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Vertika®

Wall Channel System

Environmental Product Declaration

Date of Issue: 08/14/2023
Date of Expiration: 08/14/2028

PRODUCT CATEGORY RULE
UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010, V3.2
UL Part B: Metal Ceiling and Interior Wall Panel System EPD Requirements, UL 10010-12, V1.0.

DECLARED UNIT
1 m^2 wall channel system

ASTM INTERNATIONAL

Program Operator	ASTM International 100 Barr Harbor Dr., West Conshohocken, PA 19428 cert@astm.org
General Program Instructions and Version Number	ASTM Program Operator Rules. Version: 8.0, Revised 04/29/20
Manufacturer Name and Address	Arktura LLC 18225 South Figueroa Street, Los Angeles, CA 90248 info@arktura.com
Declaration Number	ASTM-EPD551
Declared Product and Functional Unit	Wall Channel System Declared Unit: 1 m^2 of wall channel systerm (alternative unit of 1 ft^2 also declared)
Reference PCR and Version Number	ISO 21930:2017 UL Part A: Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010, V3.2. UL Part B: Metal Ceiling and Interior Wall Panel System EPD Requirements, , v1.0
Product's intended Application and Use	Commercial
Intended Audience	Business-to-Business
Product RSL	n/a
Markets of Applicability	North America
Date of Issue	08/14/2023
Period of Validity	5 years from date of issue
EPD Type	Manufacturer Specific
EPD Scope	Cradle-to-Gate (A1 to A3 modules)
Year of reported manufacturer primary data	2021
LCA Software and Version Number	GaBi 10.7
LCI Database and Version Number	GaBi Database 2022.2
LCIA Methodology and Version Number	TRACI 2.1 + IPCC AR5
LCIA Results Overview per 1ft^2 (A1 to A3 modules)	
	Vertika®
GWP [kg CO_2 eq]	1.35
ODP [kg CFC 11 eq]	7.18E-11
AP [kg SO_2 eq]	5.69E-03
EP [kg N eq]	4.93E-04
SFP [kg O_3 eq]	5.16E-02
Resources [MJ]	1.47E+00
The sub-category PCR review was conducted by:	Jack Geibig, P.E. (Chair) Philip S. Moser, P.E. Kristen Rowe, MEM
Independent verification of the declaration and data, according to ISO 21930:2017, UL Part A, ISO 14025:2006, and UL Part B sub-category. **☐ Internal ☒ External**	Tim Brooke, ASTM International
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	WAP Sustainability Consulting
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Lindita Bushi, Ph.D., Athena Sustainable Materials Institute

Limitations:

- Environmental declarations from different programs (ISO 14025) may not be comparable.
- Comparison of the environmental performance of Metal Ceiling and Wall System 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 building energy use phase as instructed under this PCR.
- Full conformance with this PCR allows EPD comparability only 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.

General Information

Company Description

At Arktura, we make design happen. For over a decade, Arktura has been at the forefront of architectural design and fabrication, delivering groundbreaking, award-winning products and custom projects, working in collaboration with architects and interior designers around the world.

Our architectural systems are devised with flexibility in mind, combining powerful design variables that allow each product to be tailored to a wide range of environments. Our growing line of offerings, including acoustic solutions, ceiling clouds and baffles, interior and exterior panel systems, and building façades set new standards across the A+D community in terms of design aesthetic, adaptability and product quality.

Each of our standardized products is an easy-to-use, highly flexible “tool set.” From overall configuration right down to attachment points, perforations, patterns, and finishes, the variables designed into each core product set can be adjusted to meet your requirements. Explore our products library to see the results—visual impact, simple refinement, and ease of installation.

All products are manufactured at Arktura’s Los Angeles factory.

Product Description

Vertika® wall channel system enables Arktura's growing lineup of torsion panel products to effortlessly span walls or achieving seamless wall-to-ceiling transitions. It is designed to make installation simple while keeping in mind ease of access for ongoing maintenance. Add available options and accessories, including Arktura's integrated InLine or Backlight lighting, acoustic and translucent backers, and there is no limit to the effects you can achieve. Pair it with Vapor®, VaporHue™, VaporSoft®, Delta Drop®, Trace®, Particle®, or Vapor® Graphic Perf®.
CSI: 07 42 63; UNSPSC: 25172000

The product is intended for use in an interior, commercial setting.

Product Composition

No substances required to be reported, per RCRA, Subtitle 3, as hazardous are associated with the production of this product.

