

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 14025 AND ISO 21930:2017

Swing Operator Systems



SmartEPD-2026-136-0881-01

Date of Issue
Jun 01, 2026

Expiration Date
Jun 01, 2031

Last Updated
Jun 01, 2026

Refer to the EPD Library at www.smartepd.com for the latest EPD listing information



General Information

Horton Automatics

📍 2501 S. State, TX 121 BUS Suite 200, Lewisville, TX 75067

📞 1-800-531-3111

✉ john_gollihar@hortonddoors.com

🌐 hortonddoors.com



Product Name:	Swing Operator Systems
Declared Unit:	1 m2 of door opening maintained and operated for 10 years
Declaration Number:	SmartEPD-2026-136-0881-01
Date of Issue:	June 01, 2026
Expiration:	June 01, 2031
Last updated:	June 01, 2026
EPD Scope:	Cradle to gate with other options A1 - A3, A4, A5, B6, B7, C1 - C4
Market(s) of Applicability:	North America

General Organization Information

Horton Automatics is the leading manufacturer of automatic entrance systems for commercial, industrial, healthcare, and institutional use across North America and beyond. Horton developed the first automatic door in America in 1960, effectively launching the automatic door industry. Horton sets the standard for high-performance pedestrian access solutions with proven product lines including automatic and manual sliding doors, swing and folding door systems, revolving doors, and specialty ICU and security door solutions. As a division of Overhead Door Corporation, Horton Automatics addresses a broad range of pedestrian specialty door and access applications under the brands Horton Automatics, Won-Door, and Door Services Corporation. Today, Horton's solutions can be found in hospitals, airports, hotels, retail locations, and government facilities worldwide, engineered to deliver safety, security, and convenience for the most demanding environments. For full details on Horton Automatics products and solutions, visit: <https://www.hortonddoors.com/>

Further information can be found at: <https://www.hortonddoors.com/>

Limitations, Liability and Ownership

Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of products using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the whole building life cycle. EPD comparability is only possible when all stages of a life cycle have been considered. However, variations and deviations are possible. Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared. The EPD owner has sole ownership, liability, and responsibility for the EPD.

Reference Standards

Standard(s): ISO 14025 and ISO 21930:2017

Core PCR:	Smart EPD® Part A Product Category Rules for Building and Construction Products and Services, 1000, v1.2 Date of issue: March 14, 2025 Valid until: March 14, 2030
Sub-category PCR review panel:	 Contact Smart EPD for more information.
General Program Instructions:	 Smart EPD General Program Instructions v.2.0, March 2025

Verification Information

LCA Author/Creator:	 Seth Rogers  PARQ  seth@parqhq.com	
EPD Program Operator:	 Smart EPD  info@smartepd.com  www.smartepd.com  585 Grove St., Ste. 145, Herndon, VA 20170, USA	
Verification:	Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071:  Arka Pandit  pandit_arka@outlook.com Independent external verification of EPD, according to ISO 14025 and reference PCR(s):  Arka Pandit  pandit_arka@outlook.com	External External

Product Information

Declared Unit:	1 m2 of door opening maintained and operated for 10 years
Mass:	10.09 kg
Reference Service Life:	10 Years
Product Specificity:	 Product Average  Product Specific  Representative Product EPD

Product Description

The Horton HD-Swing Automatic Swing Operator Systems are heavy-duty, low energy operators designed to provide reliable automated access across a wide range of commercial and institutional applications, including healthcare facilities, office buildings, airports, and government buildings. Available in surface-applied (S4100LE) and overhead concealed in-transom (S4800LE) configurations, these systems deliver automated door operation with adjustable opening and closing speeds, supporting both inswing and outswing door arrangements. Capable of handling heavy pedestrian traffic loads, they are a versatile solution for main entrances, corridors, and high-use thresholds.

