing inputs per product type	Supplier/ Facilities	Equipment sub-metering or ability to deduce energy consumption for different product types	Facilities/ Operations	Q2 2022
Request that distributors implement take back programs for customers to return product at end of life for recycling	Co-ordination between Customers and Operations	Decrease contributions to landfill by >10%	Operations/ Distribution/ Sales	Q2 2022
Consider process efficiencies and work with engineering team to reduce energy consumption in production process	Manufacturing	Report of various considerations on how to make production more energy efficient with a plan to trial some of these solutions	Engineering/ Operations	Q2 2022