Table 1: Product compositions

Mass %	Recycled Content %	Vertika®
Steel	22%	70.9%
Aluminium	25%	26.7%
Other	Varies	2.4%

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Technical Requirements

Table 2: Technical requirements

Name and Standard	Unit	Vertika®
Standard test methods for surface burning characteristics of building materials (ASTM E84)	Flame spread/smoke developed	Class A

LCA Methodology

Declared Unit

Table 3: Declared unit details

		Vertika®
Declared unit	m^2	1
Weight	kg	2.48
Conversion to 1 kg	-	0.403
Alternate declared unit	ft^2	1
Alternate declared unit weight	lb	0.509
Thickness	cm	10.8
Alternate thickness	in	4.25

System Boundary

Table 4. Description of the system boundary modules

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

*MND = not declared

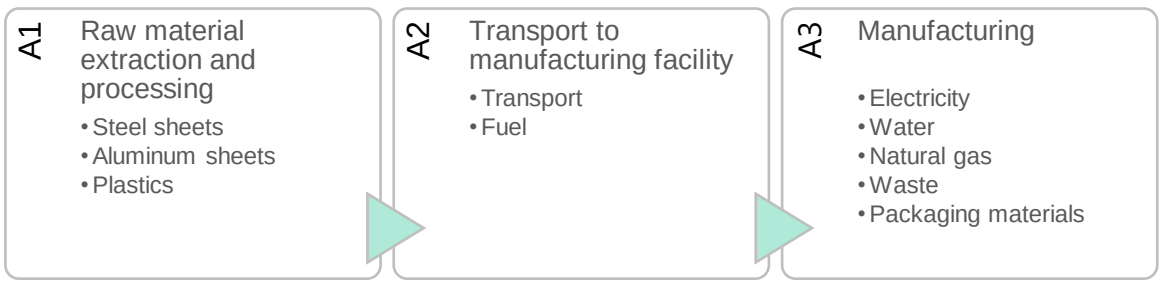

Figure 1: System boundary diagram

Note that hanger wires, molding, and/or attachment/hold down clips are excluded from the system boundary.

Allocation
General principles of allocation were based on ISO 14040/44. To derive a per-unit value for manufacturing inputs such as electricity, thermal energy and water, allocation based on total production by area was adopted, as this is the basis on which products are processed and sold, regardless of product weight. As a default, secondary GaBi datasets use a physical basis for allocation.

Cut-off Rules
Material inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact. Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit. No known flows are deliberately excluded from this EPD.

Period Under Review
Data were obtained from Arktura for calendar year 2021.

Technical Information and Scenarios

Manufacturing
Arktura's Vertika® wall systems are manufactured primarily from sheet metal. Metal sheets are cut, labeled, and bent into shape for the structural or framing components. These metal components are powder coated and assembled together, then the products are packaged, shipped and installed.

Packaging
Packaging requirements are presented in Table 5, per functional unit.

Table 5: Packaging per m^2

kg/m^2	Vertika®
Packaging Lumber	0.45
Packaging Plywood	0.31
Packaging Paper	0.04
Packaging Polystyrene	0.01
Packaging Cardboard	0.01
Packaging LDPE Foam	0.01

Results

Environmental impacts were calculated using the GaBi software platform. Impact results have been calculated using IPCC AR5 and TRACI 2.1 characterization factors. Results presented in this report are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks.

Acronym [Unit]	**Environmental Indicators**	**Methodology**
GWP [kg CO_2 eq]	Global Warming Potential, excl biogenic carbon	IPCC AR5
ODP [kg CFC-11 eq]	Ozone Depletion Potential	TRACI 2.1
AP [kg SO_2 eq]	Acidification Potential	TRACI 2.1
EP [kg N eq]	Eutrophication Potential	TRACI 2.1
SFP [kg O_3 eq]	Smog Formation Potential	TRACI 2.1
Resources [MJ, Surplus Energy]	Resources, Fossil fuels [MJ surplus energy]	TRACI 2.1
Resource Use Indicators		
RPRE [MJ]	Use of renewable primary energy	
RPRM [MJ]	Renewable primary energy resources used as raw materials	
RPRT [MJ]	Total use of renewable primary energy resources	
NRPRE [MJ]	Use of non-renewable primary energy	
NRPRM [MJ]	Non-renewable primary energy resources used as raw materials	
NRPRT [MJ]	Total use of non-renewable primary energy resources	
SM [kg]	Input of secondary material	
RSF [MJ]	Use of renewable secondary fuels	
NRSF [MJ]	Use of non renewable secondary fuels	
RE [MJ]	Recovered energy	
FW [m^3]	Use of net fresh water	
Output Flows and Waste Categories		
HWD [kg]	Hazardous waste disposed	
NHWD [kg]	Non-hazardous waste disposed	
HLRW [kg]	High-level radioactive waste, conditioned, to final repository	
ILLRW [kg]	Intermediate- and low-level radioactive waste, conditioned, to final repository	
CRU [kg]	Components for re-use	
MR [kg]	Materials for Recycling	
MER [kg]	Material for Energy Recovery	
EEE [MJ]	Exported electrical energy	
EET [MJ]	Exported thermal energy	

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LCA Results

Table 6: LCA Results, per 1 m^2 panels (A1 to A3)