Further information can be found at: <https://www.hortondoors.com/swinging-door-systems/ada-low-energy-and-manual-swing/>

Product Specifications

Product SKU(s):	The Environmental Product Declaration (EPD) for the S4100LE and S4800LE covers the operator unit only and does not include the frame, glazing, or any other associated building components.
Product Classification Codes:	EC3 - Openings Masterformat - 08 42 29
Form Factor:	Openings

Material Composition

Material/Component Category	Origin	% Mass
Aluminum	CO	36.27
Fasteners	US	0.19
Lubricating oil	GLO	0.16
Motor and Electronics	CN, HK	22.57
Sealing and Gaskets	US, HK	0.51
Steel	BR	40.29

Packaging Material	Origin	kg Mass
Cardboard		0.1
Plastic LDPE		0None
Wood pallet		0.02

Biogenic Carbon Content	kg C per m2
Biogenic carbon content in product	0None
Biogenic carbon content in accompanying packaging	0.06

Hazardous Materials
Lubricating oil

EPD Data Specificity

Primary Data Year:	01/01/2025 - 12/31/2025
Manufacturing Specificity:	✗ Industry Average ✗ Manufacturer Average

✓ Facility Specific

Averaging:

The results represent an average of material composition and manufacturing impact for those products.

System Boundary

Production	A1	Raw material supply	✓
	A2	Transport	✓
	A3	Manufacturing	✓
Construction	A4	Transport to site	✓
	A5	Assembly / Install	✓
Use	B1	Use	ND
	B2	Maintenance	ND
	B3	Repair	ND
	B4	Replacement	ND
	B5	Refurbishment	ND
	B6	Operational Energy Use	✓
	B7	Operational Water Use	✓
End of Life	C1	Deconstruction	✓
	C2	Transport	✓
	C3	Waste Processing	✓
	C4	Disposal	✓
Benefits & Loads Beyond System Boundary	D	Recycling, Reuse Recovery Potential	ND

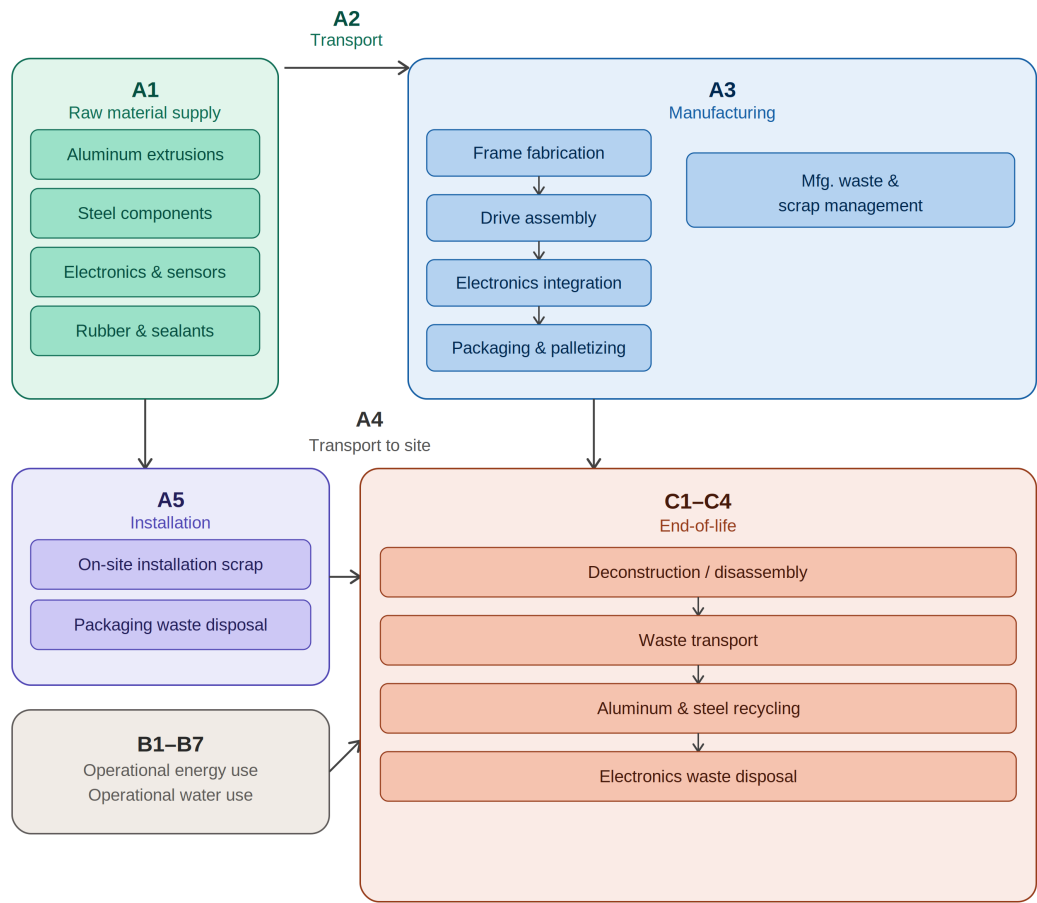
Note:

ND = Module not declared

Plants

 Tamaulipas, México Calle 1 1600, Chapultepec, Matamoros, Tamaulipas, México

Product Flow Diagram



Software And Database

LCA Software:	 SimaPro v. 10.2
LCI Foreground Database(s):	 Ecoinvent v. 3.11  Cut-off by Classification
LCI Background Database(s):	 Ecoinvent v. 3.11  Cut-off by Classification

A foreground LCI database is the database used to model the primary, site-specific data collected for this EPD. A background LCI database is the database used to model generic or non-specific data.

Data Quality

Precision & Completeness

- **Precision:** Inventory data were directly measured, calculated, or conservatively estimated from primary sources using consistent units and QA checks. Background processes from ecoinvent v3.11 were adopted with their documented uncertainty/precision metadata where available, preserving a transparent record of data quality.
- **Completeness:** The product system's mass and energy balance, as well as inventory completeness, were verified. Minor exclusions deemed immaterial under ISO 21930 § 7.1.8 were applied, including personnel impacts, R&D activities, business travel, and point-of-sale infrastructure. There was no intentional data omission.

Consistency and Reproducibility

- **Consistency:** Primary data for all modules were consistently gathered aiming at the highest level of detail possible. Background processes were modeled mainly with the ecoinvent database. The same allocation rules, cut-off criteria, and impact assessment methods were applied throughout, ensuring methodological coherence and consistent data quality across the entire LCA model.
- **Reproducibility:** This study ensures reproducibility by providing comprehensive disclosure of input-output data, dataset choices, and modeling approaches. A knowledgeable third party should be able to approximate the results using the same data and modeling methods.

Representativeness

- **Temporal:** Primary data were collected over a 12-month period representing the 2025 calendar year. Secondary data from the ecoinvent v3 database are representative of recent reference years.
- **Geographical:** Primary data reflect the actual production facilities. Where relevant, differences in electricity grid mixes were accounted for, using appropriate secondary datasets. Country-specific data were used whenever available to ensure high geographical representativeness, while proxy data were applied only when necessary.
- **Technological:** Primary and secondary data were selected to reflect the actual technologies used, ensuring high technological representativeness.

Data Sources

Material/Process Category	Module	Material/Process Name	Inventory Dataset Name	Dataset Geographic Region	Reporting Period/Year Dataset Represents	Reference	Amount (if relevant)	Unit
Raw Material	A1	Extruded Aluminum	Proxy combination	CO	2025	Ecoinvent 3.11	ND	ND
Raw Material	A1	Motor and Electronics	Proxy combination	GLO	2025	Ecoinvent 3.11	ND	ND
Raw Material	A1	Steel	Proxy combination	BR, US	2025	Ecoinvent 3.11	ND	ND

Life Cycle Module Description

Modules A1–A3: These LCA Modules covers extraction and processing of primary materials(aluminum and steel), transport of components to Horton Automatics manufacturing facilities, and all manufacturing processes including energy use, emissions, and disposal of production waste (scrap losses).

Modules A4–A5: Includes delivery of the door to the installation site, as well as on-site installation and disposal of packaging materials. No installation waste is generated as doors are fabricated for specific openings.

Modules B1–B7: Modules B2–B5 (Maintenance, Repair, Replacement, and Refurbishment) are not declared. Of the declared modules: B1 reports zero impacts from normal use; B6 accounts for operational electricity consumption based on the product's power rating and assumed frequency of use; and B7 reports zero impacts as no water is used during operation.

Modules C1–C4: Covers deconstruction (manual, no energy input required), transport of waste to processing facilities, waste processing of material components, and final disposal. Recovered metals exit the system boundary at the recycling facility gate, once they reach end-of-waste status.

LCA Discussion

Allocation Procedure

Allocation of co-products was avoided, to the extent possible, based on the guidance given in ISO 14044:2006, 4.3, and in ISO 21930:2019. Utilities used at the facility level were allocated by mass. The manufacturing process does not consume water or generate wastewater or air emissions, other than those from fuel combustion. Solid waste was estimated using packaging masses and material losses and allocated following the polluter pays principle.

Cut-off Procedure

For the processes within the system boundary, all available energy and material flow data have been included in the model. Cut-off criteria, however, were applied to exclude capital goods and infrastructure, personnel impacts, R&D activities, business travel, and point-of-sale infrastructure, as these are assumed to not significantly affect LCA results nor conclusions.

Renewable Electricity

Energy Attribute Certificates (EACs) such as Renewable Energy Certificates (RECs) or Power Purchase Agreements (PPAs) are included in the baseline reported results: ✗ No

Scenarios

Transport to the building/construction site (A4)

A4 Module

Fuel Type:	Diesel
Vehicle Type:	Truck and Trailer
Transport Distance:	838 km
Capacity Utilization:	33 %
Packaging Mass:	0.125 kg
Weight of products transported:	10.12 kg
Capacity utilization volume factor:	1
Assumptions for scenario development:	Transport distance includes finished product to distribution center and distribution center to point of sale.

Installation in to the building/construction site (A5)

A5 Module

Mass of Packaging Waste Specified by Type:	0.125 kg
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Biogenic Carbon Contained in Packaging (kg C): 0.05739 kg
Assumptions for scenario development: The model does not assume installation scrap.

Operational Energy Use (B6) & Operational Water Use (B7)

B6 & B7 Modules

Equipment Power Output: 1489.2 kWh
Characteristic Performance:

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 148.92 kWh/yr based on the power rating of the product and assumed frequency of use. Total Energy is declared per RSL of the product (10 years). No water use occurs during the operation of the product and impacts are zero.

End of Life (C1 - C4)

C1 - C4 Modules

Collection Process

Collected with Mixed Construction Waste: 10 kg

Recovery

Recycling: 0.7707 kg
Landfill: 9.229 kg

Assumptions for scenario development:
The disposal rates per material were assumed as per PCR defaults

Results

Environmental Impact Assessment Results

TRACI 2.2

per 1 m2 of product of door opening maintained and operated for 10 years.

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Impact Category	Unit	Method	A1 - A3	A4	A5	B6	B7	C1	C2	C3	C4
GWP-total	kg CO2 eq	TRACI 2.2	1.03e+2	8.75e-1	3.90e-3	9.02e+2	0	0	3.56e-2	0	3.00e-2
GWP-fossil	kg CO2 eq	TRACI 2.2	1.01e+2	8.74e-1	3.89e-3	9.01e+2	0	0	3.56e-2	0	3.00e-2
GWP-biogenic	kg CO2 eq	TRACI 2.2	8.36e-1	2.72e-4	7.47e-6	1.07e-1	0	0	8.33e-6	0	5.04e-6
GWP-luluc	kg CO2 eq	TRACI 2.2	4.95e-1	4.72e-4	1.23e-6	7.81e-2	0	0	1.61e-5	0	2.86e-5
ODP	kg CFC-11 eq	TRACI 2.2	2.73e-6	1.23e-8	5.51e-11	1.73e-5	0	0	5.07e-10	0	4.17e-10
AP	kg SO2 eq	TRACI 2.2	8.07e-1	2.80e-3	2.78e-5	2.93e+0	0	0	1.11e-4	0	2.26e-4
SFP	kg O3 eq	TRACI 2.2	7.93e+0	6.17e-2	7.75e-4	3.58e+1	0	0	2.49e-3	0	6.84e-3
EP-freshwater	kg P eq	TRACI 2.2	5.07e-2	6.78e-5	1.49e-6	6.94e-2	0	0	2.53e-6	0	1.40e-6
EP-marine	kg N eq	TRACI 2.2	8.37e-2	5.29e-4	7.10e-6	3.10e-1	0	0	2.13e-5	0	5.75e-5

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particular Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase when product performance and specifications have been established and serve as a functional unit for comparison. Environmental impact results shall be converted to a functional unit basis before any comparison is attempted. Any comparison of EPDs shall be subject to the requirements of ISO 21930 or EN 15804. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries, are based on different product category rules or are missing relevant environmental impacts. Such comparison can be inaccurate, and could lead to erroneous selection of materials or products which are higher-impact, at least in some impact categories.