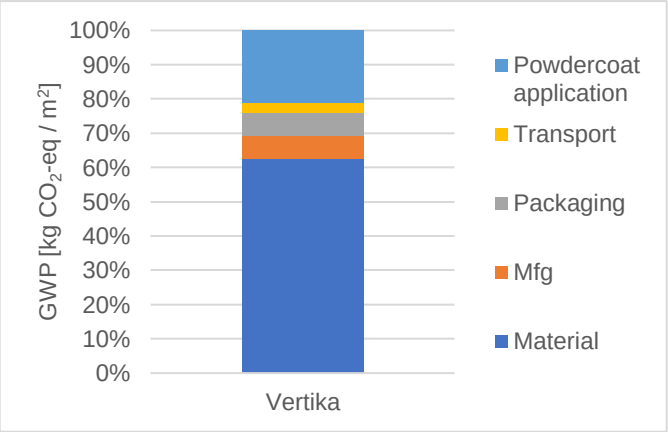
Impact Categories	Vertika®
GWP [kg CO_2 eq]	14.5
ODP [kg CFC 11 eq]	7.73E-10
AP [kg SO_2 eq]	6.12E-02
EP [kg N eq]	5.31E-03
SFP [kg O_3 eq]	5.56E-01
Resources [MJ]	1.58E+01
Resource Use Indicators	
RPRE [MJ]	7.15E+01
RPRM [MJ]	1.35E+01
RPRT [MJ]	8.49E+01
NRPRE [MJ]	1.80E+02
NRPRM [MJ]	1.01E+00
NRPRT [MJ]	1.81E+02
SM [kg]	8.19E-01
RSF [MJ]	0.00E+00
NRSF [MJ]	0.00E+00
RE [MJ]	0.00E+00
FW [m^3]	1.44E-01
Output Flows and Waste Categories	
HWD [kg]	3.31E-06
NHWD [kg]	2.76E+00
HLRW [kg]	6.27E-06
ILLRW [kg]	5.37E-03
CRU [kg]	0.00E+00
MR [kg]	7.84E-02
MER [kg]	0.00E+00
EEE [MJ]	8.69E-02
EET [MJ]	4.09E-02

Table 7: LCA Results, per 1 ft^2 panels (A1 to A3)

Impact Categories	Vertika®
GWP [kg CO_2 eq]	1.35
ODP [kg CFC 11 eq]	7.18E-11
AP [kg SO_2 eq]	5.69E-03
EP [kg N eq]	4.93E-04
SFP [kg O_3 eq]	5.16E-02
Resources [MJ]	1.47E+00
Resource Use Indicators	
RPRE [MJ]	6.64E+00
RPRM [MJ]	1.25E+00
RPRT [MJ]	7.89E+00
NRPRE [MJ]	1.67E+01
NRPRM [MJ]	9.39E-02
NRPRT [MJ]	1.68E+01
SM [kg]	7.61E-02
RSF [MJ]	0.00E+00
NRSF [MJ]	0.00E+00
RE [MJ]	0.00E+00
FW [m^3]	1.34E-02
Output Flows and Waste Categories	
HWD [kg]	3.07E-07
NHWD [kg]	2.56E-01
HLRW [kg]	5.82E-07
ILLRW [kg]	4.99E-04
CRU [kg]	0.00E+00
MR [kg]	7.28E-03
MER [kg]	0.00E+00
EEE [MJ]	8.07E-03
EET [MJ]	3.80E-03

Interpretation

A dominance analysis for Global Warming Potential was conducted for all products. Upstream raw material extraction and processing was found to be the largest contributor, followed by the powder coat and its application.



Additional Environmental Information

Environment and Health During Manufacturing

Arktura prioritizes environmental sustainability, health, and safety throughout its manufacturing processes. From product design to waste reduction initiatives, Arktura integrates responsible practices to minimize environmental impact. The company is committed to ensuring a safe working environment for its employees and strives to optimize energy and water usage while promoting recycling and responsible disposal practices.

Environment and Health During Installation

All recommendations shall be utilized as indicated by SDS and installation guidelines. Specific product SDS and installation instructions can be requested directly from Arktura.

Environmental Activities and Certifications

Additional environmental certifications for Arktua's products such as Declare Labels, HPD, SDS, VOC Testing, acoustical performance and light reflectance can be requested directly from Arktura.

References

ASTM Program Operator Rules. Version: 8.0, Revised 04/29/20.

Life Cycle Assessment of Arktura Products: Background Report for EPD of Metal and Non-metal Ceiling and Interior Wall Panel Products. WAP Sustainability. May 2023.

ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and procedures.

ISO 14040:2006/Amd1:2020 Environmental management - Life cycle assessment – Principles and framework.

ISO 14044:2006/Amd1:2017/Amd2:2020 Environmental management - Life cycle assessment – Requirements and guidelines.

ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services. Geneva: International Organization for Standardization.

UL Environment. (2018). Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010*, V3.2.*

UL Environment. (2020). *Part B: Metal Ceiling and Interior Wall Panel System EPD Requirements, UL 10010-12, V1.0.*