Resource Use Indicator

per 1 m2 of product of door opening maintained and operated for 10 years.

Indicator	Unit	A1 - A3	A4	A5	B6	B7	C1	C2	C3	C4
RPRE	MJ	1.36e+2	2.18e-1	1.05e-3	1.46e+3	0	0	6.81e-3	0	1.34e-2
RPRM	MJ	1.58e+1	0	0	0	0	0	0	0	0
RPRT	MJ	1.52e+2	2.18e-1	1.05e-3	1.46e+3	0	0	6.81e-3	0	1.34e-2
NRPRE	MJ	1.11e+3	1.23e+1	3.07e-2	1.25e+4	0	0	5.02e-1	0	3.74e-1
NRPRM	MJ	0	0	0	0	0	0	0	0	0
NRPRT	MJ	1.11e+3	1.23e+1	3.07e-2	1.25e+4	0	0	5.02e-1	0	3.74e-1
SM	kg	1.83e+0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
RE	MJ	0	0	0	0	0	0	0	0	0
ADP-fossil	MJ	1.11e+3	1.23e+1	3.07e-2	1.25e+4	0	0	5.02e-1	0	3.74e-1
FW	m3	2.46e+1	6.90e-2	3.43e-3	8.01e+1	0	0	2.67e-3	0	1.55e-3

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

RPRE or PERE = Renewable primary resources used as energy carrier (fuel), RPRM or PERM = Renewable primary resources with energy content used as material, RPRT or PERT = Total use of renewable primary resources with energy content, NRPRE or PENRE = Non-renewable primary resources used as an energy carrier (fuel), NRPRM or PENRM = Non-renewable primary resources with energy content used as material, NRPRM or PENRM = Total non-renewable primary resources with energy content, SM = Secondary materials, RSF = Renewable secondary fuels, NRSF = Non-renewable secondary fuels, RE = Recovered energy, ADPF = Abiotic depletion potential, FW = Use of net freshwater resources, VOCs = Volatile Organic Compounds.

Waste and Output Flow Indicators

per 1 m2 of product of door opening maintained and operated for 10 years.

Indicator	Unit	A1 - A3	A4	A5	B6	B7	C1	C2	C3	C4
HWD	kg	9.75e-3	0	0	0	0	0	0	0	1.57e-2
NHWD	kg	8.47e-1	0	1.25e-1	0	0	0	0	0	9.21e+0
HLLRW	kg	0	0	0	0	0	0	0	0	0
ILLRW	kg	0	0	0	0	0	0	0	0	0
CRU	kg	0	0	0	0	0	0	0	0	0
MR	kg	1.17e-2	0	0	0	0	0	0	7.71e-1	0
MER	kg	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER = Materials for incineration, no energy recovery, EE or EEE = Recovered energy exported from the product system, EET = Exported thermal energy.

Carbon Emissions and Removals

per 1 m2 of product of door opening maintained and operated for 10 years.

Indicator	Unit	A1 - A3	A4	A5	B6	B7	C1	C2	C3	C4
Bio Carbon Removal from Product	kg CO2	0	0	0	0	0	0	0	0	0
Bio Carbon Emission from Product	kg CO2	0	0	0	0	0	0	0	0	0
Bio Carbon Removal from Packaging	kg CO2	-1.46e+0	0	0	0	0	0	0	0	0
Bio Carbon Emission from Packaging	kg CO2	1.25e+0	0	2.10e-1	0	0	0	0	0	0
Bio Carbon Emission from Waste during Manufacturing (renewable source)	kg CO2	0	0	0	0	0	0	0	0	0
Calcination Carbon Removal	kg CO2	0	0	0	0	0	0	0	0	0
Carbonation Carbon Emission	kg CO2	0	0	0	0	0	0	0	0	0
Carbon Emission from Waste during Manufacturing (non-renewable source)	kg CO2	0	0	0	0	0	0	0	0	0

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

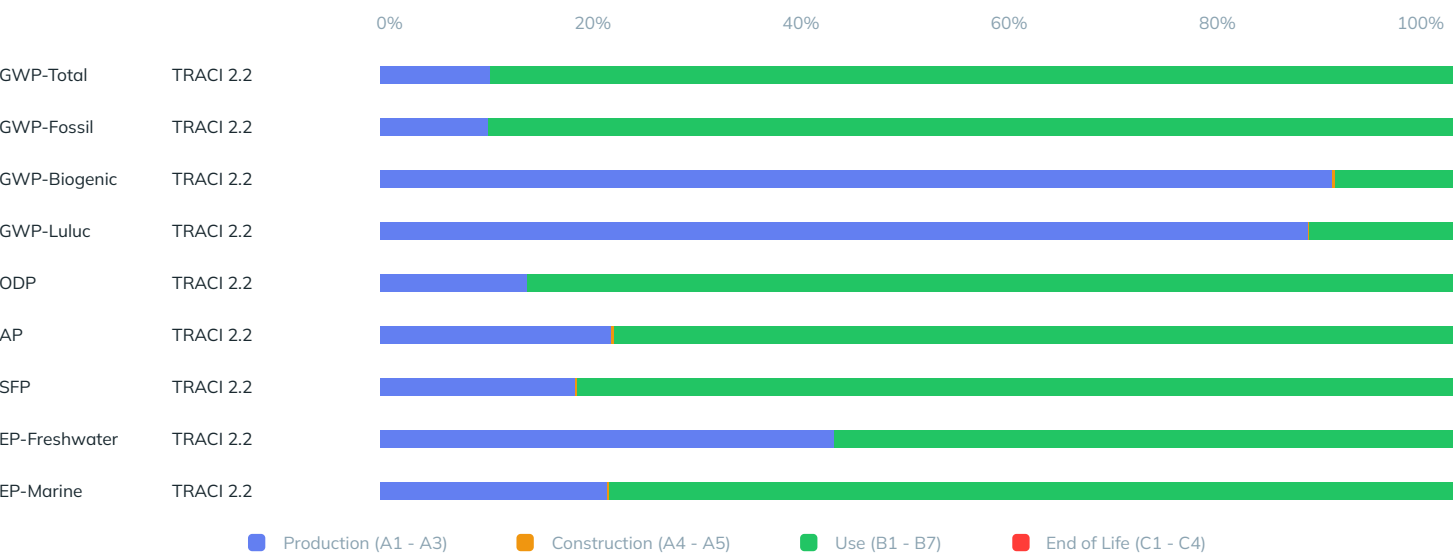
Abbreviations:

BCRP = Biogenic Carbon Removal from Product, BCEP = Biogenic Carbon Emission from Product, BCRK = Biogenic Carbon Removal from Packaging, BCEK = Biogenic Carbon Emission from Packaging, BCEW = Biogenic Carbon Emission from Combustion of Waste from Renewable Sources Used in Production Processes, CCE = Calcination Carbon Emissions, CCR = Carbonation Carbon Removals, CWNR = Carbon Emissions from Combustion of Waste from Non-Renewable Sources used in Production Processes, GWP-luc = Carbon Emissions from Land-use Change.

Interpretation

The manufacturing of the products analyzed in this EPD involves the direct procurement of raw materials from suppliers, transported to manufacturing facilities (A2) where they are processed and assembled into finished products (A1–A3). Results show that modules A1–A3 carry the highest impact contribution across most impact categories, driven by the environmental burdens associated with raw material extraction and processing. Operational energy use (B6) also represents a significant contributor over the declared 10-year reference service life.

Opportunities to reduce overall impact include exploring material sourcing strategies that lower the burden of A1–A3, such as engaging suppliers who employ sustainable manufacturing practices or integrate renewable energy into their production processes.



Additional Environmental Information

None

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